

CHƯƠNG TRÌNH ĐÀO TẠO KHÓA 2025
NGÀNH CÔNG NGHỆ THỰC PHẨM
TRÌNH ĐỘ ĐẠI HỌC

*(Kèm theo Quyết định số 1101/QĐ-ĐHQT ngày 04 tháng 9 năm 2025
của Hiệu trưởng Trường Đại học Quốc tế)*

1. Thông tin chung

- Tên ngành đào tạo: Công nghệ Thực phẩm
- + Tiếng Việt: Công nghệ Thực phẩm
- + Tiếng Anh: Food Technology
- Mã ngành đào tạo: 7540101
- Trình độ đào tạo: Đại học
- Loại hình đào tạo: Chính quy
- Thời gian đào tạo: 4.5 – 5 năm
- Tên văn bằng sau khi tốt nghiệp:
 - + Tiếng Việt: Kỹ sư Công nghệ Thực phẩm
 - + Tiếng Anh: Engineer in Food Technology
- Nơi đào tạo: Trường Đại học Quốc tế - ĐHQG-HCM

2. Thông tin tuyển sinh và kế hoạch đào tạo

a. Đối tượng tuyển sinh

Đối tượng tuyển sinh căn cứ theo quy chế tuyển sinh đại học của Bộ Giáo dục và Đào tạo và Thông tin tuyển sinh hàng năm của Đại học Quốc gia TP.HCM và Thông tin tuyển sinh của trường Đại học Quốc tế.

b. Hình thức tuyển sinh

Trường Đại học Quốc tế thực hiện tuyển sinh theo Quy chế tuyển sinh Đại học ban hành hàng năm bởi Bộ Giáo dục và Đào tạo, căn cứ theo Thông tin tuyển sinh hàng năm của Đại học Quốc gia TP.HCM và Thông tin tuyển sinh của trường Đại học Quốc tế.

c. Nhóm ngành tuyển sinh: IU04 (Khoa học sự sống và Hóa học)

d. Tổ hợp môn xét tuyển

- Toán, Vật lý, Hóa học
- Toán, Hóa học, Sinh học
- Toán, Hóa học, Tiếng Anh
- Toán, Sinh học, Tiếng Anh
- Ngữ Văn, Hóa học, Sinh học

- Ngữ Văn, Hóa học, Tiếng Anh

- Ngữ Văn, Sinh học, Tiếng Anh

e. Dự kiến chỉ tiêu tuyển sinh, quy mô đào tạo: 45

3. Mục tiêu đào tạo

a. Mục tiêu chung:

Mục tiêu đào tạo ngành Công nghệ Thực phẩm tại Trường Đại học Quốc Tế – ĐHQG TP.HCM nhằm trang bị cho sinh viên kiến thức chuyên môn, kỹ năng thực hành và phẩm chất đạo đức nghề nghiệp, đáp ứng nhu cầu của ngành công nghiệp thực phẩm trong bối cảnh hội nhập.

Bảng 1. Sự phù hợp của mục tiêu đào tạo với Tầm nhìn, sứ mạng và Mục tiêu giáo dục của Luật giáo dục đại học.

Mục tiêu đào tạo của CTĐT	Tầm nhìn	Sứ mạng	Luật giáo dục
Mục tiêu đào tạo ngành Công nghệ Thực phẩm tại Trường Đại học Quốc Tế – ĐHQG TP.HCM nhằm trang bị cho sinh viên kiến thức chuyên môn, kỹ năng thực hành và phẩm chất đạo đức nghề nghiệp, đáp ứng nhu cầu của ngành công nghiệp thực phẩm trong bối cảnh hội nhập.	Trường ĐHQG phấn đấu trở thành trường đại học theo định hướng nghiên cứu hàng đầu tại Việt Nam và châu Á; là cơ sở giáo dục ngang tầm quốc tế, tự chủ, sáng tạo; là nơi vun đắp và phát triển nguồn nhân lực chất lượng cao cho thị trường lao động trong nước và quốc tế.	Là cơ sở giáo dục quốc tế, mang bản sắc văn hóa Việt Nam. Cơ sở giáo dục đại học đi tiên phong trong đổi mới cơ chế quản trị đại học theo mô hình tự chủ và tiên tiến. Đào tạo chất lượng cao đa ngành – đa lĩnh vực. Đạt chuẩn kiểm định chất lượng giáo dục theo tiêu chuẩn quốc tế/khu vực cho tất cả các chương trình đào tạo. Giảng dạy và nghiên cứu thực hiện bằng tiếng Anh là điểm khác biệt nâng tầm quốc tế của nhà trường. Người học được đào tạo và rèn luyện để trở thành công dân toàn cầu và có trách nhiệm với xã hội, dẫn dắt xã hội trong tương lai. Nghiên cứu cơ bản với hàm lượng tri thức lớn song hành với nghiên cứu ứng dụng, đáp ứng yêu cầu đổi mới sáng	Có kiến thức chuyên môn toàn diện, nắm vững nguyên lý, quy luật tự nhiên - xã hội Có kỹ năng thực hành cơ bản Có khả năng làm việc độc lập, sáng tạo và giải quyết những vấn đề thuộc ngành được đào tạo

		tạo và phát triển bền vững của doanh nghiệp, địa phương và xã hội; quan tâm, thúc đẩy các hoạt động kết nối và phục vụ cộng đồng.	
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b. Mục tiêu cụ thể (Program Objectives - POs)

Mục tiêu cụ thể của CTĐT được xác định từ mục tiêu chung, bao gồm 6 mục tiêu, trong đó bao hàm mục tiêu về kiến thức, mục tiêu kỹ năng và mục tiêu về tự chủ và trách nhiệm, được trình bày như sau:

- PO1 - Có khả năng ra quyết định trong quản lý thực phẩm: Phân tích, đánh giá và đưa ra các tiêu chuẩn, quy tắc quản lý về CNTP (sở hữu công nghiệp thực phẩm, bao bì, nhãn mác), chất lượng, vệ sinh an toàn thực phẩm nhằm phục vụ việc ra quyết định cho nhà quản lý.

- PO2 - Có khả năng cung cấp các dịch vụ thực phẩm: Tư vấn đầu tư chuyên giao công nghệ (CGCN); tư vấn về dinh dưỡng, an toàn vệ sinh thực phẩm, cung cấp các dịch vụ kiểm định, kiểm soát chất lượng thực phẩm.

- PO3 - Có khả năng thiết kế, cải tiến và hoàn thiện sản phẩm thực phẩm: Nghiên cứu cải tiến, phát triển những sản phẩm thực phẩm mới có lợi cho sức khỏe con người; nghiên cứu cải tiến kỹ thuật sản xuất các sản phẩm thực phẩm và ứng dụng.

- PO4 - Có khả năng quản lý, vận hành, sản xuất thực phẩm: Phụ trách, tham gia quản lý kỹ thuật, chất lượng trong dây chuyền công nghệ sản xuất thực phẩm; tổ chức điều hành sản xuất và kinh doanh thực phẩm.

- PO5 - Có kỹ năng suy nghĩ phản biện, ra quyết định, giao tiếp quốc tế, làm việc nhóm: Có kỹ năng phân tích, đưa ra quyết định, giải pháp cho vấn đề, có những kỹ năng làm việc nhóm, làm việc trong môi trường quốc tế, đa văn hóa.

- PO6 - Có sức khỏe tốt, trách nhiệm cao với cộng đồng và nghề nghiệp: Có đạo đức nghề nghiệp, hiểu biết về luật pháp và các quy định quốc tế về an toàn thực phẩm, có sức khỏe tốt.

4. Chuẩn đầu ra của chương trình đào tạo (Program Learning Outcomes –PLOs)

Bảng 2. Chuẩn đầu ra của chương trình đào tạo

Thang đo*	Nội dung chuẩn đầu ra
PLO1	Nhận biết, lập công thức và giải quyết các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học
1.1	Có kiến thức về các nguyên lý kỹ thuật, khoa học và toán học
1.2	Có nhận thức và xác định được các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học
1.3	Áp dụng các phương pháp toán học, khoa học và kỹ thuật hợp lý vào việc giải quyết vấn đề
1.4	Đánh giá hiệu quả giải pháp và đề xuất cải tiến (nếu cần)

Thang đo*	Nội dung chuẩn đầu ra
PLO2	Ứng dụng thiết kế kỹ thuật để đưa ra những giải pháp cho những vấn đề cụ thể, có xem xét đến những yếu tố về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số
2.1	Có kiến thức về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số
2.2	Nhận thức và định nghĩa được các nhu cầu cụ thể về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và an toàn số cho một trường hợp nhất định
2.3	Phân tích được tầm quan trọng, thứ tự ưu tiên và những trở ngại của các nhu cầu cụ thể kể trên
2.4	Xây dựng được các ý tưởng và đặc tính cho thiết kế, thực hiện được sản phẩm mẫu hay quy trình mẫu đáp ứng được các nhu cầu kể trên, sáng tạo nội dung số cho sản phẩm
2.5	Đánh giá được hiệu quả của sản phẩm/quy trình thiết kế và đề xuất cải tiến (nếu cần)
PLO3	Giao tiếp hiệu quả với đa dạng đối tượng người nghe trong môi trường vật lý và môi trường số
3.1	Có khả năng viết báo cáo và thuyết trình sử dụng ngôn ngữ và thuật ngữ hợp lý rõ ràng
3.2	Có khả năng viết báo cáo và thuyết trình sử dụng hình ảnh và âm thanh hỗ trợ hiệu quả
3.3	Có khả năng viết báo cáo và thuyết trình cung cấp kiến thức kỹ thuật chuyên sâu cho từng đối tượng độc giả/thính giả
PLO4	Nhận thức về trách nhiệm chuyên môn và đạo đức trong các tình huống kỹ thuật để đưa ra những thay đổi đúng đắn, hiểu được tác động của những giải pháp kỹ thuật trong bối cảnh xã hội, kinh tế toàn cầu
4.1	Nhận thức về trách nhiệm chuyên môn và đạo đức
4.2	Mô tả được trách nhiệm chuyên môn và đạo đức được áp dụng như thế nào vào một trường hợp cụ thể
4.3	Thực hành trách nhiệm chuyên môn và đạo đức trong một trường hợp cụ thể
4.4	Phân tích được trách nhiệm chuyên môn và đạo đức khi đánh giá các giải pháp kỹ thuật có xem xét đến sự ảnh hưởng của khía cạnh toàn cầu, kinh tế, môi trường và xã hội
PLO5	Hoạt động hiệu quả trong đội nhóm trong môi trường vật lý và môi trường số, xây dựng môi trường hoạt động nhóm hợp tác và thống nhất, thiết lập được mục tiêu, lên kế hoạch nhiệm vụ và đáp ứng được mục tiêu đã đề ra
5.1	Tham gia nhóm
5.2	Tổ chức và hoàn thành công việc trong nhóm
5.3	Xây dựng môi trường làm việc nhóm hợp tác
5.4	Tạo dựng nhóm làm việc gắn kết

Thang đo*	Nội dung chuẩn đầu ra
PLO6	Thiết kế và làm các thí nghiệm, phân tích và giải thích số liệu, và lập báo cáo các kết quả đạt được
6.1	Chuẩn bị hoặc thiết kế được kế hoạch thí nghiệm để trả lời cho một câu hỏi nghiên cứu, có xem xét đến cơ sở vật chất và nguồn lực hiện có
6.2	Thực hiện thí nghiệm để thu được dữ liệu với các thông số hợp lý
6.3	Phân tích số liệu với các công cụ và phương pháp hợp lý
6.4	Diễn giải và đánh giá được số liệu, rút ra được kết luận và đề xuất cải tiến (nếu cần)
PLO7	Có khả năng tự học và áp dụng những kiến thức, kỹ năng, công cụ mới khi cần, thông qua việc sử dụng những chiến lược học tập thích hợp
7.1	Có khả năng khai thác dữ liệu và thông tin từ nhiều nguồn để mô tả và đánh giá một vấn đề
7.2	Có khả năng tiếp cận và sử dụng các công cụ mới, kỹ thuật và kỹ năng mới để giải quyết một vấn đề
* Thang đo tham khảo thang Bloom	

Bảng 3. Trình độ năng lực ứng với chuẩn đầu ra của chương trình đào tạo

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
Kiến thức		
PLO1	Nhận biết, lập công thức và giải quyết các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học	Ghi nhớ (Remembering), Hiểu (Understanding), Áp dụng (Applying), Đánh giá (Evaluating), Sáng tạo (Creating)
1.1	Có kiến thức về các nguyên lý kỹ thuật, khoa học và toán học	Ghi nhớ (Remembering), Hiểu (Understanding)
1.2	Có nhận thức và xác định được các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học	Ghi nhớ (Remembering), Áp dụng (Applying)
1.3	Áp dụng các phương pháp toán học, khoa học và kỹ thuật hợp lý vào việc giải quyết vấn đề	Hiểu (Understanding), Áp dụng (Applying)
1.4	Đánh giá hiệu quả giải pháp và đề xuất cải tiến (nếu cần)	Đánh giá (Evaluating), Sáng tạo (Creating)
PLO2	Ứng dụng thiết kế kỹ thuật để đưa ra những giải pháp cho những vấn đề cụ thể, có xem xét đến những yếu tố về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số	Ghi nhớ (Remembering), Hiểu (Understanding), Áp dụng (Applying), Đánh giá (Evaluating), Sáng tạo (Creating)

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
2.1	Có kiến thức về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số	Ghi nhớ (Remembering)
2.2	Nhận thức và định nghĩa được các nhu cầu cụ thể về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và an toàn số cho một trường hợp nhất định	Hiểu (Understanding)
2.3	Phân tích được tầm quan trọng, thứ tự ưu tiên và những trở ngại của các nhu cầu cụ thể kể trên	Áp dụng (Applying), Đánh giá (Evaluating)
2.4	Xây dựng được các ý tưởng và đặc tính cho thiết kế, thực hiện được sản phẩm mẫu hay quy trình mẫu đáp ứng được các nhu cầu kể trên, sáng tạo nội dung số cho sản phẩm	Áp dụng (Applying), Đánh giá (Evaluating)
2.5	Đánh giá được hiệu quả của sản phẩm/quy trình thiết kế và đề xuất cải tiến (nếu cần)	Đánh giá (Evaluating), Sáng tạo (Creating)
PLO4	Nhận thức về trách nhiệm chuyên môn và đạo đức trong các tình huống kỹ thuật để đưa ra những thay đổi đúng đắn, hiểu được tác động của những giải pháp kỹ thuật trong bối cảnh xã hội, kinh tế toàn cầu	Ghi nhớ (Remembering), Hiểu (Understanding), Áp dụng (Applying), Đánh giá (Evaluating)
4.1	Nhận thức về trách nhiệm chuyên môn và đạo đức	Ghi nhớ (Remembering), Hiểu (Understanding)
4.2	Mô tả được trách nhiệm chuyên môn và đạo đức được áp dụng như thế nào vào một trường hợp cụ thể	Hiểu (Understanding)
4.3	Thực hành trách nhiệm chuyên môn và đạo đức trong một trường hợp cụ thể	Áp dụng (Applying), Đánh giá (Evaluating)
4.4	Phân tích được trách nhiệm chuyên môn và đạo đức khi đánh giá các giải pháp kỹ thuật có xem xét đến sự ảnh hưởng của khía cạnh toàn cầu, kinh tế, môi trường và xã hội.	Đánh giá (Evaluating)
PLO5	Hoạt động hiệu quả trong đội nhóm trong môi trường vật lý và môi trường số, xây dựng môi trường hoạt động nhóm hợp tác và thống nhất, thiết lập được mục tiêu, lên kế hoạch nhiệm vụ và đáp ứng được mục tiêu đã đề ra	Hiểu (Understanding), Áp dụng (Applying), Đánh giá (Evaluating), Sáng tạo (Creating)

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
5.1	Tham gia nhóm	Hiểu (Understanding), Áp dụng (Applying)
5.2	Tổ chức và hoàn thành công việc trong nhóm	Áp dụng (Applying), Đánh giá (Evaluating), Sáng tạo (Creating)
5.3	Xây dựng môi trường làm việc nhóm hợp tác	Áp dụng (Applying), Đánh giá (Evaluating), Sáng tạo (Creating)
5.4	Tạo dựng nhóm làm việc gắn kết	Áp dụng (Applying), Đánh giá (Evaluating), Sáng tạo (Creating)
Kỹ năng		
PLO1	Nhận biết, lập công thức và giải quyết các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
1.1	Có kiến thức về các nguyên lý kỹ thuật, khoa học và toán học	Quan sát (Observation). Bắt chước (Imitation)
1.2	Có nhận thức và xác định được các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học	Bắt chước (Imitation), Thực hành (Manipulation)
1.3	Áp dụng các phương pháp toán học, khoa học và kỹ thuật hợp lý vào việc giải quyết vấn đề	Thực hành (Manipulation), Chính xác (Precision)
1.4	Đánh giá hiệu quả giải pháp và đề xuất cải tiến (nếu cần)	Tự nhiên hóa (Naturalization)
PLO2	Ứng dụng thiết kế kỹ thuật để đưa ra những giải pháp cho những vấn đề cụ thể, có xem xét đến những yếu tố về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
2.1	Có kiến thức về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số	Quan sát (Observation), Bắt chước (Imitation)
2.2	Nhận thức và định nghĩa được các nhu cầu cụ thể về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và an toàn số cho một trường hợp nhất định	Quan sát (Observation), Bắt chước (Imitation)
2.3	Phân tích được tầm quan trọng, thứ tự ưu tiên và những trở ngại của các nhu cầu cụ thể kể trên	Thực hành (Manipulation), Chính xác (Precision)

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
2.4	Xây dựng được các ý tưởng và đặc tính cho thiết kế, thực hiện được sản phẩm mẫu hay quy trình mẫu đáp ứng được các nhu cầu kể trên, sáng tạo nội dung số cho sản phẩm	Thực hành (Manipulation), Chính xác (Precision)
2.5	Đánh giá được hiệu quả của sản phẩm/quy trình thiết kế và đề xuất cải tiến (nếu cần)	Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
PLO3	Giao tiếp hiệu quả với đa dạng đối tượng người nghe trong môi trường vật lý và môi trường số	Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
3.1	Có khả năng viết báo cáo và thuyết trình sử dụng ngôn ngữ và thuật ngữ hợp lý rõ ràng	Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
3.2	Có khả năng viết báo cáo và thuyết trình sử dụng hình ảnh và âm thanh hỗ trợ hiệu quả	Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
3.3	Có khả năng viết báo cáo và thuyết trình cung cấp kiến thức kỹ thuật chuyên sâu cho từng đối tượng độc giả/thính giả	Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
PLO4	Nhận thức về trách nhiệm chuyên môn và đạo đức trong các tình huống kỹ thuật để đưa ra những thay đổi đúng đắn, hiểu được tác động của những giải pháp kỹ thuật trong bối cảnh xã hội, kinh tế toàn cầu	Quan sát (Observation), Thực hành (Manipulation), Chính xác (Precision)
4.1	Nhận thức về trách nhiệm chuyên môn và đạo đức	Quan sát (Observation)
4.2	Mô tả được trách nhiệm chuyên môn và đạo đức được áp dụng như thế nào vào một trường hợp cụ thể	Thực hành (Manipulation)
4.3	Thực hành trách nhiệm chuyên môn và đạo đức trong một trường hợp cụ thể	Thực hành (Manipulation)
4.4	Phân tích được trách nhiệm chuyên môn và đạo đức khi đánh giá các giải pháp kỹ thuật có xem xét đến sự ảnh hưởng của khía cạnh toàn cầu, kinh tế, môi trường và xã hội	Chính xác (Precision)
PLO5	Hoạt động hiệu quả trong đội nhóm trong môi trường vật lý và môi trường số, xây dựng môi trường hoạt động nhóm hợp tác và thống nhất, thiết lập được mục tiêu, lên kế hoạch nhiệm vụ và đáp ứng được mục tiêu đã đề ra	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
5.1	Tham gia nhóm	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation)
5.2	Tổ chức và hoàn thành công việc trong nhóm	Thực hành (Manipulation), Tự nhiên hóa (Naturalization)
5.3	Xây dựng môi trường làm việc nhóm hợp tác	Thực hành (Manipulation), Tự nhiên hóa (Naturalization)
5.4	Tạo dựng nhóm làm việc gắn kết	Thực hành (Manipulation), Tự nhiên hóa (Naturalization)
PLO6	Thiết kế và làm các thí nghiệm, phân tích và giải thích số liệu, và lập báo cáo các kết quả đạt được	Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
6.1	Chuẩn bị hoặc thiết kế được kế hoạch thí nghiệm để trả lời cho một câu hỏi nghiên cứu, có xem xét đến cơ sở vật chất và nguồn lực hiện có	Thực hành (Manipulation), Chính xác (Precision)
6.2	Thực hiện thí nghiệm để thu được dữ liệu với các thông số hợp lý	Thực hành (Manipulation), Chính xác (Precision)
6.3	Phân tích số liệu với các công cụ và phương pháp hợp lý	Chính xác (Precision), Tự nhiên hóa (Naturalization)
6.4	Diễn giải và đánh giá được số liệu, rút ra được kết luận và đề xuất cải tiến (nếu cần)	Chính xác (Precision), Tự nhiên hóa (Naturalization)
PLO7	Có khả năng tự học và áp dụng những kiến thức, kỹ năng, công cụ mới khi cần, thông qua việc sử dụng những chiến lược học tập thích hợp	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
7.1	Có khả năng khai thác dữ liệu và thông tin từ nhiều nguồn để mô tả và đánh giá một vấn đề	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation), Chính xác (Precision)
7.2	Có khả năng tiếp cận và sử dụng các công cụ mới, kỹ thuật và kỹ năng mới để giải quyết một vấn đề	Quan sát (Observation), Bắt chước (Imitation), Thực hành (Manipulation), Chính xác (Precision), Tự nhiên hóa (Naturalization)
Mức tự chủ và trách nhiệm		
PLO1	Nhận biết, lập công thức và giải quyết các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
1.1	Có kiến thức về các nguyên lý kỹ thuật, khoa học và toán học	Tiếp nhận (Receiving), Phản hồi (Responding)
1.2	Có nhận thức và xác định được các vấn đề kỹ thuật thông qua việc áp dụng các nguyên lý kỹ thuật, khoa học và toán học	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing)

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
1.3	Áp dụng các phương pháp toán học, khoa học và kỹ thuật hợp lý vào việc giải quyết vấn đề	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization)
1.4	Đánh giá hiệu quả giải pháp và đề xuất cải tiến (nếu cần)	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
PLO2	Ứng dụng thiết kế kỹ thuật để đưa ra những giải pháp cho những vấn đề cụ thể, có xem xét đến những yếu tố về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
2.1	Có kiến thức về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và môi trường số	Tiếp nhận (Receiving), Phản hồi (Responding)
2.2	Nhận thức và định nghĩa được các nhu cầu cụ thể về sức khỏe cộng đồng, an ninh và phúc lợi xã hội, những yếu tố toàn cầu, văn hóa, xã hội, môi trường, kinh tế và an toàn số cho một trường hợp nhất định	Tiếp nhận (Receiving), Phản hồi (Responding)
2.3	Phân tích được tầm quan trọng, thứ tự ưu tiên và những trở ngại của các nhu cầu cụ thể kể trên	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing)
2.4	Xây dựng được các ý tưởng và đặc tính cho thiết kế, thực hiện được sản phẩm mẫu hay quy trình mẫu đáp ứng được các nhu cầu kể trên, sáng tạo nội dung số cho sản phẩm	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
2.5	Đánh giá được hiệu quả của sản phẩm/quy trình thiết kế và đề xuất cải tiến (nếu cần)	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
PLO6	Thiết kế và làm các thí nghiệm, phân tích và giải thích số liệu, và lập báo cáo các kết quả đạt được	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
6.1	Chuẩn bị hoặc thiết kế được kế hoạch thí nghiệm để trả lời cho một câu hỏi nghiên cứu, có xem xét đến cơ sở vật chất và nguồn lực hiện có	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing)
6.2	Thực hiện thí nghiệm để thu được dữ liệu với các thông số hợp lý	Tiếp nhận (Receiving), Phản hồi (Responding), Đánh giá (Valuing)
6.3	Phân tích số liệu với các công cụ và phương pháp hợp lý	Đánh giá (Valuing), Tổ chức (Organization)

Chuẩn đầu ra (CDR)	Nội dung chuẩn đầu ra	Trình độ năng lực*
6.4	Diễn giải và đánh giá được số liệu, rút ra được kết luận và đề xuất cải tiến (nếu cần)	Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
PLO7	Có khả năng tự học và áp dụng những kiến thức, kỹ năng, công cụ mới khi cần, thông qua việc sử dụng những chiến lược học tập thích hợp	Đánh giá (Valuing), Tổ chức (Organization), Nội hóa (Internalization)
7.1	Có khả năng khai thác dữ liệu và thông tin từ nhiều nguồn để mô tả và đánh giá một vấn đề	Đánh giá (Valuing), Tổ chức (Organization)
7.2	Có khả năng tiếp cận và sử dụng các công cụ mới, kỹ thuật và kỹ năng mới để giải quyết một vấn đề	Tổ chức (Organization), Nội hóa (Internalization).

*Trình độ năng lực theo thang Bloom

Bảng 4. Đối chiếu CDR của CTĐT ngành CNTP và CDR theo Khung trình độ Quốc gia Việt Nam - Bậc 7 (theo QĐ số 1982/QĐ-TTg ngày 18 tháng 10 năm 2016 của Thủ tướng Chính phủ)

	Khung trình độ Quốc gia Việt Nam (bậc 7)	CDR
Kiến thức		
K1	- Kiến thức thực tế và lý thuyết sâu, rộng, tiên tiến, nắm vững các nguyên lý và học thuyết cơ bản trong lĩnh vực nghiên cứu thuộc chuyên ngành đào tạo.	PLO1
K2	- Kiến thức liên ngành có liên quan.	PLO2
K3	- Kiến thức chung về quản trị và quản lý.	PLO4, PLO5
Kỹ năng		
S1	- Kỹ năng phân tích, tổng hợp, đánh giá dữ liệu và thông tin để đưa ra giải pháp xử lý các vấn đề một cách khoa học.	PLO1, PLO2, PLO4, PLO6
S2	- Kỹ năng nghiên cứu phát triển và sử dụng các công nghệ một cách sáng tạo trong lĩnh vực học thuật và nghề nghiệp.	PLO7
S3	- Kỹ năng tổ chức, quản trị và quản lý các hoạt động nghề nghiệp tiên tiến.	PLO5
S4	- Có kỹ năng truyền đạt tri thức dựa trên nghiên cứu, thảo luận các vấn đề chuyên môn và khoa học với người cùng ngành và với những người khác.	PLO3
S5	- Có năng lực ngoại ngữ bậc 4/6 Khung năng lực ngoại ngữ của Việt Nam.	PLO3

	Khung trình độ Quốc gia Việt Nam (bậc 7)	CDR
Mức độ tự chủ và trách nhiệm		
A1	- Nghiên cứu, đưa ra những sáng kiến quan trọng.	PLO2, PLO7
A2	- Đưa ra những kết luận mang tính chuyên gia trong lĩnh vực chuyên môn.	PLO6
A3	- Quản lý, đánh giá và cải tiến các hoạt động chuyên môn.	PLO1, PLO2, PLO6
A4	- Thích nghi, tự định hướng và hướng dẫn người khác.	PLO7

5. Ma trận giữa mục tiêu đào tạo và chuẩn đầu ra

Bảng 5. Mối quan hệ giữa CDR của CTĐT và mục tiêu đào tạo

	PLOs⁽¹⁾	POs⁽²⁾					
		PO1	PO2	PO3	PO4	PO5	PO6
Kiến thức	PLO1	x	x	x	x		
	PLO2	x	x	x	x		
	PLO4						x
	PLO5					x	
Kỹ năng	PLO1	x	x	x	x		
	PLO2	x	x	x	x		
	PLO3					x	
	PLO4						x
	PLO5					x	
	PLO6	x	x	x	x		
	PLO7	x	x	x	x	x	x
Tự chủ và trách nhiệm	PLO1	x	x	x	x		
	PLO2	x	x	x	x		
	PLO6	x	x	x	x		
	PLO7	x	x	x	x	x	x

6. Quy trình đào tạo, điều kiện tốt nghiệp

Căn cứ Quyết định số 1342/QĐ-ĐHQG ngày 30 tháng 9 năm 2022 của Giám đốc Đại học Quốc gia Thành phố Hồ Chí Minh về việc ban hành Quy chế đào tạo trình độ đại học.

Căn cứ Quyết định số 719/QĐ-ĐHQT ngày 06 tháng 12 năm 2021 của Hiệu trưởng trường Đại học Quốc tế về việc ban hành Quy chế đào tạo trình độ đại học theo hệ thống tín chỉ tại trường Đại học Quốc tế.

7. Thang điểm (theo thang điểm chính thức của trường)

Trường quy định thang điểm đánh giá kết quả học tập của người học (Quy chế đào tạo trình độ đại học theo hệ thống tín chỉ tại trường Đại học Quốc tế)

Bảng 6: Thang điểm

Xếp loại	Thang điểm 100	Điểm chữ	Thang điểm 4
Xuất sắc	Từ 90 đến 100	A+	4,0
Giỏi	Từ 80 đến cận 90	A	3,5
Khá	Từ 70 đến cận 80	B+	3,0
Trung bình khá	Từ 60 đến cận 70	B	2,5
Trung bình	Từ 50 đến cận 60	C	2,0
Yếu	Từ 40 đến cận 50	D+	1,5
Kém	Từ 30 đến cận 40	D	1,0
	Dưới 30	F	0,0

8. Khối lượng kiến thức toàn khóa

Tổng số tín chỉ: **150 tín chỉ**, trong đó phân bổ kiến thức như Bảng 7 (không bao gồm Giáo dục thể chất và Giáo dục quốc phòng):

Bảng 7. Cấu trúc chương trình đào tạo

TT	Các khối kiến thức ⁽³⁾	Khối lượng			
		Số tín chỉ			Tỷ lệ % (Tổng khối kiến thức/ Tổng số tín chỉ)
		Tổng	Lý thuyết	Thực hành	
I	Khối kiến thức giáo dục đại cương	40	39	1	26.67
	- Bắt buộc: 37 tín chỉ	37	36	1	24.67
	- Tự chọn: 3 tín chỉ	3	3	0	2
II	Khối kiến thức cơ sở ngành	20	19	1	13.33
	- Bắt buộc: 20 tín chỉ	20	19	1	13.33
	- Tự chọn: 0 tín chỉ	0	0	0	0.00
III	Kiến thức chuyên ngành	69	57	12	46
	- Bắt buộc: 57 tín chỉ	57	49	8	38
	- Tự chọn: 12 tín chỉ	12	8	4	8
IV	Kiến thức bổ trợ	3	3	0	2
	- Bắt buộc: 0 tín chỉ	0	0	0	0.00
	- Tự chọn: 3 tín chỉ	3	3	0	2.00

TT	Các khối kiến thức ⁽³⁾	Khối lượng			
		Số tín chỉ			Tỷ lệ % (Tổng khối kiến thức/ Tổng số tín chỉ)
		Tổng	Lý thuyết	Thực hành	
V	Thực tập, khóa luận/luận văn tốt nghiệp	18	0	18	12.00
	Tổng cộng	150	118	32	100.00

9. Nội dung chương trình đào tạo

Bảng 8: Khung CTĐT chung của nhóm ngành Khoa học Sự sống và Hóa học

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ		
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm
I	MA001IU	Calculus 1	Toán cao cấp 1	Bắt buộc	4	4	0
	PH013IU	Physics 1	Vật lý 1	Bắt buộc	2	2	0
	CH011IU	Chemistry for Engineers	Hóa đại cương	Bắt buộc	3	3	0
	PE015IU	Philosophy of Marxism and Leninism	Triết học Mac Lenin	Bắt buộc	3	3	0
	PE016IU	Political economics of Marxism and Leninism	Kinh tế chính trị Mác Lênin	Bắt buộc	2	2	0
	PE017IU	Scientific socialism	Chủ nghĩa xã hội khoa học	Bắt buộc	2	2	0
	EN007IU	Writing AE1	Tiếng Anh chuyên ngành 1	Bắt buộc	2	2	0
	EN008IU	Listening AE1	Tiếng Anh chuyên ngành 1	Bắt buộc	2	2	0
	PT001IU	Physical Training 1	Giáo dục thể chất 1	Bắt buộc	3	0	3

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ		
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm
II	PE018IU	History of Vietnamese Communist Party	Lịch sử Đảng Cộng sản Việt Nam	Bắt buộc	2	2	0
	PE019IU	Ho Chi Minh's Thoughts	Tư tưởng Hồ Chí Minh	Bắt buộc	2	2	0
	MA040IU	Applied Statistics	Thống kê ứng dụng	Bắt buộc	2	2	0
	MA041IU	Applied Statistics Lab	Thực hành Thống kê ứng dụng	Bắt buộc	1	0	1
	EN011IU	Writing AE2	Tiếng Anh chuyên ngành 2	Bắt buộc	2	2	0
	EN012IU	Speaking AE2	Tiếng Anh chuyên ngành 2	Bắt buộc	2	2	0
	PE021IU	General Law	Pháp luật đại cương	Bắt buộc	3	3	0
	PT002IU	Physical Training 2	Giáo dục thể chất 2	Bắt buộc	3	0	3
Tổng					34	33	1

Bảng 9. Các môn học thuộc CTĐT

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
I	Kiến thức giáo dục đại cương				47	45	2	
	Lý luận chính trị			Bắt buộc	11	11	0	
1	PE015IU	Triết học Mác-Lênin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
2	PE016IU	Kinh tế chính trị Mác-Lênin	Political economics of Marxism and Leninism	Bắt buộc	2	2	0	
3	PE017IU	Chủ nghĩa xã hội khoa học	Scientific socialism	Bắt buộc	2	2	0	
4	PE018IU	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party	Bắt buộc	2	2	0	
5	PE019IU	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts	Bắt buộc	2	2	0	
	Khoa học xã hội - Nhân văn - Nghệ thuật				3	3	0	
6	PE020IU	Đạo đức và kỹ năng nghề nghiệp	Engineering Ethics and Professional Skills	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
7	PE008IU	Tư duy phân tích	Critical Thinking	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
8	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
	Ngoại ngữ			Bắt buộc	8	8	0	

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
9	EN007IU	Tiếng Anh chuyên ngành 1	Writing AE1	Bắt buộc	2	2	0	
10	EN008IU	Tiếng Anh chuyên ngành 1	Listening AE1	Bắt buộc	2	2	0	
11	EN011IU	Tiếng Anh chuyên ngành 2	Writing AE2	Bắt buộc	2	2	0	
12	EN012IU	Tiếng Anh chuyên ngành 2	Speaking AE2	Bắt buộc	2	2	0	
	Giáo dục Thể chất			Bắt buộc	0	0	0	
13	PT001IU	Thể dục 1	Physical Training 1	Bắt buộc	3	3	0	
14	PT002IU	Thể dục 2	Physical Training 2	Bắt buộc	3	3	0	
	Toán - Tin học - Khoa học tự nhiên - Công nghệ - Môi trường				15	14	1	
15	MA001IU	Toán cao cấp 1	Calculus 1	Bắt buộc	4	4	0	
16	PH013IU	Vật lý 1	Physics 1	Bắt buộc	2	2	0	
17	MA019IU	Toán cao cấp 2	Calculus 2	Bắt buộc	4	4	0	
18	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	
19	MA040IU	Thống kê ứng dụng	Applied Statistics	Bắt buộc	2	2	0	
20	MA041IU	Thực hành Thống kê ứng dụng	Applied Statistics Lab	Bắt buộc	1	0	1	302
21	PE014IU	Khoa học môi trường	Environmental Science	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
								thiếu 6 tín chỉ
22	IT135IU	Nhập môn Khoa học dữ liệu	Introduction to Data Science	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
	Kinh tế - Quản lý				3	3	0	
23	IS026IU	Quản lý dự án	Project Management	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
24	IS062IU	Quản lý hậu cần & chuỗi cung ứng	E-Logistics in Supply chain Management	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
25	BA003IU	Nguyên lý Marketing	Principles of Marketing	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
26	IT120IU	Khởi nghiệp	Entrepreneurship	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 tín chỉ
II	Kiến thức cơ sở ngành			Bắt buộc	20	19	1	

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
27	CH009IU	Hóa hữu cơ	Organic Chemistry	Bắt buộc	3	3	0	
28	CH011IU	Hóa đại cương	Chemistry for Engineers	Bắt buộc	3	3	0	
29	CH012IU	Thực hành Hóa đại cương	Chemistry Laboratory	Bắt buộc	1	0	1	LA1.501
30	BT311IU	Sinh học đại cương	Biology	Bắt buộc	3	3	0	
31	BTFT201IU	Nhập môn Khoa học và Công nghệ Thực phẩm	Introduction to Food Science and Technology	Bắt buộc	3	3	0	
32	BTFT203IU	Các nguyên lý Kỹ thuật Thực phẩm	Food Engineering Principles	Bắt buộc	4	4	0	
33	BTFT156IU	Hóa học và hóa sinh thực phẩm	Food Chemistry and Biochemistry	Bắt buộc	3	3	0	
III	Kiến thức chuyên ngành				69	57	12	
34	BTFT157IU	Phát triển bền vững thực phẩm	Food Sustainability	Bắt buộc	2	2	0	
35	BTFT234IU	Vi sinh thực phẩm	Food Microbiology	Bắt buộc	3	3	0	
36	BTFT254IU	Thực hành Vi sinh thực phẩm	Practice in Food Microbiology	Bắt buộc	1	0	1	LA1.602
37	BTFT205IU	Dinh dưỡng và Thực phẩm chức năng	Nutrition and Functional Foods	Bắt buộc	3	3	0	
38	BTFT305IU	Hệ thống Đảm bảo Chất lượng Thực phẩm	Food Quality Assurance System	Bắt buộc	3	3	0	

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
39	BTFT331IU	Quá trình và thiết bị Thực phẩm 1	Food Unit Operations 1	Bắt buộc	3	3	0	
40	BTFT351IU	Thực hành Quá trình và thiết bị Thực phẩm 1	Practice in Food Unit Operations 1	Bắt buộc	1	0	1	LA1.102
41	BTFT332IU	Phân tích Thực phẩm	Food Analysis	Bắt buộc	3	3	0	
42	BTFT352IU	Thực hành Phân tích Thực phẩm	Practice in Food Analysis	Bắt buộc	1	0	1	LA1.102
43	BTFT236IU	Enzyme và Lên men Thực phẩm	Enzyme and Food Fermentation	Bắt buộc	3	3	0	
44	BTFT256IU	Thực hành Enzyme và Lên men Thực phẩm	Practice in Enzyme and Food Fermentation	Bắt buộc	1	0	1	LA1.602
45	BTFT334IU	Quá trình và thiết bị Thực phẩm 2	Food Unit Operations 2	Bắt buộc	3	3	0	
46	BTFT354IU	Thực hành Quá trình và thiết bị Thực phẩm 2	Practice in Food Unit Operations 2	Bắt buộc	1	0	1	LA1.102
47	BTFT412IU	Chế biến thực phẩm	Food Processing	Bắt buộc	2	2	0	
48	BTFT437IU	Phân tích cảm quan Thực phẩm	Food Sensory Analysis	Bắt buộc	2	2	0	
49	BTFT457IU	Thực hành Phân tích cảm quan Thực phẩm	Practice in Food Sensory Analysis	Bắt buộc	1	0	1	LA1.601
50	BTFT411IU	Công nghệ sau thu hoạch	Post – harvest Technologies	Bắt buộc	3	3	0	
51	BTFT355IU	Thiết kế nhà máy thực phẩm	Food Plant Design	Bắt buộc	2	2	0	

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
52	BTFT312IU	Luật thực phẩm và tiêu chuẩn thực phẩm	Food Laws and Standards	Bắt buộc	2	2	0	
53	BTFT306IU	Bao bì và Phụ gia Thực phẩm	Food Packaging and Food Additives	Bắt buộc	3	3	0	
54	BTFT316IU	Viết báo cáo khoa học và thiết kế thí nghiệm trong khoa học thực phẩm	Scientific Writing and Design of experiments for food science	Bắt buộc	3	3	0	
55	BTFT337IU	Phân tích vi sinh Thực phẩm	Food Microbiology Analysis	Bắt buộc	2	2	0	
56	BTFT358IU	Thực hành Phân tích vi sinh Thực phẩm	Practice in Food Microbiology Analysis	Bắt buộc	1	0	1	LA1.602
57	BTFT303IU	Độc tố học và an toàn Thực phẩm	Toxicology and Food Safety	Bắt buộc	3	3	0	
58	BTFT438IU	Phát triển sản phẩm và tiếp thị	Food Product Development and Marketing	Bắt buộc	2	2	0	
59	BTFT458IU	Thực hành Phát triển sản phẩm và tiếp thị	Practice in Food Product Development and Marketing	Bắt buộc	1	0	1	LA1.601
60	BTFT461IU	Vật lý thực phẩm và hệ keo	Food Physics and Colloids	Bắt buộc	2	2	0	
Nhóm tự chọn 2 (Sinh viên chọn tối thiểu 12 tín chỉ trong các môn học sau):								
61	BTFT441IU	Công nghệ chế biến sữa và các sản phẩm sữa	Dairy Product Technology	Nhóm tự chọn 2	2	2	0	
	+ BTFT451IU	Thực hành Công nghệ chế biến sữa và các sản phẩm sữa	Practice in Dairy Product Technology	Nhóm tự chọn 2	1	0	1	LA1.601

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
62	BTFT442IU	Công nghệ đồ uống	Beverage Technology	Nhóm tự chọn 2	2	2	0	
	+ BTFT452IU	Thực hành Công nghệ đồ uống	Practice in Beverage Technology	Nhóm tự chọn 2	1	0	1	LA1.601
63	BTFT443IU	Công nghệ chế biến lương thực	Cereal Product Technology	Nhóm tự chọn 2	2	2	0	
	+ BTFT453IU	Thực hành Công nghệ chế biến lương thực	Practice in Cereal Product Technology	Nhóm tự chọn 2	1	0	1	LA1.601
64	BTFT445IU	Công nghệ chế biến các sản phẩm thịt	Meat Product Technology	Nhóm tự chọn 2	2	2	0	
	+ BTFT455IU	Thực hành Công nghệ chế biến các sản phẩm thịt	Practice in Meat Product Technology	Nhóm tự chọn 2	1	0	1	LA1.601
65	BTFT446IU	Công nghệ chế biến chè, cà phê, ca-ca	Technology of Coffee, Tea and Cacao	Nhóm tự chọn 2	2	2	0	
	+ BTFT456IU	Thực hành Công nghệ chế biến chè, cà phê, ca-ca	Practice in Technology of Coffee, Tea and Cacao	Nhóm tự chọn 2	1	0	1	LA1.601
66	BTFT447IU	Công nghệ chế biến bánh kẹo	Confectionery Product Technology	Nhóm tự chọn 2	2	2	0	
	+ BTFT448IU	Thực hành Công nghệ chế biến bánh kẹo	Practice in Confectionery Product Technology	Nhóm tự chọn 2	1	0	1	LA1.601
67	BTFT449IU	Công nghệ dầu và tinh dầu	Vegetable oil and essential oil technology	Nhóm tự chọn 2	2	2	0	
	+ BTFT459IU	Thực hành Công nghệ dầu và tinh dầu	Practice in Vegetable oil and essential oil technology	Nhóm tự chọn 2	1	0	1	LA1.601

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
VI	Kiến thức bổ trợ				3	3	0	
75	ENEE1001IU	Vẽ kỹ thuật	Engineering Drawing	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 TC
76	BT217IU	Di truyền phân tử	Molecular Genetics	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 TC
77	BT405IU	Hóa lý	Physical Chemistry	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 TC
78	CHE2041IU	Quá trình và thiết bị truyền khối	Mass Transfer Operations	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 TC
79	PH068IU	Phân tích kinh doanh với dữ liệu lớn	Business analytics with big data	Nhóm tự chọn 1	3	3	0	Nhóm tự chọn 1: tối thiểu 6 TC
80	PH059IU	Thực hành phân tích kinh doanh với dữ liệu lớn	Business analytics with big data laboratory	Nhóm tự chọn 1	1	0	1	Nhóm tự chọn 1: tối thiểu 6 TC

Stt	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Phòng TN (**)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
V	Thực tập, khóa luận/luận văn tốt nghiệp			Bắt buộc	18	0	18	
81	BTFT462IU	Thực tập ngành nghề	Internship	Bắt buộc	6	0	6	
82	BT179IU	Luận văn tốt nghiệp	Thesis	Bắt buộc	12	0	12	
	Tổng số (tín chỉ)				150	118	32	

Ghi chú:

- Nhóm tự chọn 1: yêu cầu đạt tối thiểu 6 tín chỉ
- Nhóm tự chọn 2: yêu cầu đạt tối thiểu 12 tín chỉ

10. Dự kiến kế hoạch giảng dạy (phân bổ các môn học theo từng học kỳ)

Bảng 10. Kế hoạch giảng dạy theo từng học kỳ (tham khảo)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			Môn học tiên quyết (TQ)/ Môn học học trước (HT)/Môn học song hành (SH)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
I (tổng tín chỉ: 20)	MA001IU	Calculus 1	Toán cao cấp 1	Bắt buộc	4	4	0	
	PH013IU	Physics 1	Vật lý 1	Bắt buộc	2	2	0	
	CH011IU	Chemistry for Engineers	Hóa đại cương	Bắt buộc	3	3	0	
	PE015IU	Philosophy of Marxism and Leninism	Triết học Mác Lênin	Bắt buộc	3	3	0	
	PE016IU	Political economics of Marxism and Leninism	Kinh tế chính trị Mác Lênin	Bắt buộc	2	2	0	HT: PE015IU, Philosophy of Marxism and Leninism
	PE017IU	Scientific socialism	Chủ nghĩa xã hội khoa học	Bắt buộc	2	2	0	HT: PE015IU, Philosophy of Marxism and Leninism
	EN007IU	Writing AE1	Tiếng Anh chuyên ngành 1	Bắt buộc	2	2	0	
	EN008IU	Listening AE1	Tiếng Anh chuyên ngành 1	Bắt buộc	2	2	0	

	PT001IU	Physical Training 1	Giáo dục thể chất 1	Bắt buộc	3	0	3	
Tổng cộng					20	20	0	
II (tổng tín chỉ: 20)	CH012IU	Chemistry Laboratory	Thực hành Hóa đại cương	Bắt buộc	1	0	1	
	PH014IU	Physics 2	Vật lý 2	Bắt buộc	2	2	0	
	PE018IU	History of Vietnamese Communist Party	Lịch sử Đảng Cộng sản Việt Nam	Bắt buộc	2	2	0	HT: PE015IU, Philosophy of Marxism and Leninism PE016IU, Political economics of Marxism and Leninism PE017IU, Scientific socialism
	PE019IU	Ho Chi Minh's Thoughts	Tư tưởng Hồ Chí Minh	Bắt buộc	2	2	0	HT: PE015IU, Philosophy of Marxism and Leninism PE016IU, Political economics of Marxism and Leninism PE017IU, Scientific socialism
	BTFT201IU	Introduction to Food Science and Technology	Nhập môn Khoa học và Công nghệ Thực phẩm	Bắt buộc	3	3	0	

	MA040IU	Applied Statistics	Thống kê ứng dụng	Bắt buộc	2	2	0	
	MA041IU	Applied Statistics Lab	Thực hành Thống kê ứng dụng	Bắt buộc	1	0	1	SH: MA040IU, Applied Statistics
	EN011IU	Writing AE2	Tiếng Anh chuyên ngành 2	Bắt buộc	2	2	0	
	EN012IU	Speaking AE2	Tiếng Anh chuyên ngành 2	Bắt buộc	2	2	0	
	PE021IU	General Law	Pháp luật đại cương	Bắt buộc	3	3	0	
	PT002IU	Physical Training 2	Giáo dục thể chất 2	Bắt buộc	3	0	3	
Tổng cộng					20	18	2	
III (tổng tín chỉ: 16)	CH009IU	Organic Chemistry	Hóa hữu cơ	Bắt buộc	3	3	0	
	MA019IU	Calculus 2	Toán cao cấp 2	Bắt buộc	4	4	0	
	BT311IU	Biology	Sinh học đại cương	Bắt buộc	3	3	0	
	BTFT203IU	Food Engineering Principles	Các nguyên lý Kỹ thuật Thực phẩm	Bắt buộc	4	4	0	HT: PH014IU, Physics 2
	BTFT157IU	Food Sustainability	Phát triển Bền vững Thực phẩm	Bắt buộc	2	2	0	
Tổng cộng					16	16	0	

IV (tổng tín chỉ: 16)		Elective 1 (1 course)	Nhóm tự chọn 1 (1 môn)	Tự chọn	3	3	0	
	BTFT234IU	Food Microbiology	Vi sinh Thực phẩm	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology
	BTFT254IU	Practice in Food Microbiology	Thực hành Vi sinh Thực phẩm	Bắt buộc	1	0	1	SH: BTFT234IU, Food Microbiology
	BTFT156IU	Food Chemistry and Biochemistry	Hóa học và Hóa sinh Thực phẩm	Bắt buộc	3	3	0	HT: CH009IU, Organic Chemistry
	BTFT205IU	Nutrition and Functional Foods	Dinh dưỡng và Thực phẩm chức năng	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology
	BTFT305IU	Food Quality Assurance System	Hệ thống Đảm bảo Chất lượng Thực phẩm	Bắt buộc	3	3	0	HT: MA040IU, Applied Statistics
Tổng cộng					16	15	1	
V (tổng tín chỉ: 15)	BTFT331IU	Food Unit Operations 1	Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology; BTFT203IU, Food Engineering Principles

	BTFT351IU	Practice in Food Unit Operations 1	Thực hành Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	1	0	1	SH: BTFT331IU, Food Unit Operations
	BTFT332IU	Food Analysis	Phân tích Thực phẩm	Bắt buộc	3	3	0	HT: CH009IU, Organic Chemistry; BTFT201IU, Introduction to Food Science and Technology
	BTFT352IU	Practice in Food Analysis	Thực hành Phân tích Thực phẩm	Bắt buộc	1	0	1	SH: BTFT332IU, Food Analysis
	BTFT236IU	Enzyme and Food Fermentation	Enzyme và Lên men Thực phẩm	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology, BTFT156IU, Food Chemistry and Biochemistry
	BTFT256IU	Practice in Enzyme and Food Fermentation	Thực hành Enzyme và Lên men Thực phẩm	Bắt buộc	1	0	1	SH: BTFT256IU, Enzyme and Food Fermentation
		Elective 1 (1 course)	Nhóm tự chọn 1 (1 môn)	Tự chọn	3	3	0	
Tổng cộng					15	12	3	
VI (tổng tín chỉ: 16)	BTFT334IU	Food Unit Operations 2	Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology;

								BTFT203IU, Food Engineering Principles
	BTFT354IU	Practice in Food Unit Operations 2	Thực hành Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	1	0	1	SH: BTFT334IU, Food Unit Operations 2
	BTFT412IU	Food Processing	Chế biến thực phẩm	Bắt buộc	2	2	0	HT: BTFT203IU, Food Engineering Principles
	BTFT437IU	Food Sensory Analysis	Phân tích Cảm quan Thực phẩm	Bắt buộc	2	2	0	HT: MA040IU, Applied Statistics
	BTFT457IU	Practice in Food Sensory Analysis	Thực hành Phân tích Cảm quan Thực phẩm	Bắt buộc	1	0	1	HT: MA041IU, Applied Statistics Lab; SH: BTFT437IU, Food Sensory Analysis
	BTFT411IU	Post – harvest Technologies	Công nghệ Sau thu hoạch	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology
	BTFT355IU	Food Plant Design	Thiết kế Nhà máy Thực phẩm	Bắt buộc	2	2	0	HT: BTFT305IU, Food Quality Assurance System
	BTFT312IU	Food Laws and Standards	Luật Thực phẩm và Tiêu chuẩn Thực phẩm	Bắt buộc	2	2	0	
Tổng cộng					16	14	2	

VII (tổng tín chỉ: 18)	BTFT306IU	Food Packaging and Food Additives	Bao bì và Phụ gia Thực phẩm	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology
		Elective 2 (2 courses)	Nhóm tự chọn 2 (2 môn)	Tự chọn	6	4	2	
	BTFT462IU	Internship	Thực tập ngành nghề	Bắt buộc	6	0	6	tích lũy tối thiểu 90 tín chỉ
	BTFT316IU	Scientific Writing and Design of Experiments for Food Science	Viết báo cáo Khoa học và Thiết kế Thí nghiệm trong Khoa học Thực phẩm	Bắt buộc	3	3	0	HT: MA040IU, Applied Statistics
Tổng cộng					18	10	8	
VIII (tổng tín chỉ: 17)	BTFT337IU	Food Microbiology Analysis	Phân tích Vi sinh Thực phẩm	Bắt buộc	2	2	0	HT: BTFT234IU, Food Microbiology
	BTFT358IU	Practice in Food Microbiology Analysis	Thực hành Phân tích Vi sinh Thực phẩm	Bắt buộc	1	0	1	HT: BTFT254IU Practice in Food Microbiology; SH: BTFT337IU, Food Microbiology Analysis
	BTFT303IU	Toxicology and Food Safety	Độc tố học và An toàn Thực phẩm	Bắt buộc	3	3	0	HT: BTFT201IU, Introduction to Food Science and Technology

	BTFT438IU	Food Product Development and Marketing	Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	2	2	0	HT: BTFT437IU, Food Sensory Analysis (HT), BTFT312IU, Food Laws and Standards
	BTFT458IU	Practice in Food Product Development and Marketing	Thực hành Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	1	0	1	HT: BTFT457IU, Practice in Food Sensory Analysis SH: BTFT438IU, Food Product Development and Marketing (SH)
	BTFT461IU	Food Physics and Colloids	Vật lý Thực phẩm và Hệ keo	Bắt buộc	2	2	0	HT: BTFT203IU, Food Engineering Principles
		Elective 2 (2 courses)	Nhóm tự chọn 2 (2 môn)	Tự chọn	6	4	2	
Tổng cộng					17	13	4	
IX (tổng tín chỉ: 12)	BT179IU	Thesis	Luận văn tốt nghiệp	Bắt buộc	12	0	12	Tích lũy tối thiểu 124 tín chỉ
Tổng cộng					12	0	12	
Tổng					150	118	32	

DANH SÁCH CÁC MÔN TỰ CHỌN TRONG NHÓM TỰ CHỌN 1

Môn tự chọn Nhóm 1 (tối thiểu 06 tín chỉ)								
STT	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học tiên quyết (TQ)/ Môn học học trước (HT)/ Môn học song hành (SH)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
1	BT217IU	Molecular Genetics	Di truyền Phân tử	Tự chọn	3	3	0	
2	BT405IU	Physical Chemistry	Hóa lý	Tự chọn	3	3	0	
3	CHE2041IU	Mass Transfer Operations	Quá trình và Thiết bị Truyền khối	Tự chọn	3	3	0	
4	ENEE1001IU	Engineering Drawing	Vẽ kỹ thuật	Tự chọn	3	3	0	
5	IS026IU	Project Management	Quản lý Dự án	Tự chọn	3	3	0	
6	IS062IU	E-Logistics in Supply chain Management	Quản lý hậu cần & Chuỗi cung ứng	Tự chọn	3	3	0	
7	BA003IU	Principles of Marketing	Nguyên lý Marketing	Tự chọn	3	3	0	
8	PE014IU	Environmental Science	Khoa học Môi trường	Tự chọn	3	3	0	
9	PE020IU	Engineering Ethics and Professional Skills	Đạo đức và Kỹ năng Nghề nghiệp	Tự chọn	3	3	0	
10	PE008IU	Critical thinking	Tư duy Phân tích	Tự chọn	3	3	0	
11	IT135IU	Introduction to Data Science	Nhập môn Phân tích Dữ liệu	Tự chọn	3	3	0	

Môn tự chọn Nhóm 1 (tối thiểu 06 tín chỉ)								
STT	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học tiên quyết (TQ)/ Môn học học trước (HT)/ Môn học song hành (SH)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
12	IT120IU	Entrepreneurship	Khởi nghiệp	Tự chọn	3	3	0	
13	PH068IU	Business analytics with big data	Phân tích kinh doanh với dữ liệu lớn	Tự chọn	3	3	0	
14	PH059IU	Business analytics with big data laboratory	Thực hành phân tích kinh doanh với dữ liệu lớn	Tự chọn	1	0	1	

DANH SÁCH CÁC MÔN TỰ CHỌN TRONG NHÓM TỰ CHỌN 2

Môn tự chọn chuyên ngành thuộc Nhóm tự chọn 2 (tối thiểu 12 tín chỉ) <i>(Sinh viên cần học đúng các môn lý thuyết + thực hành song hành trong cùng nhóm chuyên ngành)</i>								
STT	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học tiên quyết (TQ)/ Môn học học trước (HT)/ Môn học song hành (SH)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
1	BTFT441IU	Dairy Product Technology	Công nghệ Chế biến Sữa và Các sản phẩm sữa	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1
	+	Practice in Dairy Product Technology	Thực hành Công nghệ Chế biến Sữa và Các sản phẩm sữa	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT441IU, Dairy Product Technology
2	BTFT442IU	Beverage Technology	Công nghệ Đồ uống	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1
	+	Practice in Beverage Technology	Thực hành Công nghệ Đồ uống	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT442IU, Beverage Technology
3	BTFT443IU	Cereal Product Technology	Công nghệ Chế biến Lương thực	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1
	+	Practice in Cereal Product Technology	Thực hành Công nghệ Chế biến Lương thực	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT443IU, Cereal Product Technology

Môn tự chọn chuyên ngành thuộc Nhóm tự chọn 2 (tối thiểu 12 tín chỉ) (Sinh viên cần học đúng các môn lý thuyết + thực hành song hành trong cùng nhóm chuyên ngành)								
STT	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học tiên quyết (TQ)/ Môn học học trước (HT)/ Môn học song hành (SH)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
4	BTFT445IU	Meat Product Technology	Công nghệ Chế biến Các Sản phẩm thịt	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1
	+	Practice in Meat Product Technology	Thực hành Công nghệ Chế biến Các Sản phẩm thịt	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT445IU, Meat Product Technology
5	BTFT446IU	Technology of Coffee, Tea and Cacao	Công nghệ Chế biến Chè, Cà phê và Cacao	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1)
	+	Practice in Technology of Coffee, Tea and Cacao	Thực hành Công nghệ Chế biến Chè, Cà phê và Cacao	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT446IU, Technology of Coffee, Tea and Cacao
6	BTFT447IU	Confectionery Product Technology	Công nghệ chế biến bánh kẹo	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1
	+	Practice in Confectionery Product Technology	Thực hành Công nghệ chế biến bánh kẹo	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT447IU, Confectionery Product Technology (SH)

Môn tự chọn chuyên ngành thuộc Nhóm tự chọn 2 (tối thiểu 12 tín chỉ) (Sinh viên cần học đúng các môn lý thuyết + thực hành song hành trong cùng nhóm chuyên ngành)								
STT	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học tiên quyết (TQ)/ Môn học học trước (HT)/ Môn học song hành (SH)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
7	BTFT449IU	Vegetable oil and essential oil technology	Công nghệ Dầu và Tinh dầu	Tự chọn	2	2	0	HT: BTFT331IU, Food Unit Operations 1
	+ BTFT459IU	Practice in Vegetable oil and essential oil technology	Thực hành Công nghệ Dầu và Tinh dầu	Tự chọn	1	0	1	HT: BTFT351IU, Practice in Food Unit Operations 1 SH: BTFT449IU, Vegetable oil and essential oil technology

11. Ma trận các môn học và chuẩn đầu ra (kỹ năng)

Mức độ đóng góp của các môn học vào chuẩn đầu ra của CTĐT ngành Công nghệ Thực phẩm được trình bày như Bảng 11.

Bảng 11. Đóng góp của các môn học vào CĐR của CTĐT

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
1	MA001IU	Calculus 1 (Toán cao cấp 1)	3		1				
2	PH013IU	Physics 1 (Vật lý 1)	3	1	1				
3	BT311IU	Biology (Sinh học đại cương)	3	2	2			1	
4	CH011IU	Chemistry for Engineers (Hóa đại cương)	3					1	1
5	CH012IU	Chemistry Laboratory (Thực hành hóa đại cương)	3				3	4	
6, 7	EN007IU, EN008IU	Academic English 1 (Anh văn chuyên ngành 1)			1	3			
8	MA019IU	Calculus 2 (Toán cao cấp 2)	3		1				
9	PH014IU	Physics 2 (Vật lý 2)	3	1	1				
10	PE021IU	General Law (Pháp luật đại cương)		3	1	1			
11	CH009IU	Organic Chemistry (Hóa hữu cơ)	3						
12, 13	EN011IU, EN012IU	Academic English 2 (Anh văn chuyên ngành 2)			1	3			
14	PE015IU	Philosophy of Marxism and Leninism (Triết học Mác-Lenin)			1		2		
15	PE016IU	Political economics of Marxism and Leninism			1		2		

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
		(Kinh tế chính trị Mác-Lenin)							
16	PE017IU	Scientific socialism (Chủ nghĩa xã hội khoa học)			1		2		
17	PE018IU	History of Vietnamese Communist Party (Lịch sử Đảng Cộng sản Việt Nam)			1		2		
18	PE019IU	Ho Chi Minh's Thoughts (Tư tưởng Hồ Chí Minh)			1		2		
19	MA040IU	Applied Statistics (Thống kê ứng dụng)	3						1
20	MA041IU	Applied Statistics Lab (Thực hành Thống kê ứng dụng)				3		3	
21	BTFT201IU	Introduction to Food Science and Technology (Nhập môn Khoa học và Công nghệ Thực phẩm)	1		2		3		
22	BTFT203IU	Food Engineering Principles (Các nguyên lý Kỹ thuật Thực phẩm)	3		2				
23	BTFT156IU	Food Chemistry and Biochemistry (Hóa học và hóa sinh thực phẩm)	2	1	2				
24	BTFT461IU	Food Physics and Colloids (Vật lý thực phẩm và hệ keo)	3		3				1
25	BTFT234IU	Food Microbiology (Vi sinh thực phẩm)		4			3		

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
26	BTFT254IU	Practice in Food Microbiology (Thực hành vi sinh thực phẩm)	3				3	3	
27	BTFT205IU	Nutrition and Functional Foods (Dinh dưỡng và Thực phẩm chức năng)		4			3		
28	BTFT331IU	Food Unit Operations 1 (Quá trình và thiết bị Thực phẩm 1)	3		3		3		
29	BTFT351IU	Practice in Food Unit Operations 1 (Thực hành Quá trình và thiết bị Thực phẩm 1)	4				3	4	
30	BTFT157IU	Food Sustainability (Phát triển bền vững thực phẩm)		4		3			1
31	BTFT332IU	Food Analysis (Phân tích Thực phẩm)	3	4	3		3		
32	BTFT352IU	Practice in Food Analysis (Thực hành Phân tích Thực phẩm)	3				3	4	
33	BTFT236IU	Enzyme and Food Fermentation (Enzyme và Lên men Thực phẩm)	3		3		3		
34	BTFT256IU	Practice in Enzyme and Food Fermentation (Thực hành Enzyme và Lên men Thực phẩm)	3		2		3	3	
35	BTFT303IU	Toxicology and Food Safety (Độc tố học và An toàn Thực phẩm)	2	4			3		

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
36	BTFT306IU	Food Packaging and Food Additives (Bao bì và Phụ gia Thực phẩm)	3		3		3		
37	BTFT334IU	Food Unit Operations 2 (Quá trình và thiết bị Thực phẩm 2)	3		3		3		
38	BTFT354IU	Practice in Food Unit Operations 2 (Thực hành Quá trình và thiết bị Thực phẩm 2)	4				3	4	
39	BTFT305IU	Food Quality Assurance System (Các hệ thống đảm bảo chất lượng Thực phẩm)	4	4	3	2			
40	BTFT312IU	Food Laws and Standards (Luật thực phẩm và tiêu chuẩn thực phẩm)		3	2	2	3		
41	BTFT337IU	Food Microbiology Analysis (Phân tích vi sinh Thực phẩm)	3				3		
42	BTFT358IU	Practice in Food Microbiology Analysis (Thực hành Phân tích vi sinh Thực phẩm)	3				3	3	
43	BTFT355IU	Food Plant design (Thiết kế nhà máy thực phẩm)	3	4	3				2
44	BTFT412IU	Food Processing (Chế biến Thực phẩm)	1	4	3				1
45	BTFT437IU	Food Sensory Analysis (Phân tích cảm quan Thực phẩm)	3				3		

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
46	BTFT457IU	Practice in Food Sensory Analysis (Thực hành Phân tích cảm quan Thực phẩm)			3		4	4	2
47	BTFT438IU	Food Product Development and Marketing (Phát triển sản phẩm và tiếp thị)	4	5		4	4		1
48	BTFT458IU	Practice in Food Product Development and Marketing (Thực hành Phát triển sản phẩm và tiếp thị)	4	5	3	4			2
49	BTFT316IU	Scientific Writing and Design of experiments for food science (Viết khoa học và thiết kế thí nghiệm cho khoa học thực phẩm)	3	4	3	3		4	2
50	BTFT411IU	Post – harvest Technologies (Công nghệ sau thu hoạch)	2				3		1
51	BTFT462IU	Internship (Thực tập ngành nghề)			3	4	3		2
52	BT179IU	Thesis (Luận văn tốt nghiệp)		5	3	3		4	2
Các môn chuyên ngành tự chọn (nhóm tự chọn 2)									
53	BTFT441IU	Dairy Product Technology (Công nghệ chế biến sữa và các sản phẩm sữa)	4	4	3		4		
54	BTFT451IU	Practice in Dairy Product Technology (Thực hành Công nghệ chế biến)	4				4	4	

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
		sữa và các sản phẩm sữa)							
55	BTFT442IU	Beverage Technology (Công nghệ đồ uống)	4	4	3		4		
56	BTFT452IU	Practice in Beverage Technology (Thực hành Công nghệ đồ uống)	4				4	4	
57	BTFT443IU	Cereal Product Technology (Công nghệ chế biến lương thực)	4	4	3		4		
58	BTFT453IU	Practice in Cereal Product Technology (Thực hành Công nghệ chế biến lương thực)	4				4	4	
59	BTFT445IU	Meat Product Technology (Công nghệ chế biến các sản phẩm thịt)	4	4	3		4		
60	BTFT455IU	Practice in Meat Product Technology (Thực hành Công nghệ chế biến các sản phẩm thịt)	4				4	4	
61	BTFT446IU	Technology of Coffee, Tea and Cacao (Công nghệ chế biến chè, cà phê, ca-cao)	4	4	3		4		
62	BTFT456IU	Practice in Technology of Coffee, Tea and Cacao (Thực hành Công nghệ chế	4				4	4	

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
		biến chè, cà phê, ca-cao)							
63	BTFT447IU	Confectionery Product Technology (Công nghệ chế biến bánh kẹo)	4	4	3		4		
64	BTFT448IU	Practice in Confectionery Product Technology (Thực hành Công nghệ chế biến bánh kẹo)	4				4	4	
65	BTFT449IU	Vegetable oil and essential oil technology (Công nghệ dầu và tinh dầu)	4	4	3		4		
66	BTFT459IU	Practice in Vegetable oil and essential oil technology (Thực hành Công nghệ dầu và tinh dầu)	4				4	4	
Các môn nhóm tự chọn 1									
67	BT217IU	Molecular Genetics (Di truyền phân tử)	3						
68	BT405IU	Physical Chemistry (Hóa lý)	3						
69	CHE2041IU	Mass Transfer Operations (Quá trình và thiết bị truyền khối)	3						
70	ENEE1001IU	Engineering Drawing (Vẽ kỹ thuật)	3						
71	IS026IU	Project Management (Quản lý dự án)	3				2		
72	IS062IU	E-Logistics in Supply chain Management	3				2		

STT	Mã môn học	Tên môn học	Chuẩn đầu ra của CTĐT						
			PLO1 Level 1-4	PLO2 Level 1-5	PLO3 Level 1-3	PLO4 Level 1-4	PLO5 Level 1-4	PLO6 Level 1-4	PLO7 Level 1-2
		(Quản lý hậu cần & chuỗi cung ứng)							
73	BA003IU	Principles of Marketing (Nguyên lý Marketing)		3		1			
74	PE014IU	Environmental Science (Khoa học môi trường)		3		1			
75	PE020IU	Engineering Ethics and Professional Skills (Đạo đức và kỹ năng nghề nghiệp)		3		1			
76	PE008IU	Critical thinking (Tư duy phân tích)		3		1			
77	IT135IU	Introduction to Data Science (Nhập môn Phân tích Dữ liệu)		3		1			
78	IT120IU	Entrepreneurship (Khởi nghiệp)		3					
79	PH068IU	Business analytics with big data (Phân tích kinh doanh với dữ liệu lớn)							2
80	PH059IU	Business analytics with big data laboratory (Thực hành phân tích kinh doanh với dữ liệu lớn)							2

Ghi chú: thang đo CĐR được xây dựng dựa trên tham khảo thang đo Bloom

12. Mô tả vắn tắt nội dung và khối lượng các môn học (số thứ tự của môn học tương ứng với số thứ tự của môn học trong Bảng 9 - Các môn học thuộc chương trình đào tạo)

12.1. Philosophy of Marxism and Leninism (Triết học Mác-Lênin)

- Mã môn học: **PE015IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học: Môn học trang bị cho sinh viên những nội dung cơ bản về thế giới qua, phương pháp luận triết học Mác – Lenin

Giúp cho sinh viên vận dụng những tri thức về thế giới quan, phương pháp luận triết học Mác – Lenin một cách sáng tạo trong hoạt động nhận thức và thực tiễn, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đang đặt ra.

12.2. Political economics of Marxism and Leninism (Kinh tế chính trị Mác-Lênin)

- Mã môn học: **PE016IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: PE015IU - Philosophy of Marxism and Leninism

- Mô tả nội dung môn học:

Một là, trang bị cho SV những kiến thức cơ bản, cốt lõi của Kinh tế chính trị Mác – Lenin trong bối cảnh phát triển kinh tế của đất nước và thế giới ngày nay. Đảm bảo tính cơ bản, hệ thống, khoa học, cập nhật tri thức mới, gắn với thực tiễn, tính sáng tạo, kỹ năng, tư duy, phẩm chất người học, tính liên thông khắc phục trùng lặp, tăng cường tích hợp và giảm tải, lược bớt những nội dung không còn phù hợp hoặc những nội dung mang tính kinh viện đối với sinh viên các trường Cao đẳng, Đại học không chuyên lý luận

Hai là, trên cơ sở đó hình thành tư duy, kỹ năng phân tích, đánh giá và nhận diện bản chất của các quan hệ lợi ích kinh tế trong phát triển kinh tế - xã hội của đất nước góp phần giúp SV xây dựng trách nhiệm xã hội phù hợp trong vị trí việc làm và cuộc sống sau khi ra trường.

Ba là, góp phần xây dựng lập trường, ý thức hệ tư tưởng Mác – Lenin đối với SV.

12.3. Scientific socialism (Chủ nghĩa xã hội khoa học)

- Mã môn học: **PE017IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: PE015IU - Philosophy of Marxism and Leninism

- Mô tả nội dung môn học:

Môn học trang bị cho sinh viên những nội dung cơ bản của chủ nghĩa xã hội khoa học. Giúp cho SV vận dụng những tri thức cơ bản của chủ nghĩa xã hội khoa học một cách

sáng tạo trong hoạt động nhận thức và thực tiễn, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đang đặt ra.

12.4. History of Vietnamese Communist Party (Lịch sử Đảng Cộng sản Việt Nam)

- Mã môn học: **PE018IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: PE015IU, Philosophy of Marxism and Leninism; PE016IU, Political economics of Marxism and Leninism; PE017IU, Scientific socialism

- Mô tả nội dung môn học:

Về nội dung: cung cấp những tri thức có tính hệ thống, cơ bản về sự ra đời của Đảng Cộng sản Việt Nam (1920-1930), sự lãnh đạo của Đảng đối với cách mạng Việt Nam trong thời kỳ đấu tranh giành chính quyền (1930-1945), trong hai cuộc kháng chiến chống thực dân Pháp và đế quốc Mỹ xâm lược (1945-1975), trong sự nghiệp xây dựng, bảo vệ tổ quốc thời kỳ cả nước quá độ lên chủ nghĩa xã hội, tiến hành công cuộc đổi mới (1975 – 2018).

12.5. Ho Chi Minh's Thoughts (Tư tưởng Hồ Chí Minh)

- Mã môn học: **PE019IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: Môn học trước/môn học song hành/ môn học tiên quyết: PE015IU, Philosophy of Marxism and Leninism; PE016IU, Political economics of Marxism and Leninism; PE017IU, Scientific socialism

- Mô tả nội dung môn học:

Trang bị cho sinh viên những kiến thức cơ bản về khái niệm, nguồn gốc, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; những nội dung cơ bản của tư tưởng Hồ Chí Minh; sự vận dụng của Đảng Cộng sản Việt Nam trong cách mạng dân tộc dân chủ và cách mạng xã hội chủ nghĩa, trong cuộc đổi mới đất nước hiện nay.

12.6. Engineering Ethics and Professional Skills (Đạo đức và kỹ năng nghề nghiệp)

- Mã môn học: **PE020IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is designed to introduce engineering students to the concepts, theory and practice of engineering ethics. It will allow students to explore the relationship between ethics and engineering and apply classical moral theory and decision making to engineering issues encountered in academic and professional careers. Our society places a great deal of responsibility on its professionals and requires that they conduct themselves in a manner fitting to the place of prominence accorded to them by the community. Studying and

understanding professional ethics is as much a part of your development as an engineer as is the study of higher order mathematics. You must be able to broaden your mind and be open to society's ever changing character. It is important that you learn to share ideas and concepts regardless of the fact that you may not always agree; therefore, we will be working in teams on majority of the assignments in this course.

12.7. Critical Thinking, Tư duy phân tích

- Mã môn học: **PE008IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước/môn học song hành/ môn học tiên quyết: không

- Mô tả nội dung môn học:

+ This course provides the nature and techniques of thought as a basis for our claims, beliefs, and attitudes about the world. The course also explores the process in which people develop their claims and support their beliefs.

+ Specifically, the course includes the theory and practice of presenting arguments in oral and written forms, making deductive and inductive arguments, evaluating the validity or strength of arguments, detecting fallacies in arguments, and refuting fallacious arguments.

+ Resources for the reasoning process include hypothetical and real-life situations in various fields of natural sciences, social sciences, and humanities.

12.8. General Law (Pháp luật đại cương)

- Mã môn học: **PE021IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước/môn học song hành/ môn học tiên quyết: không

- Mô tả nội dung môn học:

The overarching aims of this course are to:

- Provide essential knowledge of Vietnamese legal system through integrated technology and real cases for social and cultural sustainability.

- Raise awareness of responsibility toward others and how to stand for ending all types of legal violations, especially corruption in various social contexts.

- Practice necessary skills to act as an ambassador to ensure social fairness and global equitable rights.

- Use integrated online legal resources and communication tools to help the community to identify issues and develop countermeasures.

12.9. Writing AE1 (Tiếng Anh chuyên ngành 1)

- Mã môn học: **EN007IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước/môn học song hành/ môn học tiên quyết: không

- Mô tả nội dung môn học:

This course provides students with comprehensive instructions and practice in essay writing, including transforming ideas into different functions of writing such as process, cause-effect, comparison-contrast, and argumentative essays.

12.10. Listening AE1 (Listening & Note-taking), Tiếng Anh chuyên ngành 1

- Mã môn học: **EN008IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

The course is designed to prepare students for effective listening and note-taking skills, so that they can pursue the courses in their majors without considerable difficulty. The course is therefore lecture-based in that the teaching and learning procedure is built up on lectures on a variety of topics such as business, science, and humanities.

12.11. Writing AE2 (Research Paper Writing), Tiếng Anh chuyên ngành 2

- Mã môn học: **EN011IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course introduces basic concepts in research paper writing, especially the role of generalizations, definitions, classifications, and the structure of a research paper to students who attend English- medium college or university. It also provides them with methods of developing and presenting an argument, a comparison or a contrast.

12.12. Speaking AE2 (Effective Presentations), Tiếng Anh chuyên ngành 2

- Mã môn học: **EN012IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

Giving presentations today becomes a vital skill for students to succeed not only in university but also at work in the future. Speaking AE2, therefore, provides students with the knowledge and skills needed to deliver effective presentations (informative and persuasive presentations).

12.13. Calculus 1 (Toán cao cấp 1)

- Mã môn học: **MA001IU**
- Số tín chỉ: 4 tín chỉ (4 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course equips students with basic concepts of calculus: limits, continuity, differentiation, and integration. Applications of these concepts are extensively discussed.

12.14. Physics 1 (Vật lý 1)

- Mã môn học: **PH013IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This subject will provide an introduction to mechanics including: concepts and principles of kinetics, dynamics, energetics of motion of a particle and a rigid body.

12.15. Biology (Sinh học đại cương)

- Mã môn học: **BT311IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

The key concepts in the course are organized into units on biochemistry, molecular biology, cell biology, genetics, evolution, and ecology. Basic principles and theories of biology addressed in the course include: the chemical basis of life; cell theory; energy flow and management; gene and gene products (including inheritance and gene expression); evolution, especially by means of natural selection; and studies of ecological populations and their interactions with living and non-living aspects of their environment.

12.16. Chemistry for Engineers (Hóa đại cương)

- Mã môn học: **CH011IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This one-semester course is designed for students who are pursuing an engineering degree (e.g., information technology, biotechnology, civil, biomedical, electronic, and telecommunication engineering) and chemistry-related ones (e.g., applied chemistry and chemical engineering). The course will introduce the basic principles of chemistry and connect those principles to issues in the engineering profession. The related lab work is not included in this course.

12.17. Chemistry Laboratory (Thực hành Hóa đại cương)

- Mã môn học: **CH012IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: CH011IU - Chemistry for Engineers
- Mô tả nội dung môn học:

This one-semester course is designed for engineering students those who are pursuing a nonchemistry engineering degree such as information technology, bio-technology, civil, biomedical, electronic and telecommunication engineering. The course will introduce

students to basic laboratory safety, techniques and apparatus, and complement the information gained in lecture. Prior to each lab, students must read the lab manual about the experiment and complete a pre-laboratory report. All students must complete mandatory safety training to participate in the course, which will be provided at the first day of the class. Students are expected to come to each lab on.

12.18. Calculus 2 (Toán cao cấp 2)

- Mã môn học: **MA019IU**
- Số tín chỉ: 4 tín chỉ (4 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is a continuation of Calculus 1. Its aim to equip student with basis concepts of sequence, series, vector functions, functions of several variables, multiple integrals and their applications.

12.19. Physics 2 (Vật lý 2)

- Mã môn học: **PH014IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This subject will provide a basic knowledge of fluid mechanics; macroscopic description of gases; heat and the first law of thermodynamics; heat engines and the second law of thermodynamics; microscopic description of gases and the kinetic theory of gases.

12.20. Applied Statistics (Thống kê ứng dụng)

- Mã môn học: **MA040IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

Students will be provided with knowledge about statistical data, plotting data, descriptive statistics, probability and distribution, hypothesis test, T-test, analysis of variance (ANOVA), time series analysis and forecasting.

12.21. Applied Statistics Lab (Thực hành thống kê ứng dụng)

- Mã môn học: **MA041IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is designed for students pursuing a degree in chemical/environmental engineering and provides knowledge and skills in using Python/R software for plotting

data, descriptive statistics, hypothesis test, T test, analysis of variance (ANOVA), time series analysis and forecasting.

12.22. Environmental Science (Khoa học môi trường)

- Mã môn học: **PE014IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course provides basic knowledge about environmental science; population growth and utilization of natural resources and the environment; natural resources and current exploitation; pollution and its impacts, environmental economic and sustainable development. It also aims to raise students' awareness about possible impacts of human activities on the environment and natural resources in order to apply relevant economic practices.

12.23. Introduction to Data Science (Nhập môn Khoa học dữ liệu)

- Mã môn học: **IT135IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học: This subject will provide a broad introduction to four key aspects of data science: data retrieval and manipulation, data visualization, statistical computation and machine learning, and presentation and communication.

12.24. Project Management (Quản lý dự án)

- Mã môn học: **IS026IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is developed to provide the principal concept on project management which was characterized by the project management body of knowledge guide (PMBOK Guide). This guide emphasizes the five project process groups of initiating, planning, executing, controlling and closing, and the nine knowledge areas of project integration, scope, time, cost, quality, human resources, communication, risk, and procurement management.

12.25. E-Logistics and Supply chain Management (Hậu cần & quản lý chuỗi cung ứng)

- Mã môn học: **IS062IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course introduces supply chain systems for e-commerce. Topics will cover all aspects of an e-supply chain system from different e-commerce models and esupply chain structure, demand forecasting, e-procurement, customer segmentation and e-CRM, e-logistics system design, e-manufacturing. Ewarehousing and e-fulfillment center, e-shipping and e-distribution system, and some OR applications in e-supply chain problems.

12.26. Principles of Marketing (Nguyên lý Marketing)

- Mã môn học: **BA003IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

The course named “Principles of Marketing” provides the students with necessary information on the basic concepts of marketing and its principles. It focuses on the understanding of Market Demand and Customers Behaviors as well as Marketing strategies developed by firms in terms of Pricing, Product, Place, Promotion, etc. The course also mentions various methods to market research and environmental factors that affect the marketing activities.

12.27. Entrepreneurship (Khởi nghiệp)

- Mã môn học: **IT120IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

An introduction to the creative and innovative managerial practices of successful entrepreneurship. This course reviews the significant economic and social contributions entrepreneurs provide to society, the intense lifestyle commitment, and the skills necessary for entrepreneurial success. It explores how to identify and develop solutions to the most common leadership and personal challenges faced by entrepreneurs when starting new ventures or launching new products. It also promotes a deeper understanding of what is required to be a successful entrepreneur, highlights the skills and tools necessary to start a new business and explores alternatives to common pitfalls. This course applies entrepreneurial marketing approaches used by successful entrepreneurs. These include utilizing industry sector trends, identifying emerging customer niches, developing new products/services, using guerilla marketing strategies, and Internet and social marketing strategies. It emphasizes the importance of managing cash flows, ratio analysis, pro forma development, and the basics of deal structure and harvesting a business venture. Students will identify and interpret sources of information from company financial reports, financial publications, industry benchmarks, the media, and websites. An introduction to the process of researching, writing, and presenting a business plan. Students identify and screen ideas using a business feasibility study that describes the product features, market opportunity, customer profile, sales forecast, competitive advantage, and

profit potential. Following a successful feasibility study, students may use business plan software as develops their own complete business plan.

12.28. Organic Chemistry (Hóa hữu cơ)

- Mã môn học: **CH009IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is designed for non-chemistry majors, as it is intended for students pursuing a degree in biotechnology. The course is divided into two parts. The first part covers the basic fundamentals of general organic chemistry and properties of organic compounds as needed to understand the organic chemistry of living cells, analytical chemistry, physiology and biochemistry. The second part focuses on organic chemistry of living cells, including the chemistry of carbohydrates, lipids, amino acids, proteins and nucleic acids. Some real applications as well as computational aspects will also be discussed.

12.29. Introduction to Food Science and Technology (Nhập môn Khoa học và Công nghệ Thực phẩm)

- Mã môn học: **BTFT201IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

The subject will provide knowledge on following:

Introduction to food science. Food production and composition. Nutrients, additives and ingredients. Food quality and sensory properties. Food safety, regulation, labeling. Introduction to food chemistry, biochemistry and physics. Water in foods.

Introduction to food microbiology. Microorganisms, taxonomy, growth conditions. Food-borne illness, poisoning, spoilage and fermentations. Health aspects, probiotics, bioactive peptides.

Food processing and preservation. Industrial and business aspects. Engineering, quality control, ecological aspects. Principles of food preservation. Drying, freezing, canning, chemical preservatives, irradiation, packaging. Food manufacturing, formulation, functionality. Regulatory aspects. Food laws, inspections, recalls. Food service and the hospitality industry.

Major food commodities and products. Cereals, oilseeds, flours, bread, fats and oils, vegetables, fruits, tea, beverages, milk and dairy products, eggs, meat, poultry and fish.

Current food issues. Functional foods and nutraceuticals, genetically modified foods, organic foods, minimal processing, non-thermal preservation technologies. Research and development. Careers in food science.

12.30. Food Engineering Principles (Các nguyên lý Kỹ thuật Thực phẩm)

- Mã môn học: **BTFT203IU**

- Số tín chỉ: 4 tín chỉ (4 lý thuyết + 0 thực hành)

- Môn học trước: PH014IU- Physics 2

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Basic principles of food process engineering – mass and energy. Food composition, physical properties. Introduction to food processing.

- Units and dimensions. SI, CGS, English systems. Conversion factors. Dimensional consistency. Problems - solving examples.

- Material balances. Batch and continuous processes. General mass balance equations, algebraic unknowns, tie substance, basics for calculation.

- Thermodynamics. Thermodynamic properties. Vapours and gases. Ideal gas law. Real gases. Sensible and latent heat. Enthalpy. Energy balances.

- Fluid mechanics. Viscosity. Laminar and turbulent flow. Fluid flow in pipes, pressure drop, friction. Reynolds number. Bernoulli equation.

- Heat transfer theory. Conduction, convection, radiation. Fourier's law. Heat transfer applications. Steady state. Forced and free convection equations. Dimensionless numbers. Heat exchangers. Heat transfer coefficients.

12.31. Food Chemistry and Biochemistry (Hóa học và hóa sinh thực phẩm)

- Mã môn học: **BTFT156IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: CH009IU-Organic Chemistry

- Mô tả nội dung môn học:

This course introduces a biochemical approach in relation with food science and technology, especially the practical approaches to food production system.

12.32. Food Sustainability (Phát triển bền vững thực phẩm)

- Mã môn học: **BTFT157IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước/môn học song hành/ môn học tiên quyết: không

- Mô tả nội dung môn học:

This subject will provide knowledge on the principles and steps in assessment of food production and environmental sustainability, and on what to do to improve efficiency, protect the environment and meet sustainability.

12.33. Food Microbiology (Vi sinh thực phẩm)

- Mã môn học: **BTFT234IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: BTFT201IU-Introduction to Food Science and Technology

- Mô tả nội dung môn học:

This subject will provide knowledge on the following:

- Microorganisms and their occurrence in the foods
- Intrinsic and extrinsic parameters of foods that affect microbial growth
- Preservation techniques involving inhibit or inactivate microorganisms
- Pathogens in foods and foodborne diseases
- Application of microorganisms in food industry

12.34. Practice in Food Microbiology (Thực hành Vi sinh thực phẩm)

- Mã môn học: **BTFT254IU**

- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)

- Môn học trước/môn học song hành/ môn học tiên quyết: BTFT234IU - Food Microbiology (SH)

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Microorganisms and their occurrence in the foods.
- Basic activities in a food microbiology laboratory.
- Techniques for detection and enumeration of microbes in food.

12.35. Nutrition and Functional Foods (Dinh dưỡng và Thực phẩm chức năng)

- Mã môn học: **BTFT205IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: BTFT201IU-Introduction to Food Science and Technology

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Vitamins, minerals, micronutrients, and antioxidants including sources, metabolism, and functions in the human body.

- Nutritive values of food.

- Requirements for human health.

- Nutraceuticals, and functional foods and their effects on human health beyond basic nutrition.

- Food-related diseases.

12.36. Food Unit Operations 1 (Quá trình và thiết bị Thực phẩm 1)

- Mã môn học: **BTFT331IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: BTFT201IU-Introduction to Food Science and Technology, BTFT203IU- Food Engineering Principles

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Review of heat transfer phenomena.

- Structure and physical properties of water.
- Psychrometry
- Drying theory
- Industrial food drying operations
- Evaporation and concentration. Quality and stability of dried foods.
- Theory of freezing effects in foods
- Food freezing technology. Responses of foods to industrial freezing
- Principles of heat preservation of foods
- Thermal resistance of microorganisms and enzymes
- Process lethality calculations
- Industrial food sterilization processes
- Non-thermal food preservation: principles of food irradiation.

12.37. Practice in Food Unit Operations 1 (Thực hành Quá trình và thiết bị Thực phẩm 1)

- Mã môn học: **BTFT351IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học song hành: BTFT331IU-Food Unit Operations 1
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

Practical experiments for students in the field of food processing, including moisture measurement, drying process and specific heat determination.

12.38. Food Physics and Colloids (Vật lý thực phẩm và hệ keo)

- Mã môn học: **BTFT461IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT203IU - Food Engineering Principles
- Mô tả nội dung môn học:

This course is designed to provide an understanding of the physical properties of foods and how they influence the design and operation of major food processing operations and also how they influence consumer perception and preferences for foods. The module covers physical, rheological and thermal properties of foods including the principles and design of measurement techniques. The course also gives an overview of the molecular and colloidal interactions found in food products, and discusses the effect of these interactions on stability of these products.

12.39. Food Analysis (Phân tích Thực phẩm)

- Mã môn học: **BTFT332IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước: CH009IU - Organic Chemistry, BTFT201IU - Introduction to Food Science and Technology

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Principles and instruments in food analyses including the basic techniques in food analyses using for qualitative and quantitative analyses of moisture, protein, carbohydrate, lipid, dietary fiber, mineral and vitamins.
- Advanced methods in food analyses such as UV/Vis Spectroscopy, Atomic Absorption Spectroscopy, TLC, HPLC, and GC.

12.40. Practice in Food Analysis (Thực hành Phân tích Thực phẩm)

- Mã môn học: **BTFT352IU**

- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)

- Môn học song hành: BTFT332IU - Food Analysis

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Principles in chemical and instrumental analyses using for qualitative and quantitative analyses of moisture, protein, carbohydrate, lipid, dietary fiber, mineral and vitamins. Introduction of the basic techniques in food and microbiology analyses.
- Advanced methods in food analysis such as Gravimetric, volumetric, HPLC, Infrared chromatography, atomic absorption spectroscopy.

12.41. Enzyme and Food Fermentation (Enzyme và Lên men Thực phẩm)

- Mã môn học: **BTFT236IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: BTFT201IU - Introduction to Food Science and Technology, BTFT156IU - Food Chemistry and Biochemistry

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Basic concepts of enzyme, the production and application of enzymes in food industry
- Important reaction of enzymes.
- Technological processes and equipment in the production of different fermented foods

12.42. Practice in Enzyme and Food Fermentation (Thực hành Enzyme và Lên men Thực phẩm)

- Mã môn học: **BTFT256IU**

- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)

- Môn học song hành: BTFT236IU - Enzyme and Food Fermentation

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

Knowledge and skill of food enzymes, technological processes and equipment in the production of different fermented foods.

12.43. Toxicology and Food Safety (Độc tố học và An toàn Thực phẩm)

- Mã môn học: **BTFT303IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: Introduction to Food Science and Technology

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Properties of chemicals and biological substances found in food and the human food chains that have the potential of producing adverse health effects on humans.

- A deep understanding of how food toxicology is relevant to food safety and critical steps to establish HACCP plans.

12.44. Food Packaging and Food Additives (Bao bì và Phụ gia Thực phẩm)

- Mã môn học: **BTFT306IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: BTFT201IU - Introduction to Food Science and Technology (HT)

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- The introductory knowledge in function of food packaging, materials used for food packaging, production of food packaging, packaging systems and equipment and change in food quality during storage in packaging.

- Classification of food additives allowed to use in food products. Application of food additives in food processing, food preservation and distribution of food products. Toxicity of the food additives. The food improvers are usually used in food processing.

12.45. Food Unit Operations 2 (Quá trình và thiết bị Thực phẩm 2)

- Mã môn học: **BTFT334IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: BTFT201IU - Introduction to Food Science and Technology, BTFT203IU- Food Engineering Principles

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Unit operations and unit processes involving momentum and mass transfer.

- Fluids and Fluid Handling, Newtonian and Non-Newtonian Fluids, Laminar and Turbulent Flow

- Fluid Mixing: Theory and Equipment, Homogenization and Emulsification

- Mechanical separation processes: sedimentation, centrifugation, and filtration.

- Principles and typical equipment for size adjustment: grinding; sieving, sorting, slicing, pulping, etc.

- Operations for handling solid materials are discussed, including grinding, and mixing of solids.

- Other topics in mass transfer: Diffusion and Diffusion Coefficient; Mass transfer equations; Steady State and Transient Mass Transfer.

- Unit operations involving mass transfer: Hydro-distillation; Solvent extraction (leaching); Supercritical fluid extraction; Microfiltration and Ultrafiltration; Reverse Osmosis and Extrusion process.

12.46. Practice in Food Unit Operations 2 (Thực hành Quá trình và thiết bị Thực phẩm 2)

- Mã môn học: **BTFT354IU**

- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)

- Môn học song hành: BTFT334IU - Food Unit Operations 2

- Mô tả nội dung môn học:

This subject will provide practice on following:

- Fluid rheology determination.

- Particle size measurement

- Mass transfer understanding

12.47. Food Quality Assurance System (Các hệ thống đảm bảo chất lượng Thực phẩm)

- Mã môn học: **BTFT305IU**

- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)

- Môn học trước: MA040IU- Applied Statistics (HT)

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Principles of quality control, quality assurance in food industry including determination of key quality characteristics, sampling, measurement and test procedure, specification and standard.

- Control of raw materials, process and finished products; evaluation of sensory properties and other factors are topics of discussion.

- Essential quality

- Management tools such as tools for understanding the process (flow chart, cause and effect diagram), tools for collecting, organizing, analyzing and understanding data (check sheet, pareto chart, histogram) and statistical process control (SPC) will be covered.

- Quality assurance systems (GMP, SSOP, HACCP, ISO9000) and their certification for an organization as well as concepts of total quality management.

12.48. Food Laws and Standards (Luật thực phẩm và tiêu chuẩn thực phẩm)

- Mã môn học: **BTFT312IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Introduction to Food Law and Food Standard including challenges for food control authorities, important food issues, elements of a national food control system, strengthening national food control systems, and specific issues of developing countries.
- Vietnam Food Law: Law No. 55/2010/QH12 on Food Safety.
- International Food Laws and Regulations: International Food Regulation and International Food Regulatory Agencies. Food Laws and Regulations in some other countries.
- Regulations in relations to food safety and quality standards in specific sectors: GMO foods, organic foods, food additives, functional foods, dairy products, fruit and vegetable products, meat and egg products, aquatic products, food retailing and restaurants, food labeling and advertising.

12.49. Food Microbiology Analysis (Phân tích vi sinh Thực phẩm)

- Mã môn học: **BTFT337IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT234IU- Food Microbiology
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Basic knowledge on the sources of food microorganisms.
- Factors affecting food microorganism development; effects of microorganisms on certain food and food products;
- Basic principles in testing industrial microorganisms, advantages and disadvantages of using traditional and rapid methods for microbial examination in the lab and in the food industry.

12.50. Practice in Food Microbiology Analysis (Thực hành Phân tích Vi sinh Thực phẩm)

- Mã môn học: **BTFT358IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT254IU- Practice in Food Microbiology
- Môn học song hành: BTFT337IU - Food Microbiology Analysis
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Source of food microorganism and factors affecting the food microorganism development, effects of microorganisms on certain food and food products
- Advantages and disadvantages of using traditional and rapid methods that have been used for the microbiology examination in the lab and in the food industry, basic principles in testing industrial microorganism.

- Critical laboratory techniques used in food microbiology analysis including development of proficiency in using selected microbiological techniques currently employed in regulatory, quality control and research laboratories, performance of specific microbiological analyses of foods to assess numbers and kinds of spoilage organisms or food-borne pathogens.

- Ability to recognize and explain features involving with food changes due to impact of microorganisms.

12.51. Food Sensory Analysis (Phân tích cảm quan Thực phẩm)

- Mã môn học: **BTFT437IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước: MA040IU - Applied Statistics

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Basic concepts of human senses, application of sensory evaluation, principle of sensory judgment.

- Principle and general procedure to conduct sensory evaluation test including discrimination test, descriptive test and consumer research methods

12.52. Practice in Food Sensory Analysis (Thực hành Phân tích cảm quan Thực phẩm)

- Mã môn học: **BTFT457IU**

- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)

- Môn học trước: MA041IU - Applied Statistics Lab

- Môn học song hành: BTFT437IU - Food Sensory Analysis

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

Basic techniques of sensory testing, nerves function in food sensory testing, sensory design, the practical aspects of conducting sensory test using TCVN

12.53. Food Product Development and Marketing (Phát triển sản phẩm và tiếp thị)

- Mã môn học: **BTFT438IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước: BTFT437IU - Food Sensory Analysis, BTFT312IU - Food Laws and Standards

- Mô tả nội dung môn học:

This subject will provide knowledge on the principles and steps in the process of developing a new product, create formulas, production testing, quality control, research, commercial feasibility.

12.54. Practice in Food Product Development and Marketing (Thực hành Phát triển sản phẩm và tiếp thị)

- Mã môn học: **BTFT458IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT457IU – Practice in Food Sensory Analysis
- Môn học song hành: BTFT438IU - Food Product Development and Marketing
- Mô tả nội dung môn học:

The principles and steps in the process of developing a new product, create formulas, production testing, quality control, research, commercial feasibility.

12.55. Scientific Writing and Design of experiments for food science (Viết báo cáo khoa học và thiết kế thí nghiệm trong khoa học thực phẩm)

- Mã môn học: **BTFT316IU**
 - Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
 - Môn học trước/môn học song hành/ môn học tiên quyết: MA040IU – Applied Statistics (HT)
 - Mô tả nội dung môn học:
- This subject will provide knowledge on following:
- Introduction to scientific research, hypothesis testing and experimental design in food science and technology.
 - Structure of a research paper and how to complete a research writing.
 - Course projects that are used to evaluate how theory is applied in practice as well as to develop inter-personal skills.

12.56. Post – harvest Technologies (Công nghệ sau thu hoạch)

- Mã môn học: **BTFT411IU**
 - Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
 - Môn học trước/môn học song hành/ môn học tiên quyết: BTFT201IU - Introduction to Food Science and Technology (HT)
 - Mô tả nội dung môn học:
- This subject will provide knowledge on following:
- General principles of postharvest changes in animal and plant materials.
 - Postharvest handlings and preservation methods of raw materials.

12.57. Food Plant Design (Thiết kế nhà máy thực phẩm)

- Mã môn học: **BTFT355IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: BTFT305IU - Food Quality Assurance System (HT)
- Mô tả nội dung môn học:

This course is essential for students to have a thorough understanding of the philosophy, tools and techniques of food factory design. This course is aimed at providing the background and skills necessary for effective design food process and sanitary system using a systems approach. This course will cover the following contents: design of food factory processes and sanitary system.

12.58. Food Processing (Chế biến thực phẩm)

- Mã môn học: **BTFT412IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT203IU - Food Engineering Principles (HT)
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Wide range of processing techniques that are used to process foods.
- Overview of most unit operations, details of the processing methods and equipment, operation conditions and the effects of processing on the quality of food
- How knowledge on the properties of foods and the required changes are used to design equipment and to control processing conditions on an industrial scale.
- Food quality, safety, spoilage and shelf-life.

12.59. Dairy Product Technology (Công nghệ chế biến sữa và các sản phẩm sữa)

- Mã môn học: **BTFT441IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT331IU - Food Unit Operations 1
- Mô tả nội dung môn học:

Students taking this course will be provided with integrated concepts in dairy chemistry, microbiology, processing and products. Course materials cover major operations in milk processing from raw materials to finished products. Important industrial practices such as plant sanitation and HACCP are also included.

12.60. Practice in Dairy Product Technology (Thực hành Công nghệ chế biến sữa và các sản phẩm sữa)

- Mã môn học: **BTFT451IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1
- Môn học song hành: BTFT441IU - Dairy Product Technology
- Mô tả nội dung môn học:

This project will provide knowledge on following:

- Integrated concepts in dairy chemistry, microbiology, processing and products.
- Major operations in milk processing from raw materials to finished products.

- Important industrial practices such as plant sanitation and HACCP are also included.

12.61. Beverage Technology (Công nghệ đồ uống)

- Mã môn học: **BTFT442IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT331IU - Food Unit Operations 1
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Introduction of alcoholic and non-alcoholic beverages.
- The basic principles and producing processes of fruit juice, fruit-like juice, beer, wine and traditional Vietnamese alcohols.
- Hygiene and sterilization in beverage technology

12.62. Practice in Beverage Technology (Thực hành Công nghệ đồ uống)

- Mã môn học: **BTFT452IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1
- Môn học song hành: BTFT442IU - Beverage Technology
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Introduction of alcoholic and non-alcoholic beverages.
- The basic principles and producing processes of fruit juice, fruit-like juice, beer, wine and traditional Vietnamese alcohols.

12.63. Cereal Product Technology (Công nghệ chế biến lương thực)

- Mã môn học: **BTFT443IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT331IU - Food Unit Operations 1
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Structure, composition and functional properties of rice, wheat, barley and other cereal grains used to produce starches, flours, milling by-products, cereal-based food
- Cereal processing technology such as wet and dry processing, breadmaking technology, extrusion technology, noodle making technology, etc.

12.64. Practice in Cereal Product Technology (Thực hành Công nghệ chế biến lương thực)

- Mã môn học: **BTFT453IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1

- Môn học song hành: BTFT443IU - Cereal Product Technology

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Structure, composition and functional properties of rice, wheat, barley and other cereal grains used to produce starches, flours, milling by-products, cereal-based foods; cereal processing technology such as wet and dry processing, bread-making technology, extrusion technology, noodle-making technology, etc.

- Quality control and assurance in food processing.

12.65. Meat Product Technology (Công nghệ chế biến các sản phẩm thịt)

- Mã môn học: **BTFT445IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước: BTFT331IU - Food Unit Operations 1

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Basic concepts of meat science and technology including chemical and structural properties of meat, microbiology of meat, and technologies in meat product processing

- General situation of meat production and consumption in the World and in Vietnam

- Application of HACCP plan in meat processing

12.66. Practice in Meat Product Technology (Thực hành Công nghệ chế biến các sản phẩm thịt)

- Mã môn học: **BTFT455IU**

- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)

- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1

- Môn học song hành: BTFT445IU - Meat Product Technology

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Topics relating to meat science and technology such as chemical and structural properties of meat, microbiology of meat, and technologies in meat product processing.

- The situation of meat production and consumption in the World and in Vietnam.

Another part of the course discusses the application of HACCP in meat processing.

12.67. Technology of Coffee, Tea and Cocoa (Công nghệ chế biến chè, cà phê, ca-cao)

- Mã môn học: **BTFT446IU**

- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)

- Môn học trước: BTFT331IU - Food Unit Operations 1

- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Basic concepts of coffee, tea, and cocoa technology

- Post-harvest technology of coffee, tea, and cocoa
- Manufacturing processes for products from coffee, tea, and cocoa

12.68. Practice in Technology of Coffee, Tea and Cacao (Thực hành Công nghệ chế biến chè, cà phê, ca-cao)

- Mã môn học: **BTFT456IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1
- Môn học song hành: BTFT446IU - Technology of Coffee, Tea and Cocoa
- Mô tả nội dung môn học:

The course provides knowledge and skills so that students can:

- Production and consumption of tea, coffee and cocoa in Vietnam and in the world;
- Biochemical changes after post-harvest, storage and pre-processing; Quality control of raw materials;
- Processing of tea, coffee, and cocoa, the biochemical changes during processing of tea, coffee and cocoa
- Product quality standards and assurance.

12.69. Confectionery Product Technology (Công nghệ chế biến bánh kẹo)

- Mã môn học: **BTFT447IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT331IU - Food Unit Operations 1
- Mô tả nội dung môn học:

Students taking this course will be provided with integrated concepts in confectionery chemistry, processing, and products. Course materials cover major operations in confectionery processing from raw materials to finished products. Important industrial practices such as plant sanitation and evaluation are also included.

12.70. Practice in Confectionery Product Technology (Thực hành Công nghệ chế biến bánh kẹo)

- Mã môn học: **BTFT448IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1
- Môn học song hành: BTFT447IU - Confectionery Product Technology
- Mô tả nội dung môn học:

Students taking this course will be provided with integrated concepts in confectionery chemistry, processing, and products. Course materials cover major operations in confectionery processing from raw materials to finished products. Important industrial practices such as plant sanitation and evaluation are also included.

12.71. Vegetable oil and essential oil technology (Công nghệ dầu và tinh dầu)

- Mã môn học: **BTFT449IU**
- Số tín chỉ: 2 tín chỉ (2 lý thuyết + 0 thực hành)
- Môn học trước: BTFT331IU - Food Unit Operations 1
- Mô tả nội dung môn học:

Students taking this course will be provided with integrated concepts in fat and essential oil chemistry, microbiology, processing and products. Course materials cover major operations in vegetable oil and essential oil processing from raw materials to finished products. Important industrial practices such as quality control and evaluation are also included.

12.72. Practice in Vegetable oil and essential oil technology, Thực hành Công nghệ dầu và tinh dầu

- Mã môn học: **BTFT459IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước: BTFT351IU - Practice in Food Unit Operations 1
- Môn học song hành: BTFT449IU - Vegetable oil and essential oil technology
- Mô tả nội dung môn học:

Students taking this course will be provided with integrated concepts in fat and essential oil chemistry, microbiology, processing and products. Important industrial practices such as oil extraction and oil product preparation are included.

12.73. Engineering Drawing (Vẽ kỹ thuật)

- Mã môn học: **ENEE1001IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is designed for non-chemistry majors, as it is intended for students pursuing a degree in biotechnology. The course is divided into two parts. The first part covers the basic fundamentals of general, organic chemistry and properties of organic compounds as needed to understand the organic chemistry of living cells, analytical chemistry, physiology and biochemistry. The second part focuses on organic chemistry of living cells, including the chemistry of carbohydrates, lipids, amino acids, proteins and nucleic acids. Some real applications as well as computational aspects will also be discussed.

12.74. Molecular Genetics (Di truyền phân tử)

- Mã môn học: **BT217IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

The course includes: (i) Mechanisms of gene control and nature of mutation in both prokaryotes and eukaryotes; (ii) Application of key molecular genetic techniques in the laboratory and in practice; (iii) Genomics and proteomics studies; (iv) QTL analysis for quantitative traits; (v) Introduction to bioinformatics; (vi) Evolution at molecular level.

12.75. Physical Chemistry (Hóa lý)

- Mã môn học: **BT405IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

Provides students with knowledge on Diffusion, Effusion, collision volume, mean free path. Equilibrium Conditions, Partial Molar Quantities. Solutions, Ideal Solutions & Colligative Properties, Non-Ideal Solutions, Ionic Solutions; properties of gases. Pressure, ideal gas law; Kinetic Molecular theory and its derivation. Molecular speed measurements, Zeroth Law of Thermodynamics and Thermometry, First Law of Thermodynamics. Thermochemistry, Second Law of Thermodynamics & Entropy. Chemical Equilibrium, Electrochemistry, Phase Equilibria, Gravitational, Electric, Magnetic, Surface Work; Kinetics.

Analyzing the underlying working mechanism of physical chemical phenomena; Oral presentation; Teamwork and problem-solving.

12.76. Mass Transfer Operations (Quá trình và thiết bị truyền khối)

- Mã môn học: **CHE2041IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

Mass transfer processes are vital in chemical engineering because it is the method to separate or purify components from their mixtures. Through this course, students learn the principles of mass transfer and their application. The course integrates fluid dynamics and thermodynamics in order to develop rate expressions for mass transfer in multiphase and multicomponent systems. Based on Fick's law and phase equilibrium rules, the course provides knowledge of designing large scale separation processes such as distillation, extraction, drying, stripping and absorption to selectively obtain or remove specific components from mixtures.

12.77. Business analytics with big data (Phân tích kinh doanh với dữ liệu lớn)

- Mã môn học: **PH068IU**
- Số tín chỉ: 3 tín chỉ (3 lý thuyết + 0 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course is an introduction to business analytics with various types of business analytics, types of data, datasources, understanding of big data and bigdata Analytics and social media as well as social media analytics.

12.78. Business analytics with big data laboratory (Thực hành phân tích kinh doanh với dữ liệu lớn)

- Mã môn học: **PH059IU**
- Số tín chỉ: 1 tín chỉ (0 lý thuyết + 1 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: không
- Mô tả nội dung môn học:

This course provides students with case studies related to business analytics with various types of business analytics, types of data, data sources, understanding of big data and big data analytics and social media as well as social media analytics.

12.79. Internship (Thực tập ngành nghề)

- Mã môn học: **BTFT462IU**
- Số tín chỉ: 6 tín chỉ (0 lý thuyết + 6 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: tích lũy tối thiểu 90 tín chỉ
- Mô tả nội dung môn học:
- To those working at manufacturing factories: Observing and understanding the technological process of the main product(s) in the factories. Understanding the structure and operating manufacturing machines and equipment, and product QA and QC activities.
- To those working at research institutes: Learning how to do research: doing research. Understanding research methods. Identifying research issues and doing research to tackle them. Understanding analytical equipment and techniques. Operating research equipment and apparatus. Learning how to write a scientific paper.
- To those working at food service establishments: Observing and understanding procedures, regulations, structures of organizations providing food services (food training, certification, food quality and safety). Understanding different methods and standards. Identifying potential issues and finding possible solutions.

12.80. Thesis (Luận văn tốt nghiệp)

- Mã môn học: **BT179IU**
- Số tín chỉ: 12 tín chỉ (0 lý thuyết + 12 thực hành)
- Môn học trước/môn học song hành/ môn học tiên quyết: tích lũy tối thiểu 124 tín chỉ
- Mô tả nội dung môn học:

Thesis project is a semester-long, individual study, taken at the last semester of the senior year. This course provides opportunities to acquire a deeper understanding and practical application of research in the food-related fields. During the course, students will demonstrate their ability to independently plan, carry out and present their research on a

topic. This involves formulating research problems and objectives, selecting appropriate methods, analysing data and presenting results in relation to scientific articles and other relevant literature. The new design or solution for improvement must take into account realistic constraints such as economic, social and environmental conditions.

TRƯỜNG KHOA



Nguyễn Văn Thuận

**KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG**



Đinh Đức Anh Vũ



Phụ lục 1
NỘI DUNG ĐIỀU CHỈNH
CHƯƠNG TRÌNH ĐÀO TẠO NGÀNH CÔNG NGHỆ THỰC PHẨM
KHÓA 2025 SO VỚI KHÓA 2024

*(Kèm theo Quyết định số 1101/QĐ-ĐHQT ngày 04 tháng 9 năm 2025
của Hiệu trưởng Trường Đại học Quốc tế)*

1. Các môn học loại bỏ khỏi chương trình đào tạo

STT	Tên môn học	Mã môn học	Số tín chỉ	Khối kiến thức
1	Biostatistics	BT317IU	2	Môn học bắt buộc
2	Practice in Biostatistics	BT318IU	1	Môn học bắt buộc
3	Internship 1	BTFT419IU	3	Môn học bắt buộc
4	Internship 2	BTFT469IU	3	Môn học bắt buộc

2. Các môn học bổ sung vào chương trình đào tạo

STT	Tên môn học	Mã MH	Số tín chỉ	Khối kiến thức
1	Applied Statistics	MA040IU	2	Môn học bắt buộc
2	Applied Statistics Lab	MA041IU	1	Môn học bắt buộc
3	Introduction to Data Science	IT135IU	3	Môn học tự chọn nhóm 1
4	Entrepreneurship	IT120IU	3	Môn học tự chọn nhóm 1
5	Internship	BTFT462IU	6	Môn học bắt buộc
6	Business analytics with big data	PH068IU	3	Môn học tự chọn nhóm 1
7	Business analytics with big data laboratory	PH059IU	1	Môn học tự chọn nhóm 1

3. Hướng xử lý cho các sinh viên khóa cũ khi chưa học các môn học bị loại bỏ khỏi chương trình đào tạo

Tên môn học cũ	Mã MH	Số tín chỉ	Tên môn học mới	Mã MH	Số tín chỉ
Biostatistics	BT317IU	2	Applied Statistics	MA040IU	2
Practice in Biostatistics	BT318IU	1	Applied Statistics lab	MA041IU	1





Phụ lục 2
MỨC ĐỘ ĐÁP ỨNG KHUNG NĂNG LỰC SỐ CỦA CHƯƠNG TRÌNH ĐÀO TẠO
NGÀNH CÔNG NGHỆ THỰC PHẨM

(Kèm theo Quyết định số 1101/QĐ-ĐHQT ngày 04 tháng 9 năm 2025
của Hiệu trưởng Trường Đại học Quốc tế)

* Đáp ứng Thông tư 02/2025/TT-BGDĐT ngày 24/01/2025 của Bộ Giáo dục và Đào tạo
Quy định về Khung năng lực số cho người học.

I. Mức độ đáp ứng khung năng lực số của chương trình đào tạo

1. Miền năng lực 1: Khai thác dữ liệu và thông tin

* Đánh giá năng lực thành phần theo 8 bậc của Khung năng lực số (từ bậc 1 đến bậc 8)

STT	Mã MH	Tên MH (Tiếng Anh)	Năng lực thành phần (NLTP)		
			NLTP 1.1	NLTP 1.2	NLTP 1.3
1	BTFT461IU	Food Physics and Colloids	4	4	4
2	BTFT157IU	Food Sustainability	4	4	4
3	BTFT355IU	Food Plant design	4	4	4
4	BTFT457IU	Practice in Food Sensory Analysis	4	4	4
5	BTFT438IU	Food Product Development and Marketing	4	4	4
6	BTFT458IU	Practice in Food Product Development and Marketing	4	4	4
7	BTFT316IU	Scientific Writing and Design of experiments for food science	4	4	4
8	BTFT411IU	Post – harvest Technologies	4	4	4
9	BTFT462IU	Internship	4	4	4
10	BT179IU	Thesis	4	4	4

2. Miền năng lực 2: Giao tiếp và hợp tác trong môi trường số

* Đánh giá năng lực thành phần theo 8 bậc của Khung năng lực số (từ bậc 1 đến bậc 8)

STT	Mã MH	Tên MH (Tiếng Anh)	Năng lực thành phần					
			NLTP 2.1	NLTP 2.2	NLTP 2.3	NLTP 2.4	NLTP 2.5	NLTP 2.6
1	BTFT331IU	Food Unit Operations 1	4	4		4		
2	BTFT332IU	Food Analysis	4	4		4		
3	BTFT236IU	Enzyme and Food Fermentation	4	4		4		
4	BTFT306IU	Food Packaging and Food Additives	4	4		4		
5	BTFT334IU	Food Unit Operations 2	4	4		4		
6	BTFT312IU	Food Laws and Standards	4	4	4	4	4	4
7	BTFT458IU	Practice in Food Product Development and Marketing	4	4		4	4	4
8	BTFT441IU	Dairy Product Technology	4	4		4		
9	BTFT442IU	Beverage Technology	4	4		4		
10	BTFT443IU	Cereal Product Technology	4	4		4		
11	BTFT445IU	Meat Product Technology	4	4		4		
12	BTFT446IU	Technology of Coffee, Tea and Cacao	4	4		4		
13	BTFT447IU	Confectionery Product Technology	4	4		4		
14	BTFT449IU	Vegetable oil and essential oil technology	4	4		4		
15	IT135IU	Introduction to Data Science					4	4
16	PH068IU	Business analytics with big data			4		4	4
17	PH059IU	Business analytics with big data laboratory			4		4	4

3. Miền năng lực 3: Sáng tạo nội dung số

* Đánh giá năng lực thành phần theo 8 bậc của Khung năng lực số (từ bậc 1 đến bậc 8)

STT	Mã MH	Tên MH (Tiếng Anh)	Năng lực thành phần			
			NLTP 3.1	NLTP 3.2	NLTP 3.3	NLTP 3.4
1	BTFT331IU	Food Unit Operations 1	4	4		
2	BTFT332IU	Food Analysis	4	4		
3	BTFT236IU	Enzyme and Food Fermentation	4	4		
4	BTFT306IU	Food Packaging and Food Additives	4	4		
5	BTFT334IU	Food Unit Operations 2	4	4		
6	BTFT312IU	Food Laws and Standards	4	4	4	
7	BTFT458IU	Practice in Food Product Development and Marketing	4	4		
8	BTFT441IU	Dairy Product Technology	4	4		
9	BTFT442IU	Beverage Technology	4	4		
10	BTFT443IU	Cereal Product Technology	4	4		
11	BTFT445IU	Meat Product Technology	4	4		
12	BTFT446IU	Technology of Coffee, Tea and Cacao	4	4		
13	BTFT447IU	Confectionery Product Technology	4	4		
14	BTFT449IU	Vegetable oil and essential oil technology	4	4		
15	BTFT316IU	Scientific Writing and Design of experiments for food science	4	4		4
16	BTFT462IU	Internship	4	4		
17	BT179IU	Thesis	4	4	4	4
18	IT135IU	Introduction to Data Science	4	4	4	

19	PH068IU	Business analytics with big data	4	4	4	4
20	PH059IU	Business analytics with big data laboratory	4	4	4	4

4. Miền năng lực 4: An toàn

* Đánh giá năng lực thành phần theo 8 bậc của Khung năng lực số (từ bậc 1 đến bậc 8)

STT	Mã MH	Tên MH (Tiếng Anh)	Năng lực thành phần			
			NLTP 4.1	NLTP 4.2	NLTP 4.3	NLTP 4.4
1	BTFT312IU	Food Laws and Standards	4	4	4	4
2	BTFT458IU	Practice in Food Product Development and Marketing	4	4		
3	BTFT462IU	Internship	4	4		
4	BT179IU	Thesis	4	4		
5	IT135IU	Introduction to Data Science	4	4		

5. Miền năng lực 5: Giải quyết vấn đề

* Đánh giá năng lực thành phần theo 8 bậc của Khung năng lực số (từ bậc 1 đến bậc 8)

STT	Mã MH	Tên MH (Tiếng Anh)	Năng lực thành phần			
			NLTP 5.1	NLTP 5.2	NLTP 5.3	NLTP 5.4
1	BTFT355IU	Food Plant design	4	4	4	
2	BTFT316IU	Scientific Writing and Design of experiments for food science	4	4	4	
3	BTFT458IU	Practice in Food Product Development and Marketing	4	4	4	4
4	BTFT451IU	Practice in Dairy Product Technology	4	4	4	
5	BTFT452IU	Practice in Beverage Technology	4	4	4	
6	BTFT453IU	Practice in Cereal Product Technology	4	4	4	

7	BTFT455IU	Practice in Meat Product Technology	4	4	4	
8	BTFT456IU	Practice in Technology of Coffee, Tea and Cacao	4	4	4	
9	BTFT457IU	Practice in Confectionery Product Technology	4	4	4	
10	BTFT459IU	Practice in Vegetable oil and essential oil technology	4	4	4	
11	BTFT462IU	Internship	4	4	4	4
12	BT179IU	Thesis	4	4	4	
13	IT135IU	Introduction to Data Science	4	4	4	
14	PH068IU	Business analytics with big data	4	4	4	
15	PH059IU	Business analytics with big data laboratory	4	4	4	

6. Miền năng lực 6: Ứng dụng trí tuệ nhân tạo

* Đánh giá năng lực thành phần theo 8 bậc của Khung năng lực số (từ bậc 1 đến bậc 8)

STT	Mã MH	Tên MH (Tiếng Anh)	Năng lực thành phần		
			NLTP 6.1	NLTP 6.2	NLTP 6.3
1	BTFT316IU	Scientific Writing and Design of experiments for food science	4		
2	BTFT458IU	Practice in Food Product Development and Marketing	4	4	
3	BTFT462IU	Internship	4	4	4
4	BT179IU	Thesis	4	4	4
5	IT135IU	Introduction to Data Science	4		
6	PH068IU	Business analytics with big data	4	4	4
7	PH059IU	Business analytics with big data laboratory	4	4	4

II. Phương pháp đánh giá chuẩn đầu ra khung năng lực số

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
1. Khai thác dữ liệu và thông tin	NLTP 1.1	BTFT461IU - Food Physics and Colloids	Thuyết trình nhóm/Bài tập nhóm
		BTFT157IU- Food Sustainability	Thuyết trình nhóm/Bài tập nhóm
		BTFT355IU- Food Plant design	Thuyết trình nhóm/Bài tập nhóm
		BTFT457IU- Practice in Food Sensory Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT438IU- Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT411IU- Post – harvest Technologies	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
	NLTP 1.2	BTFT461IU - Food Physics and Colloids	Thuyết trình nhóm/Bài tập nhóm
		BTFT157IU- Food Sustainability	Thuyết trình nhóm/Bài tập nhóm
		BTFT355IU- Food Plant design	Thuyết trình nhóm/Bài tập nhóm
		BTFT457IU- Practice in Food Sensory Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT438IU- Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT411IU- Post – harvest Technologies	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
	NLTP 1.3	BTFT461IU - Food Physics and Colloids	Thuyết trình nhóm/Bài tập nhóm
		BTFT157IU- Food Sustainability	Thuyết trình nhóm/Bài tập nhóm
		BTFT355IU- Food Plant design	Thuyết trình nhóm/Bài tập nhóm
		BTFT457IU- Practice in Food Sensory Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT438IU- Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
2. Giao tiếp và hợp tác trong môi trường số		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT411IU- Post – harvest Technologies	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
	NLTP 2.1	BTFT331IU- Food Unit Operations 1	Thuyết trình nhóm/Bài tập nhóm
		BTFT332IU- Food Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT236IU- Enzyme and Food Fermentation	Thuyết trình nhóm/Bài tập nhóm
		BTFT306IU- Food Packaging and Food Additives	Thuyết trình nhóm/Bài tập nhóm
		BTFT334IU- Food Unit Operations 2	Thuyết trình nhóm/Bài tập nhóm
		BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT441IU- Dairy Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT442IU- Beverage Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT443IU- Cereal Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT445IU- Meat Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT446IU- Technology of Coffee, Tea and Cacao	Thuyết trình nhóm/Bài tập nhóm
		BTFT447IU- Confectionery Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT449IU- Vegetable oil and essential oil technology	Thuyết trình nhóm/Bài tập nhóm
	NLTP 2.2	BTFT331IU- Food Unit Operations 1	Thuyết trình nhóm/Bài tập nhóm
		BTFT332IU- Food Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT236IU- Enzyme and Food Fermentation	Thuyết trình nhóm/Bài tập nhóm
		BTFT306IU- Food Packaging and Food Additives	Thuyết trình nhóm/Bài tập nhóm
		BTFT334IU- Food Unit	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
		Operations 2	
		BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT441IU- Dairy Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT442IU- Beverage Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT443IU- Cereal Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT445IU- Meat Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT446IU- Technology of Coffee, Tea and Cacao	Thuyết trình nhóm/Bài tập nhóm
		BTFT447IU- Confectionery Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT449IU- Vegetable oil and essential oil technology	Thuyết trình nhóm/Bài tập nhóm
	NLTP 2.3	BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 2.4	BTFT331IU- Food Unit Operations 1	Thuyết trình nhóm/Bài tập nhóm
		BTFT332IU- Food Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT236IU- Enzyme and Food Fermentation	Thuyết trình nhóm/Bài tập nhóm
		BTFT306IU- Food Packaging and Food Additives	Thuyết trình nhóm/Bài tập nhóm
		BTFT334IU- Food Unit Operations 2	Thuyết trình nhóm/Bài tập nhóm
		BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT441IU- Dairy Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT442IU- Beverage Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT443IU- Cereal Product Technology	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
		BTFT445IU- Meat Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT446IU- Technology of Coffee, Tea and Cacao	Thuyết trình nhóm/Bài tập nhóm
		BTFT447IU- Confectionery Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT449IU- Vegetable oil and essential oil technology	Thuyết trình nhóm/Bài tập nhóm
	NLTP 2.5	BTFT312IU- Food Laws and Standards	Thi cuối kỳ
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		IT135IU- Introduction to Data Science	Thi cuối kỳ
		PH068IU- Business analytics with big data	Thi cuối kỳ
		PH059IU- Business analytics with big data laboratory	Thi cuối kỳ
	NLTP 2.6	BTFT312IU- Food Laws and Standards	Thi cuối kỳ
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		IT135IU- Introduction to Data Science	Thi cuối kỳ
		PH068IU- Business analytics with big data	Thi cuối kỳ
		PH059IU- Business analytics with big data laboratory	Thi cuối kỳ
		BTFT312IU- Food Laws and Standards	Thi cuối kỳ
3. Sáng tạo nội dung số	NLTP 3.1	BTFT331IU- Food Unit Operations 1	Thuyết trình nhóm/Bài tập nhóm
		BTFT332IU- Food Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT236IU- Enzyme and Food Fermentation	Thuyết trình nhóm/Bài tập nhóm
		BTFT306IU- Food Packaging and Food Additives	Thuyết trình nhóm/Bài tập nhóm
		BTFT334IU- Food Unit Operations 2	Thuyết trình nhóm/Bài tập nhóm
		BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
		BTFT441IU- Dairy Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT442IU- Beverage Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT443IU- Cereal Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT445IU- Meat Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT446IU- Technology of Coffee, Tea and Cacao	Thuyết trình nhóm/Bài tập nhóm
		BTFT447IU- Confectionery Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT449IU- Vegetable oil and essential oil technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 3.2	BTFT331IU- Food Unit Operations 1	Thuyết trình nhóm/Bài tập nhóm
		BTFT332IU- Food Analysis	Thuyết trình nhóm/Bài tập nhóm
		BTFT236IU- Enzyme and Food Fermentation	Thuyết trình nhóm/Bài tập nhóm
		BTFT306IU- Food Packaging and Food Additives	Thuyết trình nhóm/Bài tập nhóm
		BTFT334IU- Food Unit Operations 2	Thuyết trình nhóm/Bài tập nhóm
		BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT441IU- Dairy Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT442IU- Beverage Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT443IU- Cereal Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT445IU- Meat Product	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
		Technology	
		BTFT446IU- Technology of Coffee, Tea and Cacao	Thuyết trình nhóm/Bài tập nhóm
		BTFT447IU- Confectionery Product Technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT449IU- Vegetable oil and essential oil technology	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 3.3	BTFT312IU- Food Laws and Standards	Thi cuối kỳ
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thi cuối kỳ
		PH068IU- Business analytics with big data	Thi cuối kỳ
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 3.4	BTFT312IU- Food Laws and Standards	Thi cuối kỳ
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thi cuối kỳ
		PH068IU- Business analytics with big data	Thi cuối kỳ
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
4. An toàn	NLTP 4.1	BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
	NLTP 4.2	IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
	NLTP 4.3	BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
	NLTP 4.4	BTFT312IU- Food Laws and Standards	Thuyết trình nhóm/Bài tập nhóm
5. Giải quyết vấn đề	NLTP 5.1	BTFT355IU- Food Plant design	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT451IU- Practice in Dairy Product Technology	Báo cáo kiến tập
		BTFT452IU- Practice in Beverage Technology	Báo cáo kiến tập
		BTFT453IU- Practice in Cereal Product Technology	Báo cáo kiến tập
		BTFT455IU- Practice in Meat Product Technology	Báo cáo kiến tập
		BTFT456IU- Practice in Technology of Coffee, Tea and Cacao	Báo cáo kiến tập
		BTFT457IU- Practice in Confectionery Product Technology	Báo cáo kiến tập
		BTFT459IU- Practice in Vegetable oil and essential oil technology	Báo cáo kiến tập
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
	NLTP 5.2	big data laboratory	
		BTFT355IU- Food Plant design	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT451IU- Practice in Dairy Product Technology	Báo cáo kiến tập
		BTFT452IU- Practice in Beverage Technology	Báo cáo kiến tập
		BTFT453IU- Practice in Cereal Product Technology	Báo cáo kiến tập
		BTFT455IU- Practice in Meat Product Technology	Báo cáo kiến tập
		BTFT456IU- Practice in Technology of Coffee, Tea and Cacao	Báo cáo kiến tập
		BTFT457IU- Practice in Confectionery Product Technology	Báo cáo kiến tập
		BTFT459IU- Practice in Vegetable oil and essential oil technology	Báo cáo kiến tập
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 5.3	BTFT355IU- Food Plant design	Thuyết trình nhóm/Bài tập nhóm
		BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT451IU- Practice in Dairy Product Technology	Báo cáo kiến tập
		BTFT452IU- Practice in Beverage Technology	Báo cáo kiến tập
		BTFT453IU- Practice in Cereal Product Technology	Báo cáo kiến tập

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
		BTFT455IU- Practice in Meat Product Technology	Báo cáo kiến tập
		BTFT456IU- Practice in Technology of Coffee, Tea and Cacao	Báo cáo kiến tập
		BTFT457IU- Practice in Confectionery Product Technology	Báo cáo kiến tập
		BTFT459IU- Practice in Vegetable oil and essential oil technology	Báo cáo kiến tập
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 5.4	BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
6. Ứng dụng trí tuệ nhân tạo	NLTP 6.1	BTFT316IU- Scientific Writing and Design of experiments for food science	Thuyết trình nhóm/Bài tập nhóm
		BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 6.2	BTFT458IU- Practice in Food Product Development and Marketing	Thuyết trình nhóm/Bài tập nhóm
		BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		IT135IU- Introduction to Data Science	Thuyết trình nhóm/Bài tập nhóm
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm

Miền năng lực	Năng lực thành phần (NLTP)	Môn học (Mã môn- Tên môn)	Hình thức đánh giá
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm
	NLTP 6.3	BTFT462IU- Internship	Bài báo cáo
		BT179IU- Thesis	Bài báo cáo
		PH068IU- Business analytics with big data	Thuyết trình nhóm/Bài tập nhóm
		PH059IU- Business analytics with big data laboratory	Thuyết trình nhóm/Bài tập nhóm



Phụ lục 3
BẢNG MÔ TẢ SỐ TÍN CHỈ THỰC TẬP CỦA CHƯƠNG TRÌNH ĐÀO TẠO
ĐƯỢC THỂ HIỆN CỤ THỂ THEO MÔN HỌC ĐỂ ĐẢM BẢO
8 TÍN CHỈ THỰC TẬP THEO QUY ĐỊNH TẠI THÔNG TƯ 17/2021/TT-BGDĐT
(Kèm theo Quyết định số 1101/QĐ-ĐHQT ngày 04 tháng 9 năm 2025
của Hiệu trưởng Trường Đại học Quốc tế)

Theo Thông tư số 17/2021/TT-BGDĐT về chương trình đào tạo kỹ sư, CTĐT ngành Công nghệ Thực phẩm đã thỏa yêu cầu 150 tín chỉ bao gồm tối thiểu 8 tín chỉ thực tập phân bố cụ thể ở những môn học thực hành 1 tín chỉ được tổ chức theo hình thức cụ thể:

- 3 buổi thực hành – 15 tiết được thực hiện trong PTN của Bộ môn (tương đương 0.5 tín chỉ): tính vào tín chỉ thực hành.

- 3 buổi được thực hiện theo hình thức đi kiến tập hoặc mời DN về đánh giá chất lượng sản phẩm của sinh viên thực hiện môn học này. Việc đưa SV đi kiến tập tại các công ty hoặc mời DN về đánh giá các sản phẩm của SV được quy đổi là 0.5 tín chỉ; tính vào tín chỉ thực tập.

STT	Môn học	Số tín chỉ	Ghi chú
1	Internship	6	Bắt buộc
2	Practice in Food Product Development and Marketing	0.5	Bắt buộc
3	Practice in Dairy Product Technology	0.5	Chọn 4/ 7 môn học tự chọn
4	Practice in Beverage Technology	0.5	
5	Practice in Cereal Product Technology	0.5	
6	Practice in Meat Product Technology	0.5	
7	Practice in Technology of Coffee, Tea and Cacao	0.5	
8	Practice in Vegetable oil and essential oil technology	0.5	
9	Practice in Confectionery Product Technology	0.5	
Tổng cộng		8.5	

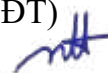


ĐẠI HỌC QUỐC GIA
THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC QUỐC TẾ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Phụ lục 4
ĐỀ CƯƠNG CHI TIẾT CÁC MÔN HỌC
*(Kèm theo Quyết định số 1101/QĐ-ĐHQT ngày 04 tháng 9 năm 2025
của Hiệu trưởng Trường Đại học Quốc tế)*

(Sắp xếp đề cương theo đúng thứ tự môn học theo Bảng 9 - Các môn thuộc CTĐT)



ĐẠI HỌC QUỐC GIA THÀNH PHỐ HỒ CHÍ MINH
KHOA CHÍNH TRỊ - HÀNH CHÍNH

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC
(Dành cho trường Đại học Quốc Tế)

1. Thông tin tổng quát

- Tên môn học:

+ Tiếng Việt

+ Tiếng Anh

- Mã số môn học: PE015IU

- Thuộc khối kiến thức/kỹ năng:

☒ Kiến thức cơ bản/giáo dục đại cương

☐ Kiến thức chuyên ngành

☐ Môn học chuyên về kỹ năng chung

- Số tín chỉ:

+ Lý thuyết

+ Thực hành (thuyết trình)

- Môn học tiên quyết: Không

- Môn học trước: Không

- Môn học song hành: Không

Triết học Mác-Lênin

Philosophy of Marxism – Leninism

☐ Kiến thức cơ sở ngành

☐ Kiến thức khác

☐ Môn học đồ án/luận văn tốt nghiệp

03

30 (trên lớp)

15 (trên lớp)

90 (về nhà)

2. Mô tả môn học

(vị trí của môn học đối với chương trình đào tạo (CTĐT), những mục đích và nội dung chính yếu của môn học)

Môn học thuộc phần kiến thức giáo dục đại cương thuộc mảng lý luận chính trị, trang bị cho sinh viên những kiến thức cơ bản về triết học Mác-Lênin. Môn học nghiên cứu những quy luật vận động, phát triển chung nhất của tự nhiên, xã hội, tư duy; gồm 3 chương: Triết học và vai trò của triết học trong đời sống xã hội, chủ nghĩa duy vật biện chứng và chủ nghĩa duy vật lịch sử.

3. Tài liệu học tập

(Các giáo trình, tài liệu tham khảo, các phần mềm, không quá 5 cuốn)

Giáo trình:

[1] Bộ Giáo dục và Đào tạo (2021), *Giáo trình Triết học Mác – Lênin*, (dùng cho khối không chuyên ngành lý luận chính trị), Nxb. Chính trị quốc gia, Hà Nội.

[2] Bộ Giáo dục và Đào tạo (2012), *Giáo trình Những Nguyên lý cơ bản của chủ nghĩa Mác – Lênin*, Nxb. Chính trị quốc gia, Hà Nội.

[3] Hội đồng Trung ương (2008), *Giáo trình Triết học Mác-Lênin*, Nxb. Chính trị quốc gia, Hà Nội.

Tài liệu khác:

[1] Triết học Mác-Lênin (Bộ câu hỏi hướng dẫn ôn thi môn triết học), Nxb Sự thật, Hà Nội, 1980

[2] Triết học Mác-Lênin, tập 1 và 2, Nxb Sách giáo khoa Mác - Lênin, Hà Nội, 1995



Phần mềm:

4. Mục tiêu môn học

(các mục tiêu tổng quát của môn học, thể hiện sự liên quan với các chuẩn đầu ra (X.x.x) của CTĐT và trình độ năng lực (TĐNL) được phân bổ cho môn học)

Mục tiêu (1)	Mô tả mục tiêu (2)	CDR của môn học tương ứng CTĐT (3)	TĐNL tương ứng CTĐT (4)
G1	4.1 Về kiến thức Sinh viên hiểu được vai trò của triết học Mác - Lênin trong đời sống xã hội và những nội dung cơ bản về: Chủ nghĩa duy vật biện chứng và chủ nghĩa duy vật lịch sử.		
G2	4.2. Về kỹ năng Sinh viên vận dụng, phân tích được những tri thức cơ bản của triết học Mác - Lênin về chủ nghĩa duy vật biện chứng và chủ nghĩa duy vật lịch sử vào việc nhận thức, lý giải các hiện tượng, quy luật trong đời sống xã hội Việt Nam và thế giới.		
G3	4.3. Về thái độ/năng lực tự chủ và trách nhiệm Sinh viên đánh giá được giá trị, tính khoa học cách mạng và nhân văn của triết học Mác - Lênin đối với thực tiễn Việt Nam và nhân loại		

(1): Ký hiệu mục tiêu của môn học.

(2): Mô tả các mục tiêu bao gồm các động từ chủ động, các chủ đề CDR (X.x.x) và bối cảnh áp dụng tổng quát

(3), (4): Ký hiệu CDR của CTĐT và TĐNL tương ứng được phân bổ cho môn học.

5. Chuẩn đầu ra môn học

(các mục cụ thể hay CDR của môn học và mức độ giảng dạy I, T, U)

CDR (1)	Mô tả CDR (2)	Mức độ giảng dạy (3)
G1.1	Sinh viên hiểu những tri thức cơ bản về triết học nói chung, những điều kiện ra đời của triết học Mác – Lênin. Đồng thời giúp sinh viên phân tích, đánh giá được thực chất cuộc cách mạng trong triết học do C.Mác và Ph.Ăngghen thực hiện và các giai đoạn hình thành, phát triển triết học Mác – Lênin; Vai trò của triết học Mác trong đời sống xã hội và trong thời đại ngày nay.	I, T
G1.2	Sinh viên hiểu được quan điểm của chủ nghĩa duy vật biện chứng về vật chất, các hình thức, phương thức tồn tại của vật chất; nguồn gốc, bản chất của ý thức; mối quan hệ biện chứng giữa vật chất và ý thức.	I.T. U

	Sinh viên hiểu được những nội dung cơ bản của phép biện chứng duy vật; ý nghĩa phương pháp luận trong nhận thức và thực tiễn. Sinh viên hiểu những kiến thức cơ bản về lý luận nhận thức của chủ nghĩa duy vật biện chứng; ý nghĩa phương pháp luận.	
G1.3	Sinh viên hiểu những kiến thức về học thuyết hình thái kinh tế - xã hội; vận dụng ý nghĩa phương pháp luận vào thực tiễn của Việt Nam. Giúp sinh viên hiểu được những quan điểm cơ bản của triết học Mác – Lênin về giai cấp; về nhà nước và cách mạng xã hội; về dân tộc, quan hệ giai cấp - dân tộc – nhân loại; ý nghĩa phương pháp luận trong nhận thức những vấn đề cơ bản của cách mạng Việt Nam. Sinh viên hiểu những quan điểm cơ bản của triết học Mác – Lênin về con người, về ý thức xã hội, sự vận dụng vào cách mạng Việt Nam.	I, T, U
G2.1	Sinh viên phân tích mang tính khái quát hóa để rút ra <i>Từ khóa tri thức</i> đối với mỗi nội dung và tư duy có hệ thống.	U
G2.2	Sinh viên vận dụng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn.	U
G2.3	Sinh viên vận dụng trong giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc.	U
G3.1	Sinh viên phân tích, đánh giá được những nền tảng khoa học và cách mạng của chủ nghĩa duy vật biện chứng và chủ nghĩa duy vật lịch sử.	U
G3.2	Sinh viên vận dụng lập trường mácxít nhằm đấu tranh chống lại các quan điểm sai trái, xuyên tạc triết học Mác – Lênin.	U

(1): Ký hiệu CĐR của môn học

(2): Mô tả CĐR, bao gồm các động từ chủ động, các chủ đề CĐR ở cấp độ 4 (X.x.x.x) và bối cảnh áp dụng cụ thể.

(3): I (Introduce): giới thiệu; T (Teach): dạy; U (Utilize): sử dụng

6. Đánh giá môn học

(các thành phần, các bài đánh giá, các tiêu chí đánh giá, chuẩn đánh giá, và tỷ lệ đánh giá, thể hiện sự tương quan với các CĐR của môn học)

Thành phần đánh giá (1)	Bài đánh giá (2)	CĐR môn học (3)	Tỷ lệ % (4)
A1. Đánh giá quá trình	- Chuyên cần (A1.1) - Tham gia học tập trên lớp tích cực, hăng hái phát biểu (A1.2) - Thuyết trình nhóm (A1.3)	G1.1, G1.2- G1.3, G2.1, G2.2- G2.3 G3.1-	30%

		G3.2	
A2. Đánh giá giữa kỳ	Hình thức tự luận hoặc trắc nghiệm (A2.1)	G1.1 G2.1- G2.2, G3.1- G3.2	20%
A3. Đánh giá cuối kỳ	- Hình thức tự luận, sinh viên được sử dụng tài liệu giấy, không sử dụng thiết bị nối mạng khi làm bài thi: 75 phút (A3.1) - Điểm thưởng (tối đa 20% của điểm cuối kỳ)	G1.2- G1.3, G2.1- G2.2, G3.1- G3.2	50%

(1): các thành phần đánh giá của môn học.

(2): các bài đánh giá

(3): các CĐR được đánh giá.

(4): tiêu chí đánh giá.

(5): chuẩn đánh giá

(6): Tỷ lệ điểm của các bài đánh giá trong tổng điểm môn học

7. Kế hoạch giảng dạy chi tiết

(các nội dung giảng dạy theo buổi học, thể hiện sự tương quan với các CĐR của môn học, các hoạt động dạy và học (ở lớp, ở nhà) và các bài đánh giá của môn học)

Lý thuyết

1	Nội dung (2)	CĐR môn học (3)	Hoạt động dạy và học (4)	Bài đánh giá (5)
1/3 tiết	Giới thiệu về môn học Chương 1 TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI I. triết học và vấn đề cơ bản của triết học 1. Khái lược về triết học - Nguồn gốc ra đời của triết học 1. Khái lược về triết học	G1.1	Hoạt động dạy: - Giới thiệu đề cương môn học - Giới thiệu nội dung đề tài thuyết trình nhóm) - Trình chiếu, thuyết giảng Hoạt động học: - Chia nhóm - Giới thiệu nhóm học tập - Nghe giảng, phát biểu - Đọc trước mục I, II của chương 1	A1.1, A1.2, A2.1, A3.1
2/3 tiết	Chương 1 TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI	G1.1 G2.2 G2.3	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học:	A1.1, A1.2, A2.1, A3.1

	I. Triết học và vấn đề cơ bản của triết học (tt) 1. Khái lược về triết học - Khái niệm triết học 2. Vấn đề cơ bản của triết học		- Nghe giảng, phát biểu - Phác thảo nội dung thuyết trình nhóm - Đọc trước phần I, mục 3, chương 1.	
3/3 tiết	Chương 1 TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI (tiếp theo) I. Triết học và vấn đề cơ bản của triết học (tt) 3. Biện chứng và siêu hình	G1.1 G2.2 G2.3	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu - Phác thảo nội dung thuyết trình nhóm - Đọc trước phần II chương 1.	A1.1, A1.2, A2.1, A3.1
4/3 tiết	Chương 1 TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI (tiếp theo) II. Triết học Mác - Lênin và vai trò của triết học Mác - Lênin trong đời sống xã hội 1. Sự ra đời và phát triển của triết học Mác - Lênin - Giới thiệu nội dung mục 2.3	G1.1 G2.2 G2.3	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu - Phác thảo nội dung thuyết trình nhóm - Đọc trước phần I chương 1.	A1.1, A1.2, A2.1, A3.1
5/3 tiết	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG I. Vật chất và ý thức 1. Vật chất và các hình thức tồn tại của vật chất 2. Nguồn gốc, bản chất và kết cấu của ý thức	G1.2 G2.1 G2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước mục 3 phần I chương 2.	A1.1, A1.2, A2.1, A3.1
6/3 tiết	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG I. Vật chất và ý thức 3. Mối quan hệ giữa vật chất và ý thức II. Phép biện chứng duy vật 1. Hai loại hình biện chứng và phép biện chứng duy vật	G1.2 G2.1 G2.2 G3.1 G3.2 G1.3	- Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước mục 1,2 phần II chương 2.	A1.1, A1.2, A2.1, A3.1
7/3 tiết	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN	G1.3 G2.1	Hoạt động dạy: - Trình chiếu, thuyết	A1.1, A1.2,



	CHỨNG (tiếp theo) II. Phép biện chứng duy vật 2. Nội dung của phép biện chứng duy vật <i>a. Hai nguyên lý.</i> - Nguyên lý về mối liên hệ phổ biến - Nguyên lý về sự phát triển - Kiểm tra giữa kỳ	G.2.2 G3.1 G3.2	giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước mục 2 phần II chương 2.	A3.1
8/3 tiết	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG (tiếp theo) II. Phép biện chứng duy vật 2. Nội dung của phép biện chứng duy vật <i>c. Các cặp phạm trù của PBCDV</i> - Phạm trù cái riêng – cái chung - Phạm trù nguyên	G1.3 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước mục 2 phần II chương 2.	A1.1, A1.2, A3.1
9/3 tiết	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG (tiếp theo) II. Phép biện chứng duy vật 2. Nội dung của phép biện chứng duy vật <i>c. Ba quy luật:</i> - Quy luật Lượng – Chất. - Quy luật thống nhất và đấu tranh của các mặt đối lập	G1.3 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước phần III chương 2.	A1.1, A1.2, A3.1
10/3 tiết	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG (tiếp theo) III. Lý luận nhận thức 1. Các nguyên tắc của lý luận nhận thức duy vật biện chứng 2. Nguồn gốc, bản chất của nhận thức 3. Thực tiễn và vai trò của thực tiễn đối với nhận thức - Giới thiệu mục 4.5	G1.3 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước phần I chương 3.	A1.1, A1.2, A3.1
11/3 tiết	Chương 3 CHỦ NGHĨA DUY VẬT LỊCH SỬ I. Học thuyết hình thái kinh tế - xã hội 1. Sản xuất vật chất là cơ sở của sự tồn tại và phát triển xã hội	G1.4 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình.	A1.1, A1.2, A3.1

	2. Biện chứng giữa lực lượng sản xuất và quan hệ sản xuất		- Đọc trước mục 3.4 phần I chương 3.	
12/3 tiết	Chương 3 CHỦ NGHĨA DUY VẬT LỊCH SỬ I. Học thuyết hình thái kinh tế - xã hội 3. Biện chứng giữa cơ sở hạ tầng và kiến trúc thượng tầng của xã hội 4. Sự phát triển các hình thái kinh tế - xã hội là một quá trình lịch sử - tự nhiên	G1.4 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước phần II và phần III chương 3.	A1.1, A1.2, A1.3, A3.1
13/3 tiết	Chương 3 CHỦ NGHĨA DUY VẬT LỊCH SỬ (tiếp theo) -Giới thiệu các khái niệm II. Giai cấp và dân tộc 1. Vấn đề giai cấp và đấu tranh giai cấp 2. Dân tộc 3. Mối quan hệ giai cấp - dân tộc - nhân loại III. Nhà nước và cách mạng xã hội 1. Nhà nước	G1.4 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước phần IV chương 3.	A1.1, A1.2, A1.3, A3.1
14/3 tiết	Chương 3 CHỦ NGHĨA DUY VẬT LỊCH SỬ (tiếp theo) IV. Ý thức xã hội 1. Khái niệm tồn tại xã hội và các yếu tố cơ bản của tồn tại xã hội 2. Ý thức xã hội và kết cấu của ý thức xã hội	G1.4 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng Hoạt động học: - Nghe giảng, phát biểu, làm việc nhóm, thuyết trình. - Đọc trước phần V chương 3.	A1.1, A1.2, A1.3, A3.1
15/3 tiết	Chương 3 CHỦ NGHĨA DUY VẬT LỊCH SỬ (tiếp theo) V. Triết học về con người 1. Khái niệm con người và bản chất con người - Giới thiệu mục 2.3.4 - Ôn tập thi cuối kỳ	G1.4 G2.1 G.2.2 G3.1 G3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng - Ôn tập thi cuối kỳ Hoạt động học: - Thuyết trình, thảo luận nhóm - Nghe giảng, ôn tập	A1.1, A1.2, A1.3, A3.1

(1): Thông tin về tuần/buổi học.

(2): Liệt kê nội dung giảng dạy theo chương, mục

(3): Liệt kê CĐR liên quan của môn học (ghi ký hiệu Gx.x),

(4): Liệt kê các hoạt động dạy và học (ở lớp, ở nhà), bao gồm đọc trước tài liệu

(nếu có yêu cầu)

(5): Liệt kê các bài đánh giá liên quan (ghi ký hiệu Ax.x)

Thực hành

Tuần/Buổi học (1)	Nội dung (2)	CĐR môn học (3)	Hoạt động dạy và học (4)	Bài đánh giá (5)
...	Bài thực hành 1: ...	Gx.x ...	Dạy: ... Học ở lớp: ... Học ở nhà: ...	Ax.x ...

(1): Thông tin về tuần/buổi học. (2): Liệt kê nội dung thực hành theo bài thực hành

(3): Liệt kê CĐR liên quan của môn học (ghi ký hiệu Gx.x),

(4): Liệt kê các hoạt động dạy và học (ở lớp, ở nhà), bao gồm đọc trước tài liệu (nếu có yêu cầu)

(5): Liệt kê các bài đánh giá liên quan (ghi ký hiệu Ax.x)

8. Quy định của môn học

(Các quy định của môn học (nếu có), thí dụ: sinh viên không nộp bài tập và các báo cáo đúng hạn, được coi như không nộp bài; sinh viên vắng 2 buổi thực hành trở lên, không được phép dự thi cuối kỳ ...)

- Quy định về Bài thuyết trình nhóm:

- Thành lập nhóm: Số lượng sinh viên tùy vào sĩ số lớp, do giảng viên quy định. Hạn chót đăng ký đề tài nhóm quản lý trên forum là buổi 2 hoặc trực tiếp nộp cho GV buổi 1.
- Các nhóm thuyết trình theo thứ tự được phân công. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan khi thuyết trình.
- Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV

- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định thì sẽ bị điểm 0 chuyên cần.

9. Phụ trách môn học

- Khoa/Bộ môn: Bộ môn Lý luận và Khoa học chính trị, Khoa Chính trị - Hành chính

- Địa chỉ và email liên hệ: daotao.spas@vnuhcm.edu.vn

KT. Trưởng Bộ môn
Phó trưởng Bộ môn



TS. Mạc Thị Khánh Trinh

Tp. Hồ Chí Minh, ngày 01 tháng 10 năm 2023

KT. TRƯỞNG KHOA
PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

(Dành cho Trường Đại học Quốc tế, ĐHQG-HCM)

1. Thông tin tổng quát

- Tên môn học:

+ Tiếng Việt

+ Tiếng Anh

- Mã số môn học:

- Thuộc khối kiến thức/kỹ năng:

☒ Kiến thức cơ bản/giáo dục đại cương

☐ Kiến thức chuyên ngành

☐ Môn học chuyên về kỹ năng chung

- Số tín chỉ:

+ Lý thuyết

+ Thực hành (thuyết trình)

- Môn học tiên quyết:

- Môn học trước:

- Môn học song hành:

Kinh tế chính trị Mác - Lênin

Political economics of Marxism and
Leninism

PE016IU

☐ Kiến thức cơ sở ngành

☐ Kiến thức khác

☐ Môn học đồ án/luận văn tốt nghiệp

02

21 (trên lớp)

09 (trên lớp)

60 (về nhà)

Triết học Mác – Lênin

2. Mô tả môn học

Môn học này cung cấp cho sinh viên những phân tích của Các Mác về phương thức sản xuất tư bản chủ nghĩa và chỉ ra giới hạn phát triển của phương thức sản xuất này. V.I.Lênin bổ sung học thuyết kinh tế chính trị của Mác trong tình hình mới – giai đoạn chủ nghĩa tư bản độc quyền thống trị. Dựa vào nội dung cơ bản của kinh tế chính trị Mác – Lênin, sinh viên được tìm hiểu về mô hình kinh tế tổng quát của Việt Nam trong thời kỳ quá độ - Kinh tế thị trường định hướng xã hội chủ nghĩa. Bên cạnh đó, môn học này cũng cung cấp cho sinh viên về tính tất yếu phải công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế trong bối cảnh CMCN lần thứ 4 và toàn cầu hóa diễn ra mạnh mẽ.

3. Tài liệu học tập



3.1. Giáo trình

- [1] Bộ Giáo dục và Đào tạo (2021), *Giáo trình Kinh tế chính trị Mác – Lênin*, (dùng cho khối không chuyên ngành lý luận chính trị) Nxb. Chính trị quốc gia, Hà Nội.
- [2] Bộ Giáo dục và Đào tạo (2012), *Giáo trình Những Nguyên lý cơ bản của chủ nghĩa Mác – Lênin*, Nxb. Chính trị quốc gia, Hà Nội.

3.2. Tài liệu khác

- [3] Các Mác, *Tư bản*, NXB Chính trị quốc gia Sự thật, Hà Nội, 2018
- [4] Klaus Schwab (2018), *Cách mạng công nghiệp lần thứ tư*, NXB Thế giới.
- [5] V.I.Lênin, Toàn tập – tập 27, NXB Chính trị Quốc gia Sự thật, 2005

3.3. Phần mềm: N/A

4. Mục tiêu môn học

(các mục tiêu tổng quát của môn học, thể hiện sự liên quan với các chuẩn đầu ra (X.x.x) của CTĐT và trình độ năng lực (TĐNL) được phân bổ cho môn học)

Mục tiêu (1)	Mô tả mục tiêu (2)	CĐR của môn học tương ứng CTĐT (3)	TĐNL tương ứng CTĐT (4)
G1	4.1 Về kiến thức Sinh viên hiểu được sự vận động và phát triển của phương thức sản xuất tư bản chủ nghĩa và giới hạn của nó theo phân tích của Mác – Lênin. Sinh viên cũng được hiểu rõ về mô hình kinh tế của Việt Nam thời kỳ quá độ lên chủ nghĩa xã hội đó là kinh tế thị trường định hướng xã hội chủ nghĩa. Ngoài ra, sinh viên cũng hiểu rõ về công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế của Việt Nam.		3.5
G2	4.2. Về kỹ năng Sinh viên vận dụng những kiến thức đã học có thể nhận định, phân tích và đánh giá các vấn đề kinh tế chính trị trong nước và quốc tế. Vận dụng kiến thức kinh tế chính trị Mác – Lênin để		3.0

	đánh giá chủ nghĩa tư bản đương đại cũng như phân tích, đánh giá được mô hình kinh tế của Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội. Ngoài ra, sinh viên còn vận dụng kiến thức kinh tế chính trị để phân tích quá trình công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế của Việt Nam.		
G3	4.3. Về thái độ/năng lực tự chủ và trách nhiệm Vận dụng kiến thức kinh tế chính trị Mác – Lênin để có thái độ tích cực trong việc góp phần vào xây dựng và bảo vệ con đường chủ nghĩa xã hội của Việt Nam. Đấu tranh bác bỏ những luận điệu xuyên tạc, chống phá Chủ nghĩa Mác – Lênin và sự lãnh đạo của Đảng Cộng sản Việt Nam.		4.0

(1): Ký hiệu mục tiêu của môn học. (2): Mô tả các mục tiêu bao gồm các động từ chủ động, các chủ đề CDR (X.x.x) và bối cảnh áp dụng tổng quát

(3), (4): Ký hiệu CDR của CTĐT và TDNL tương ứng được phân bổ cho môn học.

5. Chuẩn đầu ra môn học

CDR (1)	Mô tả CDR (2)	Mức độ giảng dạy (3)
G1.1	G1.1.1. Hiểu rõ lịch sử của kinh tế chính trị và kinh tế chính trị Mác – Lênin.	I, T
	G1.1.2 Hiểu rõ về mục tiêu, phương pháp và chức năng của KTCT Mác - Lênin	I.T
G1.2	G1.2.1. Hiểu rõ hai thuộc tính của hàng hóa và cấu trúc của giá trị hàng hóa	I.T.U
	G1.2.2. Hiểu về mặt chất và mặt lượng của giá trị hàng hóa và các nhân tố ảnh hưởng đến mặt lượng giá trị hàng hóa	I, T
	G1.2.3. Hiểu rõ mối quan hệ giữa giá trị hàng hóa và tiền tệ	I, T, U
	G1.2.4. Hiểu về thị trường và các quy luật cơ bản của kinh tế thị trường	I, T, U

G1.3	G1.3.1. Hiểu rõ được công thức chung của tư bản và mâu thuẫn của nó	I, T
	G1.3.2. Hiểu rõ được nguồn gốc của giá trị thặng dư TBCN	I, T
	G1.3.3. Hiểu rõ hàng hóa sức lao động và tính chất đặc biệt của nó	I, T
	G1.3.4. Hiểu được bản chất và các hình thức của tiền công	I, T, U
	G1.3.5. Hiểu được các phương pháp sản xuất giá trị thặng dư TBCN	I, T
	G1.3.6. Hiểu rõ ý nghĩa của tuần hoàn và chu chuyển tư bản	I, T
	G1.3.7. Hiểu được mục đích của tích lũy tư bản	I, T, U
	G1.3.8. Hiểu rõ các hình thức biểu hiện của giá trị thặng dư TBCN là mối quan hệ của chúng	I, T
G1.4	G1.4.1. Hiểu rõ hai giai đoạn phát triển của CNTB	I, T
	G1.4.2. Hiểu được nguyên nhân hình thành CNTB độc quyền	I, T
	G1.4.3. Hiểu được 5 đặc điểm của CNTB độc quyền theo phân tích của V.I. Lênin	I, T
	G1.4.4. Hiểu được những nguyên nhân hình thành và đặc điểm của chủ nghĩa tư bản độc quyền nhà nước.	I, T
G1.5	G1.5.1. Hiểu rõ về mô hình kinh tế thị trường định hướng XHCN và các đặc trưng của nó	I, T
	G1.5.2. Hiểu rõ về vai trò của thể chế kinh tế thị trường định hướng XHCN và tại sao cần phải hoàn thiện nó	I, T
	G1.5.3. Hiểu rõ vai trò của lợi ích kinh tế và các quan hệ lợi ích kinh tế trong nền kinh tế thị trường.	I, T
G1.6	G1.6.1. Hiểu rõ lý do tại sao một quốc gia cần phải tiến hành CNH và các quốc gia CNH thành công tiêu biểu	I, T
	G1.6.2. Hiểu rõ lịch sử và đặc trưng của các cuộc CMCN và mối liên hệ giữa CMCN với CNH	I, T, U
	G1.6.3. Hiểu rõ quá trình CNH, HĐH của Việt Nam	I, T
	G1.6.4. Hiểu được tính tất yếu của Việt Nam phải hội nhập kinh tế quốc tế trong bối cảnh toàn cầu hóa	I, T
	G2.1. Vận dụng phương pháp trừu tượng hóa khoa học để phân tích các vấn đề kinh tế chính trị	U
	G2.2. Vận dụng kiến thức kinh tế chính trị Mác -	

G2	Lênin để đánh giá chủ nghĩa tư bản hiện nay và sự lựa chọn con đường tiến lên CNXH của Việt Nam	U
	G2.3. Vận dụng kiến thức về kinh tế thị trường định hướng XHCN để hiểu rõ con đường đi lên CNXH của Việt Nam từ đó đấu tranh chống lại các thế lực chống phá chủ nghĩa Mác - Lênin	U
	G2.4. Vận dụng kiến thức về CNH, HĐH và hội nhập kinh tế quốc tế để phân tích chiến lược phát triển của Việt Nam trong bối cảnh CMCN 4.0 và toàn cầu hóa diễn ra ngày càng sâu rộng	U
G3	G3.1. Vận dụng kiến thức kinh tế chính trị Mác - Lênin, đóng góp vào công cuộc xây dựng chủ nghĩa xã hội	U
	G3.2. Vận dụng kiến thức kinh tế chính trị Mác - Lênin đấu tranh chống lại các luận điệu xuyên tạc chủ nghĩa Mác - Lênin và con đường đi lên CNXH của Việt Nam	U

(1): Ký hiệu CĐR của môn học

(2): Mô tả CĐR, bao gồm các động từ chủ động, các chủ đề CĐR ở cấp độ 4 (X.x.x.x) và bối cảnh áp dụng cụ thể.

(3): I (Introduce): giới thiệu; T (Teach): dạy; U (Utilize): sử dụng

6. Đánh giá môn học

(các thành phần, các bài đánh giá, các tiêu chí đánh giá, chuẩn đánh giá, và tỷ lệ đánh giá, thể hiện sự tương quan với các CĐR của môn học)

Thành phần đánh giá (1)	Bài đánh giá (2)	CĐR môn học (3)	Tỷ lệ % (4)
A1. Đánh giá quá trình	- Chuyên cần (A1.1) - Tham gia học tập trên lớp tích cực, hăng hái phát biểu (A1.2) - Thuyết trình nhóm (A1.3)	G1.1- G1.6; G2.1 - G2.4; G3.1- G3.2	30%
A2. Đánh giá giữa kỳ	Kiểm tra tự luận: 60 phút (A2.1)	G1.1, G1.2, G1.3	20%
A3. Đánh giá cuối kỳ	Tự luận sinh viên được sử dụng tài liệu khi làm bài thi: 60 phút (A3.1)	G1.1 - G1.6; G2.1-G2.4	50%

(1): Các thành phần đánh giá của môn học. (2): Các bài đánh giá

(3): Các CĐR được đánh giá. (4): Tiêu chí đánh giá. (5): Chuẩn đánh giá

(6): Tỷ lệ điểm của các bài đánh giá trong tổng điểm môn học

NH

OA
HÀNH

★

7. Kế hoạch giảng dạy chi tiết

Tuần/Buổi học (1)	Nội dung (2)	CĐR môn học (3)	Hoạt động dạy và học (4)	Bài đánh giá (5)
1/4 tiết	Giới thiệu về môn học Chương 1 ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC – LÊNIN I. Khái quát về sự hình thành và phát triển của kinh tế chính trị Mác – Lênin. II. Đối tượng, mục đích và phương pháp nghiên cứu của kinh tế chính trị Mác – Lênin III. Chức năng của kinh tế chính trị Mác – Lênin Chương 2 HÀNG HÓA, THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THỂ THAM GIA THỊ TRƯỜNG I. Lý luận của C. Mác về sản xuất hàng hóa và hàng hóa 1. Sản xuất hàng hóa 2. Hàng hóa - <i>Khái niệm và thuộc tính của hàng hóa.</i> - <i>Tính hai mặt của lao động sản xuất hàng hóa.</i> - <i>Lượng giá trị và các nhân tố ảnh hưởng đến lượng giá trị của hàng hóa.</i>	G.1.1 G.1.2	Hoạt động dạy: - Giới thiệu về môn học, cơ cấu điểm, cách thức giảng dạy và học tập môn Kinh tế chính trị Mác – Lênin - Giới thiệu nội dung đề tài thuyết trình nhóm GHW) - Trình chiếu, thuyết giảng chương 1,2 và giải đáp thắc mắc. Hoạt động học: - Chia nhóm - Giới thiệu nhóm học tập - Nghe giảng, phát biểu, nêu thắc mắc - Đọc trước chương 2 và chương 3	A1.1 A1.2 A2.1 A3.1
	Chương 2 HÀNG HÓA, THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THỂ THAM GIA THỊ TRƯỜNG (tiếp theo)		Hoạt động dạy: - Trình chiếu, thuyết giảng, giải đáp thắc	A1.1 A1.2

2/4 tiết	3. Tiền tệ 4. Dịch vụ và quan hệ trao đổi trong trường hợp một số yếu tố khác hàng hóa thông thường ở điều kiện ngày nay II. Thị trường và nền kinh tế thị trường. 1. Khái niệm, phân loại và vai trò của thị trường. 2. Nền kinh tế thị trường và một số quy luật chủ yếu của nền kinh tế thị trường - <i>Nền kinh tế thị trường.</i> - <i>Một số quy luật kinh tế chủ yếu của nền kinh tế thị trường.</i> III. Vai trò của một số chủ thể tham gia thị trường. 1. Người sản xuất 2. Người tiêu dùng 3. Các chủ thể trung gian trong thị trường. 4. Nhà nước.	G.1.2 G.2.1	mắc - Tổng kết nội dung thuyết trình nhóm Hoạt động học: - Nghe giảng, thảo luận, phát biểu, nêu thắc mắc. - Thuyết trình nhóm GHW - Đọc trước chương 3.	A1.3 A2.1 A3.1
3/4 tiết	Chương 3 GIÁ TRỊ THẶNG DƯ TRONG NỀN KINH TẾ THỊ TRƯỜNG I. Lý luận của Các Mác về giá trị thặng dư 1. Nguồn gốc của giá trị thặng dư. - <i>Công thức chung của tư bản</i> - <i>Hàng hóa sức lao động</i> - <i>Sự sản xuất giá trị thặng dư</i> - <i>Tư bản bất biến và tư bản khả biến</i> - <i>Tiền công</i> - <i>Tuần hoàn và chu chuyển tư bản</i> 2. Bản chất của giá trị thặng dư 3. Các phương pháp sản xuất giá trị thặng dư	G.1.3 G.2.2 G.3.1 G.3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng, giải đáp thắc mắc - Tổng kết nội dung thuyết trình nhóm Hoạt động học: - Nghe giảng, thảo luận, phát biểu, nêu thắc mắc. - Thuyết trình nhóm GHW	A1.1 A1.2 A1.3 A2.1 A3.1

			- Đọc trước chương 4.	
4/4 tiết	Chương 3 GIÁ TRỊ THẶNG DƯ TRONG NỀN KINH TẾ THỊ TRƯỜNG (tiếp theo) II. Tích lũy tư bản 1. Bản chất của tích lũy tư bản. 2. Những nhân tố ảnh hưởng đến quy mô tích lũy. 3. Một số hệ quả của tích lũy tư bản. III. Các hình thức biểu hiện của giá trị thặng dư trong nền kinh tế thị trường. 1. Lợi nhuận 2. Lợi tức. 3. Địa tô TBCN	G.1.3 G.2.2 G.3.1 G.3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng, giải đáp thắc mắc - Tổng kết nội dung thuyết trình nhóm Hoạt động học: - Nghe giảng, thảo luận, phát biểu, nêu thắc mắc. - Thuyết trình nhóm GHW - Đọc trước chương 4.	A1.1 A1.2 A1.3 A2.1 A3.1
5/4 tiết	Chương 4 CẠNH TRANH VÀ ĐỘC QUYỀN TRONG NỀN KINH TẾ THỊ TRƯỜNG (tiếp theo) 1. Lý luận của V.I. Lê nin về đặc điểm kinh tế của độc quyền (tt). - <i>Xuất khẩu tư bản trở thành phổ biến</i> - <i>Cạnh tranh để phân chia thị trường thế giới là tất yếu giữa các tập đoàn độc quyền.</i> - <i>Lôi kéo, thúc đẩy các chính phủ vào việc phân định khu vực lãnh thổ ảnh hưởng là cách thức để bảo vệ lợi ích độc quyền.</i> 2. Lý luận của V.I. Lênin về đặc điểm kinh tế của độc quyền nhà nước trong CNTB	G.1.4 G.2.2 G.3.1 G.3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng, giải đáp thắc mắc - Tổng kết nội dung thuyết trình nhóm Hoạt động học: - Nghe giảng, thảo luận, phát biểu, nêu thắc mắc. - Thuyết trình nhóm GHW - Đọc trước chương 5.	A1.1 A1.2 A1.3 A3.1

	- Sự kết hợp nhân sự giữa tổ chức độc quyền và nhà nước. - Sự hình thành, phát triển sở hữu nhà nước. - Độc quyền nhà nước trở thành công cụ để nhà nước điều tiết nền kinh tế. III. Biểu hiện mới của độc quyền, độc quyền nhà nước trong điều kiện ngày nay; vai trò lịch sử của CNTB. 1. Biểu hiện mới của độc quyền 2. Biểu hiện mới của độc quyền nhà nước dưới CNTB 3. Vai trò lịch sử của CNTB			
6/4 tiết	Chương 5 KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA VÀ CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM I. Kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam 1. Khái niệm về kinh tế thị trường định hướng XHCN ở Việt Nam. 2. Tính tất yếu khách quan của việc phát triển kinh tế thị trường định hướng XHCN ở Việt Nam. 3. Đặc trưng của kinh tế thị trường định hướng XHCN ở Việt Nam. II. Hoàn thiện thể chế kinh tế thị trường định hướng XHCN ở Việt Nam 1. Sự cần thiết phải hoàn thiện thể chế kinh tế thị trường định hướng XHCN ở Việt Nam. 2. Nội dung hoàn thiện thể chế kinh tế thị trường định hướng XHCN ở	G.1.5 G.2.3 G.3.1 G.3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng, giải đáp thắc mắc - Tổng kết nội dung thuyết trình nhóm Hoạt động học: - Nghe giảng, thảo luận, phát biểu, nêu thắc mắc. - Thuyết trình nhóm GHW - Đọc trước chương 6.	A1.1 A1.2 A1.3 A3.1



	Việt Nam. III. Các quan hệ lợi ích kinh tế ở Việt Nam. 1. Lợi ích kinh tế và quan hệ lợi ích kinh tế. - <i>Lợi ích kinh tế</i>			
7/4 tiết	Chương 5 KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA VÀ CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM (tiếp theo) 1. Lợi ích kinh tế và quan hệ lợi ích kinh tế (tt). - <i>Quan hệ lợi ích kinh tế.</i> 2. Vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích. - Bảo vệ lợi ích hợp pháp, tạo môi trường thuận lợi cho hoạt động tìm kiếm lợi ích của các chủ thể kinh tế. - Điều hòa lợi ích giữa cá nhân – doanh nghiệp – xã hội. - Kiểm soát, ngăn ngừa các quan hệ lợi ích có ảnh hưởng tiêu cực đối với sự phát triển của xã hội. Chương 6 CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP KINH TẾ QUỐC TẾ CỦA VIỆT NAM I. Công nghiệp hóa, hiện đại hóa của Việt Nam. 1. Khái quát về cách mạng công nghiệp và công nghiệp hóa. - Khái quát về cách mạng công nghiệp - Công nghiệp hóa và các mô hình công nghiệp hóa trên thế giới	G.1.5 G.1.6 G.2.3 G.2.4 G.3.1 G.3.2	Hoạt động dạy: - Trình chiếu, thuyết giảng, giải đáp thắc mắc - Tổng kết nội dung thuyết trình nhóm Hoạt động học: - Nghe giảng, thảo luận, phát biểu, nêu thắc mắc. - Thuyết trình nhóm GHW - Đọc trước chương 6.	A1.1 A1.2 A1.3 A3.1
	Chương 6		Hoạt động dạy:	

8/2 tiết	CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP KINH TẾ QUỐC TẾ CỦA VIỆT NAM (tiếp theo) 2. Tính tất yếu khách quan và nội dung công nghiệp hóa, hiện đại hóa ở Việt Nam. <i>- Tính tất yếu của công nghiệp hóa, hiện đại hóa ở Việt Nam.</i> <i>- Nội dung CNH, HĐH ở Việt Nam</i> II. Hội nhập kinh tế quốc tế của Việt Nam 1. Khái niệm và nội dung hội nhập kinh tế quốc tế. 2. Tác động của hội nhập kinh tế quốc tế đến quá trình phát triển của Việt Nam 3. Phương hướng nâng cao hiệu quả hội nhập kinh tế quốc tế trong phát triển của Việt Nam Ôn tập thi cuối kì		- Trình chiếu, thuyết giảng, tổng kết nội dung thuyết trình nhóm. - Giải đáp thắc mắc cho sinh viên - Công bố điểm quá trình. Hoạt động học: - Nghe giảng - Phát biểu, thảo luận - Nêu thắc mắc về môn học.	A1.1 A1.2 A1.3 A3.1
		G.1.6 G.2.4 G.3.1 G.3.2		

- (1): Thông tin về tuần/buổi học. (2): Liệt kê nội dung giảng dạy theo chương, mục
 (3): Liệt kê CDR liên quan của môn học (ghi ký hiệu Gx.x),
 (4): Liệt kê các hoạt động dạy và học (ở lớp, ở nhà), bao gồm đọc trước tài liệu (nếu có yêu cầu)
 (5): Liệt kê các bài đánh giá liên quan (ghi ký hiệu Ax.x)

8. Quy định của môn học

- Quy định về Bài thuyết trình nhóm GHW:

+ Thành lập nhóm: 5 sinh viên/nhóm. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là buổi 1 hoặc trực tiếp nộp cho GV.

+ Tuần 2 (buổi thứ 2) thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình.

+ Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV

- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị cấm thi theo quy chế. Có đầy đủ điểm kiểm tra, điểm thi kết thúc học phần & nhiệt tình thảo luận, phát biểu xây dựng bài, nghiêm túc trong giờ học.

9. Phụ trách môn học

- Khoa/Bộ môn: Bộ môn Lý luận và Khoa học chính trị, Khoa Chính trị - Hành chính
- Email liên hệ: daotao.spas@vnuhcm.edu.vn.

KT. Trưởng Bộ môn
Phó trưởng Bộ môn



Lê Văn Thông

TP. Hồ Chí Minh, ngày 01 tháng 10 năm 2023

KT. TRƯỞNG KHOA
PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

ĐẠI HỌC QUỐC GIA TP. HỒ CHÍ MINH
KHOA CHÍNH TRỊ - HÀNH CHÍNH

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC
(dành cho trường Đại học Quốc Tế)

1. Thông tin tổng quát

Tên môn học:

Tiếng Việt

Tiếng Anh

- Mã số môn học:

Thuộc khối kiến thức/kỹ năng:

☒ Kiến thức cơ bản/giáo dục đại cương

☐ Kiến thức chuyên ngành

☐ Môn học chuyên về kỹ năng chung

- Số tín chỉ:

Lý thuyết

Thực hành

- Môn học tiên quyết:

- Môn học trước:

- Môn học song hành:

Chủ nghĩa xã hội khoa học

Scientific socialism

PA21GEP03

☐ Kiến thức cơ sở ngành

☐ Kiến thức khác

☐ Môn học đồ án/luận văn tốt nghiệp

2 (30 tiết)

30 tiết

Triết học Mác – Lênin

2. Mô tả môn học

(Vị trí của môn học đối với chương trình đào tạo (CTĐT), những mục đích và nội dung chính yếu của môn học)

Môn học thuộc phần kiến thức giáo dục đại cương trong khối kiến thức cơ bản về lý luận chính trị.

Trang bị cho sinh viên những kiến thức cơ bản về chủ nghĩa xã hội khoa học: Đối tượng, phương pháp nghiên cứu, ý nghĩa của việc nghiên cứu chủ nghĩa xã hội khoa học; về sứ mệnh lịch sử của giai cấp công nhân; về chủ nghĩa xã hội và thời kỳ quá độ lên chủ nghĩa xã hội; về dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa; về cơ cấu xã hội - giai cấp và liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội; về vấn đề dân tộc và tôn giáo trong thời kỳ quá độ lên chủ nghĩa xã hội.

Môn học có mối quan hệ trực tiếp tới việc giáo dục lập trường, tư tưởng cho sinh viên, cũng như cung cấp kiến thức chuyên sâu cho sinh viên trong cách nhìn nhận các vấn đề chính trị xã hội.

3. Tài liệu học tập

(Các giáo trình, tài liệu tham khảo, các phần mềm, không quá 5 cuốn)

Giáo trình:

- Bộ Giáo dục và Đào tạo (2021), *Giáo trình Chủ nghĩa xã hội khoa học*, (dùng cho



khối không chuyên ngành lý luận chính trị) Nxb. Chính trị quốc gia, Hà Nội.

- Bộ Giáo dục và Đào tạo (2012), *Giáo trình Những Nguyên lý cơ bản của chủ nghĩa Mác – Lênin*, Nxb. Chính trị quốc gia, Hà Nội.

- Hội đồng Trung ương (2008), *Giáo trình Chủ nghĩa xã hội khoa học*, Nxb. Chính trị quốc gia, Hà Nội.

Tài liệu khác:

[1] Tên tác giả (năm xuất bản), *Tên giáo trình*. Nơi xuất bản: Tên nhà xuất bản

Phần mềm:

[..] Tên hãng phần mềm (năm phát hành/phiên bản). *Tên phần mềm...*

4. Mục tiêu môn học

(Các mục tiêu tổng quát của môn học, thể hiện sự liên quan với các chuẩn đầu ra (X.x.x) của CTĐT và trình độ năng lực (TĐNL) được phân bổ cho môn học)

Mục tiêu (1)	Mô tả mục tiêu (2)	CĐR của môn học tương ứng CTĐT (3)
G1	Về kiến thức - Sinh viên hiểu một cách có hệ thống những nội dung cơ bản của học phần chủ nghĩa xã hội khoa học. Cùng các môn lý luận chính trị và các môn học khác giúp sinh viên có nhận thức tổng hợp, toàn diện về chủ nghĩa Mác-Lênin, tư tưởng Hồ Chí Minh và con đường đi lên CNXH ở Việt Nam. - Sinh viên hiểu những tri thức khoa học để luận giải sự ra đời tất yếu của chủ nghĩa xã hội, những nhiệm vụ, giải pháp cần thực hiện trong quá trình xây dựng chủ nghĩa xã hội nói chung và ở Việt Nam nói riêng. - Sinh viên hiểu những căn cứ khoa học để chống lại những nhận thức sai lệch và sự chống phá của các thế lực thù địch.	
G2	Về kỹ năng Sinh viên phân tích, đánh giá, giải quyết các vấn đề chính trị xã hội nảy sinh trong thực tiễn. Và vận dụng quan điểm khoa học của chủ nghĩa Mác - Lênin để nhận diện được âm mưu diễn biến hòa bình của các thế lực phản động, thù địch.	
G3	Về thái độ/năng lực tự chủ và trách nhiệm Sinh viên đánh giá được sự cần thiết của việc học tập các môn lý luận chính trị; có niềm tin vào mục tiêu, lý tưởng xã hội chủ nghĩa và con đường đi lên chủ nghĩa xã hội; tin tưởng vào sự thành công của công cuộc đổi mới do Đảng Cộng sản Việt Nam khởi xướng và lãnh đạo.	

(1): Ký hiệu mục tiêu của môn học. (2): Mô tả các mục tiêu bao gồm các động từ chủ động, các chủ đề CĐR (X.x.x) và bối cảnh áp dụng tổng quát

(3), (4): Ký hiệu CDR của CTĐT và TĐNL tương ứng được phân bổ cho môn học.

5. Chuẩn đầu ra môn học

(Các mục cụ thể hay CDR của môn học và mức độ giảng dạy I, T, U)

CDR (1)	Mô tả CDR (2)	Mức độ giảng dạy (I, T, U) (3)
G1.1	Sinh viên hiểu những kiến thức cơ bản, hệ thống về sự ra đời, các giai đoạn phát triển; đối tượng, phương pháp nghiên cứu và ý nghĩa của việc học tập, nghiên cứu chủ nghĩa xã hội khoa học. Trên cơ sở đó tạo điều kiện để sinh viên nghiên cứu các phạm trù tiếp theo của chủ nghĩa xã hội khoa học.	I, T
G1.2	Sinh viên hiểu những nội dung cơ bản của lý luận về sứ mệnh lịch sử toàn thể giới của giai cấp công nhân, biểu hiện và ý nghĩa của sứ mệnh đó trong bối cảnh hiện nay.	I, T
G1.3	Sinh viên hiểu những kiến thức cơ bản và hệ thống quan điểm của chủ nghĩa Mác - Lênin về hình thái kinh tế - xã hội cộng sản chủ nghĩa, về chủ nghĩa xã hội, thời kỳ quá độ lên chủ nghĩa xã hội và quá độ lên chủ nghĩa xã hội bỏ qua chế độ tư bản chủ nghĩa ở Việt Nam.	T, U
G1.4	Sinh viên hiểu đầy đủ và đúng bản chất của nền dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa, quan điểm của Đảng Cộng sản Việt Nam về việc xây dựng và hoàn thiện nền dân chủ và nhà nước xã hội chủ ở Việt Nam hiện nay.	T, U
G1.5	Sinh viên hiểu những kiến thức nền tảng về cơ cấu xã hội - giai cấp và liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội. Giúp sinh viên hiểu rõ vị trí, vai trò của những giai cấp, tầng lớp cơ bản trong quá trình xây dựng đất nước và nội dung của liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam.	T, U
G1.6	Sinh viên hiểu quan điểm cơ bản chủ nghĩa Mác-Lênin về vấn đề dân tộc, tôn giáo. Sinh viên nắm được những nội dung cơ bản của chính sách dân tộc, tôn giáo của Đảng và Nhà nước ta.	T, U
G1.7	Sinh viên hiểu những quan điểm cơ bản của chủ nghĩa Mác - Lênin, tư tưởng Hồ Chí Minh và Đảng Cộng sản Việt Nam về gia đình, xây dựng gia đình trong thời kỳ quá độ lên chủ nghĩa xã hội, xây dựng gia đình ở Việt Nam hiện nay.	T, U
G2.1	Sinh viên phân tích lý luận – thực tiễn về các vấn đề đặt ra trong cuộc sống một cách đúng đắn và nhận diện những biến đổi xã hội ở nước ta	U

CĐR (1)	Mô tả CĐR (2)	Mức độ giảng dạy (I, T, U) (3)
	trong thời kỳ quá độ lên chủ nghĩa xã hội.	
G2.2	Sinh viên vận dụng những nội dung trong bài học để phân tích, giải thích những vấn đề trong thực tiễn một cách khách quan, có cơ sở khoa học.	U
G2.3	Sinh viên vận dụng kiến thức môn học để làm việc nhóm, quản lý nhóm	U
G3.1	Xây dựng và củng cố niềm tin vào lý tưởng cộng sản chủ nghĩa, vào con đường đi lên chủ nghĩa xã hội, góp phần xây dựng thành công chủ nghĩa xã hội ở Việt Nam.	T, U
G3.2	Có ý thức chính trị - xã hội, thái độ kiên định về lập trường, tư tưởng, có tinh thần đấu tranh bảo vệ lẽ phải, bảo vệ những quan điểm, chủ trương, chính sách đúng đắn của Đảng và Nhà nước; chống lại biểu hiện thờ ơ về chính trị và những quan điểm sai trái, thù địch cũng như những biểu hiện tiêu cực trong đời sống xã hội.	U
G3.3	Có năng lực dạy học, tự nghiên cứu các vấn đề liên quan đến chủ nghĩa Mác- Lênin, tư tưởng Hồ Chí Minh, đường lối, sách lược của Đảng, Nhà nước.	U

(1): Ký hiệu CĐR của môn học

(2): Mô tả CĐR, bao gồm các động từ chủ động, các chủ đề CĐR ở cấp độ 4 (X.x.x.x) và bối cảnh áp dụng cụ thể.

(3): I (Introduce): giới thiệu; T (Teach): dạy; U (Utilize): sử dụng

6.Đánh giá môn học

(Các thành phần, các bài đánh giá, các tiêu chí đánh giá, chuẩn đánh giá, và tỷ lệ đánh giá, thể hiện sự tương quan với các CĐR của môn học)

Thành phần đánh giá (1)	Bài đánh giá (2)	CĐR môn học (3)	Tỷ lệ % (6)
A1. Đánh giá quá trình	A1.1. Chuyên cần A1.2. Thuyết trình nhóm, bài tập lớn, thu hoạch...	G1.1 - G1.7, G2.1 - G2.3, G3.1- G3.3	30%
A2. Đánh giá giữa kỳ (Quiz)	A2.1. Trắc nghiệm (đề đóng) hoặc tự luận (được tham khảo tài liệu) thời gian làm bài 45 phút	G1.1 - G1.3, G2.1 - G2.3, G3.1- G3.3	20%
A3. Đánh giá cuối kỳ (FEX)	A3.1. Thi đề chung. Đề thi bao quát toàn bộ nội dung môn học bằng hình thức tự luận (đề mở). Thời gian 60 phút.	G1.1 - G1.7, G2.1 - G2.3, G3.1- G3.3	50%

(1): các thành phần đánh giá của môn học. (2): các bài đánh giá
 (3): các CDR được đánh giá. (4): tiêu chí đánh giá. (5): chuẩn đánh giá
 (6): Tỷ lệ điểm của các bài đánh giá trong tổng điểm môn học

6. Kế hoạch giảng dạy chi tiết

Tuần/Buổi học (1)	Nội dung (2)	Hoạt động dạy và học (3)	CDRMH (4)
1/2 tiết	Giới thiệu về môn học Chương 1: NHẬP MÔN CHỦ NGHĨA XÃ HỘI KHOA HỌC 1. SỰ RA ĐỜI CỦA CHỦ NGHĨA XÃ HỘI KHOA HỌC 1.1.. Hoàn cảnh lịch sử sự ra đời của chủ nghĩa xã hội khoa học 1.2. Vai trò của C. Mác và Ăngghen	Dạy: - Thông báo quy định giảng dạy, học tập. - Công bố quy định kiểm tra, đánh giá môn học - Giới thiệu nội dung môn học - Giới thiệu nội dung đề tài thuyết trình nhóm, chia nhóm Học ngoài lớp: - Đọc trước tài liệu chương 1. Dạy: thuyết giảng Học ở lớp: Thảo luận và phát biểu trên lớp.	G1.1 G2.1 G2.2 G3.1 G3.1 G3.3
2/2 tiết	Chương 1: NHẬP MÔN CHỦ NGHĨA XÃ HỘI KHOA HỌC 2. CÁC GIAI ĐOẠN PHÁT TRIỂN CƠ BẢN CỦA CHỦ NGHĨA XÃ HỘI KHOA HỌC 2.1. C.Mác và Ph.Ăngghen phát triển chủ nghĩa xã hội khoa học 2.2. V.I.Lênin vận dụng và phát triển chủ nghĩa xã hội khoa học trong điều kiện mới 2.3. Sự vận dụng và phát triển sáng tạo chủ nghĩa xã hội khoa học từ sau khi Lênin qua đời đến nay 3. ĐỐI TƯỢNG, PHƯƠNG PHÁP VÀ Ý NGHĨA CỦA VIỆC NGHIÊN CỨU CHỦ NGHĨA XÃ HỘI KHOA HỌC 3.1. Đối tượng nghiên cứu của chủ nghĩa xã hội khoa học	Dạy: thuyết giảng phần 1; 2.1. Hướng dẫn tự đọc phần còn lại. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: - Phác thảo nội dung thuyết trình nhóm GHW - Đọc trước tài liệu chương 2.	G1.1 G2.1 G2.2 G3.1 G3.1 G3.3

QUỐC GIA

HỒ CHÍ MINH

	3.2. Phương pháp nghiên cứu của chủ nghĩa xã hội khoa học 3.3. Ý nghĩa của việc nghiên cứu chủ nghĩa xã hội khoa học		
3/ 2 tiết	Chương 2 SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN 1. Quan điểm cơ bản của chủ nghĩa Mác - Lênin về giai cấp công nhân và sứ mệnh lịch sử thế giới của giai cấp công nhân 1.1. Khái niệm và đặc điểm của giai cấp công nhân 1.2. Nội dung và đặc điểm sứ mệnh lịch sử của giai cấp công nhân 1.3. Những điều kiện quy định sứ mệnh lịch sử của giai cấp công nhân. 2. Giai cấp công nhân và việc thực hiện sứ mệnh lịch sử của giai cấp công nhân hiện nay 2.1. Giai cấp công nhân hiện nay 2.2. Thực hiện sứ mệnh lịch sử của giai cấp công nhân trên thế giới hiện nay	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: - Đọc trước tài liệu mục 3, chương 2	G1.2 G2.1 G2.2 G3.1 G3.1 G3.3
4/ 2 tiết	Chương 2: SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN (tiếp theo) 3. SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN VIỆT NAM 3.1. Đặc điểm của giai cấp công nhân Việt Nam 3.2. Nội dung sứ mệnh lịch sử của giai cấp công nhân Việt Nam hiện nay 3.3. Phương hướng và một số giải pháp chủ yếu để xây dựng giai cấp công nhân Việt Nam hiện nay	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: - Đọc trước tài liệu chương 3	G1.2 G2.1 G2.2 G3.1 G3.1 G3.3
5/ 2 tiết	Chương 3: CHỦ NGHĨA XÃ HỘI VÀ THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1. CHỦ NGHĨA XÃ HỘI 1.1. Chủ nghĩa xã hội, giai đoạn đầu của hình thái kinh tế - xã hội công sản chủ	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp:	G1.3 G2.1 G2.2 G3.1 G3.1 G3.3

	nghĩa 1.2. Điều kiện ra đời chủ nghĩa xã hội Những đặt trưng cơ bản của chủ nghĩa xã hội 2.THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 2.1. Tính tất yếu khách quan của thời kỳ quá độ lên chủ nghĩa xã hội 2.2. Đặc điểm của thời kỳ quá độ lên chủ nghĩa xã hội	- Đọc trước tài liệu mục 3, chương 3	
6/ 2 tiết	Chương 3: CHỦ NGHĨA XÃ HỘI VÀ THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI (tiếp theo) 3.QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI Ở VIỆT NAM 3.1. Quá độ lên chủ nghĩa xã hội bỏ qua chế độ tư bản chủ nghĩa 3.2. Những đặc trưng cơ bản của chủ nghĩa xã hội và phương hướng xây dựng chủ nghĩa xã hội ở Việt Nam hiện nay	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: - ôn tập, chuẩn bị kiểm tra giữa kỳ	G1.3 G2.1 G2.2 G3.1 G3.1 G3.3
7/ 2 tiết	-Kiểm tra giữa kỳ -Hướng dẫn tự đọc các nội dung của chương 4.5.6	Dạy: Tổ chức kiểm tra giữa kỳ, hướng dẫn tự học Học ở lớp: Làn bài thi Học ngoài lớp: - Đọc trước tài liệu chương 4	G1.1, G1.2, G1.3 G2.1, G2.2, G2.3 G3.1, G3.1, G3.3
8 /2 tiết	Chương 4: DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA 1.DÂN CHỦ VÀ DÂN CHỦ XÃ HỘI CHỦ NGHĨA 1.1. Dân chủ và sự ra đời, phát triển của dân chủ 1.2. Dân chủ xã hội chủ nghĩa 2. NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA 2.1. Sự ra đời, bản chất, chức năng của nhà nước xã hội chủ nghĩa 2.2. Mối quan hệ giữa dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu mục 3, chương 4	G1.4 G2.1 G2.2 G3.1 G3.1 G3.3

9/ 2 tiết	Chương 4: DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA (tiếp theo) 3. DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC PHÁP QUYỀN XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM <i>3.1. Dân chủ xã hội chủ nghĩa ở Việt Nam</i> <i>3.2. Nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam</i> <i>3.3. Phát huy dân chủ xã hội chủ nghĩa, xây dựng nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam hiện nay</i>	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu chương 5	G1.4 G2.1 G2.2 G3.1 G3.1 G3.3
10/ 2 tiết	Chương 5: CƠ CẤU XÃ HỘI - GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1. CƠ CẤU XÃ HỘI GIAI CẤP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI <i>1.1. Khái niệm và vị trí của cơ cấu xã hội - giai cấp trong cơ cấu xã hội</i> <i>1.2. Sự biến đổi có tính quy luật của cơ cấu xã hội - giai cấp trong thời kỳ quá độ lên chủ nghĩa xã hội</i> 2. LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI <i>2.1. Tính tất yếu của liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội</i> <i>2.2. Nội dung của liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội</i>	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu mục 3, chương 5	G1.5 G2.1 G2.2 G3.1 G3.1 G3.3
11/ 2 tiết	Chương 5: CƠ CẤU XÃ HỘI - GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI (tiếp theo) 3. CƠ CẤU XÃ HỘI - GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu	G1.5 G2.1 G2.2 G3.1 G3.1 G3.3

	TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI Ở VIỆT NAM 3.1. Cơ cấu xã hội - giai cấp trong thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam. 3.2. Liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam.	chương 6	
12/ 2 tiết	Chương 6: VẤN ĐỀ DÂN TỘC VÀ TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1. DÂN TỘC TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1.1. Chủ nghĩa Mác - Lênin về dân tộc 1.2. Dân tộc và quan hệ dân tộc ở Việt Nam	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu mục 2, 3 chương 6	G1.6 G2.1 G2.2 G3.1 G3.1 G3.3
13/ 2 tiết	Chương 6: VẤN ĐỀ DÂN TỘC VÀ TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI (tiếp theo) 2. TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 2.1. Chủ nghĩa Mác - Lênin về tôn giáo. 2.2. Tôn giáo ở Việt Nam và chính sách tôn giáo của Đảng, Nhà nước ta hiện nay 3. QUAN HỆ DÂN TỘC VÀ TÔN GIÁO Ở VIỆT NAM 3.1. Đặc điểm quan hệ dân tộc và tôn giáo ở Việt Nam 3.2. Định hướng giải quyết mối quan hệ dân tộc và tôn giáo ở Việt Nam hiện nay.	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu chương 7	G1.6 G2.1 G2.2 G3.1 G3.1 G3.3
14/ 2 tiết	Chương 7: VẤN ĐỀ GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1. KHÁI NIỆM, VỊ TRÍ VÀ CHỨC NĂNG CỦA GIA ĐÌNH 1.1. Khái niệm gia đình 1.2. Vị trí của gia đình trong xã hội 1.3. Chức năng cơ bản của gia đình	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Đọc trước tài liệu mục 3, chương 7	G1.7 G2.1 G2.2 G3.1 G3.1 G3.3



	2. CƠ SỞ XÂY DỰNG GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 2.1. Cơ sở kinh tế - xã hội 2.2. Cơ sở chính trị - xã hội 2.3. Cơ sở văn hóa		
15/ 2 tiết	Chương 7: VẤN ĐỀ GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI (tiếp theo) 3. XÂY DỰNG GIA ĐÌNH VIỆT NAM TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 3.1. Sự biến đổi gia đình Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội 3.2. Phương hướng cơ bản xây dựng và phát triển gia đình Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội. - Ôn tập thi cuối kỳ	Dạy: thuyết giảng, phát vấn, chấm phần biện. Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: Ôn tập thi cuối kỳ	G1.7 G2.1 G2.2 G3.1 G3.1 G3.3

(Các nội dung giảng dạy theo buổi học, thể hiện sự tương quan với các CĐR của môn học, các hoạt động dạy và học (ở lớp, ở nhà) và các bài đánh giá của môn học)

Lý thuyết

- (1): Thông tin về tuần/buổi học. (2): Liệt kê nội dung giảng dạy theo chương, mục
(3): Liệt kê CĐR liên quan của môn học (ghi ký hiệu Gx.x),
(4): Liệt kê các hoạt động dạy và học (ở lớp, ở nhà), bao gồm đọc trước tài liệu (nếu có yêu cầu)
(5): Liệt kê các bài đánh giá liên quan (ghi ký hiệu Ax.x)

Thực hành

Tuần/Buổi học (1)	Nội dung (2)	CĐR môn học (3)	Hoạt động dạy và học (4)	Bài đánh giá (5)

- (1): Thông tin về tuần/buổi học. (2): Liệt kê nội dung thực hành theo bài thực hành
(3): Liệt kê CĐR liên quan của môn học (ghi ký hiệu Gx.x),
(4): Liệt kê các hoạt động dạy và học (ở lớp, ở nhà), bao gồm đọc trước tài liệu (nếu có yêu cầu)
(5): Liệt kê các bài đánh giá liên quan (ghi ký hiệu Ax.x)

7. Quy định của môn học

- Quy định về Bài thuyết trình nhóm GHW:
- + Thành lập nhóm: Số lượng sinh viên tùy tình hình thực tế của lớp, giảng viên quy định. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2 hoặc trực tiếp nộp cho GV buổi 1.
- + Các nhóm thuyết trình theo thứ tự, giảng viên quy định. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình.
- + Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV
- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học:
- + Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị cấm thi theo quy chế.
- + Có đầy đủ các phần điểm quá trình, điểm kiểm tra giữa kỳ điểm thi kết thúc học phần.
- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Lý luận và khoa học chính trị và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn

8. Phụ trách môn học

- Khoa/Bộ môn: Bộ môn Lý luận và khoa học chính trị - Khoa Chính trị - Hành chính (ĐHQG TP.HCM)
- Địa chỉ và email liên hệ: Tầng 7, nhà Điều hành ĐHQG. Khu phố 1. Phường Linh Trung, TP. Thủ Đức. Đại chỉ mail: daotao.spas@vnuhcm.edu.vn

KT. Trưởng Bộ môn
Phó trưởng Bộ môn (phụ trách)



TS. Mạch Thị Khánh Trinh

Tp. Hồ Chí Minh, ngày 14 tháng 10 năm 2023

KT. TRƯỞNG KHOA
PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC
(DÀNH CHO TRƯỜNG ĐẠI HỌC QUỐC TẾ, ĐHQG-HCM)

1. THÔNG TIN CHUNG (General information)

- Tên môn học:
- + Tiếng Việt
 - + Tiếng Anh
- Mã số môn học:
- Thuộc khối kiến thức/kỹ năng:
- ☒ Kiến thức cơ bản/giáo dục đại cương
- ☐ Kiến thức chuyên ngành
- ☐ Môn học chuyên về kỹ năng chung
- Số tín chỉ:
- + Lý thuyết
 - + Thực hành (thuyết trình)
- Môn học tiên quyết:
- Môn học trước:
- Môn học song hành:
- Lịch sử Đảng Cộng sản Việt Nam**
History of Vietnamese communist party
PE018IU
- ☐ Kiến thức cơ sở ngành
- ☐ Kiến thức khác
- ☐ Môn học đồ án/luận văn tốt nghiệp
- 02
- 20 tiết
- 10 tiết (trên lớp)
- 60 tiết (về nhà)
- Không
- Không

2. MÔ TẢ MÔN HỌC (Course description)

Môn học nằm trong khối kiến thức giáo dục đại cương thuộc mảng lý luận chính trị. Môn học với những kiến thức cơ bản, hệ thống về Lịch sử Đảng Cộng sản Việt Nam như: sự ra đời của Đảng Cộng sản Việt Nam, sự lãnh đạo của Đảng trong đấu tranh giành chính quyền, giải phóng dân tộc và xây dựng chủ nghĩa xã hội từ năm 1930 đến năm nay.

3. MỤC TIÊU MÔN HỌC (Course Goals)

Mục tiêu (1)	Mô tả mục tiêu (2)	CĐR của môn học tương ứng CTĐT (3)
G1	Về kiến thức Sinh viên hiểu được những tri thức cơ bản, có tính hệ thống về sự ra đời của Đảng Cộng sản Việt Nam (1920-1930), sự lãnh đạo của Đảng đối với cách mạng Việt Nam trong thời kỳ đấu tranh giành chính quyền chính quyền (1930-1945), trong hai cuộc kháng chiến chống thực dân	

	Pháp và đế quốc Mỹ xâm lược (1945-1975), trong sự nghiệp xây dựng, bảo vệ Tổ quốc thời kỳ cả nước quá độ lên chủ nghĩa xã hội, tiến hành công cuộc đổi mới (1975 đến nay).	
G2	Về kỹ năng Sinh viên vận dụng phương pháp tư duy khoa học về lịch sử để lựa chọn, khái quát hóa tài liệu nghiên cứu, học tập môn học; đồng thời sinh viên phân tích, đánh giá, vận dụng kiến thức lịch sử vào công tác thực tiễn.	
G3	Về thái độ/năng lực tự chủ và trách nhiệm Sinh viên đánh giá được sự thật khách quan và nâng cao lòng tự hào, niềm tin đối với sự nghiệp lãnh đạo của Đảng và phê phán những quan niệm sai trái về lịch sử của Đảng.	

4. CHUẨN ĐẦU RA MÔN HỌC (Course learning outcomes)

CDR (1)	Mô tả CDR (2)	Mức độ giảng dạy (3)
G1.1	Hiểu được đối tượng, chức năng, nhiệm vụ nội dung và phương pháp nghiên cứu, học tập môn Lịch sử Đảng Cộng sản Việt Nam	I,U
G1.2	Hiểu được quá trình ra đời của Đảng Cộng sản Việt Nam (1920-1930), nội dung cơ bản, giá trị lịch sử của Cương lĩnh chính trị đầu tiên của Đảng và quá trình Đảng lãnh đạo cuộc đấu tranh giành độc lập, giành chính quyền (1930-1945)	I, T,U
G1.3	Hiểu được quá trình lãnh đạo của Đảng đối với hai cuộc kháng chiến chống thực dân Pháp và đế quốc Mỹ xâm lược, hoàn thành giải phóng dân tộc, thống nhất đất nước thời kỳ 1945-1975	I, T,U
G1.4	Hiểu được quá trình phát triển đường lối và sự lãnh đạo của Đảng để đưa cả nước quá độ lên chủ nghĩa xã hội và tiến hành công cuộc đổi mới từ sau ngày thống nhất đất nước năm 1975 đến nay. Những thành tựu và bài học kinh nghiệm trong quá trình lãnh đạo từ năm 1930 đến nay.	I, T,U
G2.1	Vận dụng kiến thức đã học để nhận thức, hành động theo đường lối của Đảng.	U
G2.2	Vận dụng, phân tích với tư duy độc lập trong nghiên cứu nhằm giải quyết các vấn đề khi làm việc theo nhóm và trình bày kết quả nghiên cứu.	U
G3.1	Đánh giá được sự lãnh đạo đúng đắn của Đảng Cộng sản Việt Nam đối với cách mạng nước ta. Quyết tâm phấn đấu thực hiện đường lối cách mạng của Đảng.	U

G3.2	Đánh giá được tầm quan trọng của sự nghiêm túc trong học tập và nghiên cứu, tự rèn luyện bản thân trở thành người có phẩm chất chính trị và đạo đức tốt.	U
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5. ĐÁNH GIÁ MÔN HỌC

Thành phần đánh giá (1)	Bài đánh giá (2)	CĐR môn học (3)	Tỷ lệ % (4)
A1. Đánh giá quá trình	- Chuyên cần (A1.1) - Tham gia học tập trên lớp tích cực, hăng hái phát biểu (A1.2) - Thuyết trình nhóm (A1.3)	G1.1, G1.2- G1.3, G2.1, G2.2- G2.3 G3.1-G3.2	30%
A2. Đánh giá giữa kỳ	Kiểm tra giữa kỳ (A2.1)	G1.1 G2.1-G2.2, G3.1-G3.2	20%
A3. Đánh giá cuối kỳ	Thi cuối học kỳ (A3.1)	G1.2-G1.3, G2.1-G2.2, G3.1-G3.2	50%

6. KẾ HOẠCH GIẢNG DẠY CHI TIẾT

Tuần/Buổi học (1)	Nội dung (2)	Hoạt động dạy và học (3)	CĐRMH (4)
1/2 tiết	Chương nhập môn ĐỐI TƯỢNG, CHỨC NĂNG, NHIỆM VỤ, NỘI DUNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU, HỌC TẬP LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM I. Đối tượng nghiên cứu của môn học lịch sử Đảng Cộng sản Việt Nam II. Chức năng, nhiệm vụ của môn học lịch sử Đảng Cộng sản Việt Nam III. Phương Pháp nghiên cứu, học tập môn lịch sử Đảng Cộng sản Việt Nam	Hoạt động dạy: - Giới thiệu đề cương môn học - Giới thiệu nội dung đề tài thuyết trình nhóm) - Trình chiếu, thuyết giảng Hoạt động học: - Chia nhóm - Giới thiệu nhóm học tập - Nghe giảng, phát biểu - Đọc trước mục 1, 2 phần I của chương 1	G1.1 G2.1 G2.2 G3.1 G3.2
	Chương 1 ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ LÃNH ĐẠO	Hoạt động dạy: - Trình chiếu, thuyết giảng mục	

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2/2 tiết	ĐẤU TRANH GIÀNH CHÍNH QUYỀN (1930-1945) I. Đảng cộng sản việt nam ra đời và cương lĩnh chính trị đầu tiên của Đảng (tháng 2 – 1930) 1. <i>Bối cảnh lịch sử</i> 2. <i>Nguyễn Ái Quốc chuẩn bị các điều kiện để thành lập Đảng</i>	1,2 phần I của chương 1 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 3,4 phần I của chương 1	G1.2 G2.1 G2.2 G3.1 G3.2
3/2 tiết	Chương 1 (tiếp theo) I. Đảng cộng sản việt nam ra đời và cương lĩnh chính trị đầu tiên của Đảng (tháng 2 – 1930) (tt) 3. <i>Thành lập Đảng Cộng sản Việt Nam và Cương lĩnh chính trị đầu tiên của Đảng</i> 4. <i>Ý nghĩa lịch sử của việc thành lập Đảng Cộng sản Việt Nam</i>	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 3,4 phần I của chương 1 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 1, 2 phần II của chương 1	G1.1 G1.2 G2.1 G2.2 G3.1 G3.2
4/2 tiết	Chương 1 (tiếp theo) II. Lãnh đạo đấu tranh giành chính quyền (1930-1945) 1. <i>Phong trào cách mạng 1930-1935 và khôi phục phong trào 1932-1935</i> 2. <i>Phong trào dân chủ 1936-1939</i>	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1, 2 phần II của chương 1 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 3, 4 phần II của chương 1	G1.2 G2.1 G2.2 G3.1 G3.2

5/2 tiết	II. Lãnh đạo đấu tranh giành chính quyền (1930-1945) (tt) 3. Phong trào giải phóng dân tộc 1939-1945 4. Tính chất, ý nghĩa và kinh nghiệm của Cách mạng Tháng Tám năm 1945	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 3, 4 phần II của chương 1 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 1,2 phần I của chương 2	G1.2 G1.3 G2.1 G2.2 G3.1 G3.2
6/2 tiết	Chương 2 ĐẢNG LÃNH ĐẠO HAI CUỘC KHÁNG CHIẾN, HOÀN THÀNH GIẢI PHÓNG DÂN TỘC, THỐNG NHẤT ĐẤT NƯỚC (1945-1975) I. Lãnh đạo xây dựng, bảo vệ chính quyền cách mạng, kháng chiến chống thực dân Pháp xâm lược 1945-1954 1. Xây dựng và bảo vệ chính quyền cách mạng 1945-1946 2. Đường lối kháng chiến toàn quốc và quá trình tổ chức thực hiện từ năm 1946 đến năm 1950	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1, 2 phần I của chương 2 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 3, 4 phần I của chương 2	G1.3 G2.1 G2.2 G3.1 G3.2
7/2 tiết	Chương 2 (tiếp theo) I. Lãnh đạo xây dựng, bảo vệ chính quyền cách mạng, kháng chiến chống thực dân Pháp xâm lược 1945-1954 (tt) 3. Đẩy mạnh cuộc kháng chiến đến thắng lợi 1951-1954 4. Ý nghĩa lịch sử và kinh nghiệm của Đảng trong lãnh đạo kháng chiến chống Pháp và can thiệp Mỹ	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 3, 4 phần I của chương 2 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 1 phần II của chương 2	G1.3 G2.1 G2.2 G3.1 G3.2

8/2 tiết	Chương 2 (tiếp theo) II. Lãnh đạo xây dựng chủ nghĩa xã hội ở miền bắc và kháng chiến chống đế quốc Mỹ xâm lược, giải phóng miền nam, thống nhất đất nước (1954-1975) <i>1. Sự lãnh đạo của Đảng đối với cách mạng hai miền Nam – Bắc 1954-1965</i>	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1 phần II của chương 2 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 2,3 phần II của chương 2	G1.3 G2.1 G2.2 G3.1 G3.2
9/2 tiết	Chương 2 (tiếp theo) II. Lãnh đạo xây dựng chủ nghĩa xã hội ở miền bắc và kháng chiến chống đế quốc Mỹ xâm lược, giải phóng miền nam, thống nhất đất nước (1954-1975) (tt) <i>2. Lãnh đạo cách mạng cả nước giai đoạn 1965-1975</i> <i>3. Ý nghĩa lịch sử và kinh nghiệm lãnh đạo của Đảng thời kỳ 1954-1975</i>	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 2,3 phần II của chương 2 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Ôn tập nội dung chương 1,2	G1.3 G2.1 G2.2 G3.1 G3.2
10/2 tiết	Chương 3 ĐẢNG LÃNH ĐẠO CẢ NƯỚC QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI VÀ TIẾN HÀNH CÔNG CUỘC ĐỔI MỚI (1975 ĐẾN NAY) I. Lãnh đạo cả nước xây dựng chủ nghĩa xã hội và bảo vệ tổ quốc (1975-1986) <i>1. Xây dựng chủ nghĩa xã hội và bảo vệ Tổ quốc 1975-1981</i>	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1 phần I của chương 3 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Tổ chức kiểm tra giữa kỳ - Nghe giảng, thuyết trình, thảo luận nhóm. - Thực hiện kiểm tra giữa kỳ - Đọc trước mục 2	G1.4 G2.1 G2.2 G3.1 G3.2

		phần I của chương 3	
11/2 tiết	Chương 3 (tiếp theo) I. Lãnh đạo cả nước xây dựng chủ nghĩa xã hội và bảo vệ tổ quốc (1975-1986) (tt) 1. Xây dựng chủ nghĩa xã hội và bảo vệ Tổ quốc 1975-1981 (tt) 2. Đại hội đại biểu toàn quốc lần thứ V của Đảng và các bước đột phá tiếp tục đổi mới kinh tế 1982-1986	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1 phần I của chương 3 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 1 phần II của chương 3	G1.4 G2.1 G2.2 G3.1 G3.2
12/2 tiết	Chương 3 (tiếp theo) II. Lãnh đạo công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế (1986 đến nay) 1. Đổi mới toàn diện, đưa đất nước ra khỏi khủng hoảng kinh tế - xã hội 1986-1996	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1 phần II của chương 3 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 2 phần II của chương 3	G1.4 G2.1 G2.2 G3.1 G3.2
13/2 tiết	Chương 3 (tiếp theo) II. Lãnh đạo công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế (1986 đến nay) (tt) 1. Đổi mới toàn diện, đưa đất nước ra khỏi khủng hoảng kinh tế - xã hội 1986-1996 (tt) 2. Tiếp tục công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế 1996 đến nay	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 1, 2 phần II của chương 3 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước mục 3 phần II của chương	G1.4 G2.1 G2.2 G3.1 G3.2

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14/2 tiết	Chương 3 (tiếp theo) II. Lãnh đạo công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế (1986 đến nay) (tt) 2. Tiếp tục công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế 1996 đến nay (tt) 3. Thành tựu, kinh nghiệm của công cuộc đổi mới	Hoạt động dạy: - Trình chiếu, thuyết giảng mục 2,3 phần II của chương 3 - Đặt vấn đề và giải quyết vấn đề Hoạt động học: - Nghe giảng, thuyết trình, thảo luận nhóm. - Đọc trước phần kết luận	G1.4 G2.1 G2.2 G3.1 G3.2
15/2 tiết	KẾT LUẬN 1. Những thắng lợi vĩ đại của cách mạng Việt Nam. 2. Những bài học lớn về sự lãnh đạo của Đảng	Hoạt động dạy: - Hướng dẫn sv tự học - Ôn tập tổng kết môn học - Công bố bảng điểm chi tiết các hoạt động - Giải đáp thắc mắc Hoạt động học: - Nghe giảng, phát biểu - Ôn tập toàn bộ nội dung môn học tại nhà	G1.1 G1.2 G1.3 G1.4 G2.1 G2.2 G3.1 G3.2

7. QUY ĐỊNH CỦA MÔN HỌC (Course requirements and expectations)

- Quy định về Bài thuyết trình nhóm:
 - Thành lập nhóm: Số lượng sinh viên tùy vào sĩ số lớp, do giảng viên quy định. Hạn chót đăng ký đề tài nhóm Quản lý trên forum/Moodle là Buổi 2 hoặc trực tiếp nộp cho GV buổi 1.
 - Các nhóm thuyết trình theo thứ tự được phân công. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan khi thuyết trình.
 - Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV
- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị điểm 0 chuyên cần.

8. TÀI LIỆU HỌC TẬP, THAM KHẢO (Reference)

Giáo trình:

[1] Bộ Giáo dục và Đào tạo (2021), *Giáo trình Lịch sử Đảng Cộng sản Việt Nam* (dành cho bậc đại học hệ không chuyên lý luận chính trị), NXB. Chính trị Quốc gia Sự Thật, Hà Nội.

Tài liệu khác:

[1] Hội đồng Trung ương chỉ đạo biên soạn giáo trình quốc gia các môn khoa học Mác – Lênin, Tư tưởng Hồ Chí Minh (2019), *Giáo trình Lịch sử Đảng Cộng sản Việt Nam* (tái bản có sửa chữa, bổ sung), Nxb. Chính trị quốc gia, Hà Nội.

[2] Bộ Giáo dục và Đào tạo (2017), *Giáo trình Đường lối cách mạng của Đảng Cộng sản Việt Nam*, Nxb Chính trị quốc gia, Hà Nội.

Tp. Hồ Chí Minh, ngày 01 tháng 10 năm 2023

KT. Trưởng Bộ môn
Phó trưởng Bộ môn



Lê Văn Thông

KT. TRƯỞNG KHOA
PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

ĐỀ CƯƠNG CHI TIẾT HỌC PHẦN
(DÀNH CHO TRƯỜNG ĐẠI HỌC QUỐC TẾ)

1. Thông tin về giảng viên (cung cấp cho sinh viên khi giảng dạy)

- Họ và tên:
- Chức danh, học hàm, học vị:
- Đơn vị công tác: **Khoa Chính trị - Hành chính, ĐHQG-HCM**
- Thời gian và địa điểm làm việc:...
- Địa chỉ liên hệ:
- Điện thoại, email:
- Thông tin về trợ giảng (nếu có) (họ và tên, địa chỉ liên hệ, điện thoại, e-mail):

2. Thông tin chung về học phần

- Mã học phần: PE019IU
- Tên học phần: **Tư tưởng Hồ Chí Minh**
- Tên học phần bằng tiếng Anh: **Ho Chi Minh's Thoughts**
- Số tín chỉ: 02 (30 tiết).
- Cấu trúc/cơ cấu học phần:
 - Số tiết lý thuyết: *30 tiết*
 - Số tiết thực hành:
 - Số tiết bài tập:
 - Khác: Số tiết tự học: *60 tiết*
- Loại học phần thuộc khối kiến thức (check vào các ô):
 - Kiến thức đại cương: ☒
 - Kiến thức cơ sở ngành: ☐
 - Kiến thức chuyên ngành: ☐
 - Kiến thức bổ trợ: ☐
 - Khóa luận tốt nghiệp: ☐
 - Đồ án/dự án/seminar tốt nghiệp: ☐
 - Khác:....
- Các học phần tiên quyết: **không** hoặc **có**, nếu **có** thì điền các thông tin sau
- Các học phần học trước học phần này: **không** hoặc **có**, nếu **có** thì điền các thông tin sau
 -
 -
- Học phần song hành: **không** hoặc **có**, nếu **có** thì điền các thông tin sau
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- Các yêu cầu khác (nếu có):.....

- Bộ môn phụ trách học phần: Lý luận và Khoa học chính trị, Khoa Chính trị - Hành chính

3. Mô tả vắn tắt nội dung học phần: (trình bày ngắn gọn vai trò, vị trí học phần/môn học, kiến thức sẽ trang bị cho sinh viên, quan hệ với các học phần/môn học khác trong chương trình đào tạo)

Môn học thuộc phần kiến thức giáo dục đại cương trong khối kiến thức cơ bản về lý luận chính trị. Trang bị cho sinh viên những kiến thức cơ bản về: Đối tượng, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh; về cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; về độc lập dân tộc và chủ nghĩa xã hội; về Đảng Cộng sản và Nhà nước Việt Nam; về đại đoàn kết dân tộc và đoàn kết quốc tế; về văn hóa, đạo đức, con người.

4. Mục tiêu của học phần

- Mục tiêu chung:

+ Sinh viên **hiểu** được những nội dung cơ bản của tư tưởng Hồ Chí Minh về con đường cách mạng Việt Nam; về độc lập dân tộc gắn liền với chủ nghĩa xã hội; về Đảng Cộng sản Việt Nam; về Nhà nước pháp quyền xã hội chủ nghĩa Việt Nam; về đại đoàn kết dân tộc và đoàn kết quốc tế; về văn hóa, đạo đức và con người...

+ Sinh viên **vận dụng** được những kiến thức cơ bản của tư tưởng Hồ Chí Minh vào trong nhận thức và trong hoạt động thực tiễn của bản thân.

+ Sinh viên **phân tích, đánh giá** được giá trị, tính khoa học cách mạng và nhân văn của tư tưởng Hồ Chí Minh đối với thực tiễn Việt Nam và nhân loại.

- Mục tiêu cụ thể:

Ký hiệu mục tiêu của học phần (G)	Mô tả/nội dung mục tiêu học phần	Mức độ năng lực đạt được (theo thang đánh giá Bloom)	Ghi chú
KIẾN THỨC			
G1.1	Sinh viên hiểu những kiến thức cơ bản về khái niệm; cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; tư tưởng Hồ Chí Minh về độc lập dân tộc gắn liền với chủ nghĩa xã hội;	2	
G1.2	Sinh viên hiểu những nội dung cơ bản của tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam; về Nhà nước của nhân dân, do nhân dân, vì nhân dân; về sự vận dụng của Đảng Cộng sản Việt Nam trong cách mạng dân tộc dân chủ và cách mạng xã hội chủ nghĩa, trong công cuộc đổi mới đất nước hiện nay.	2	
G1.3	Sinh viên hiểu những nội dung cơ bản của tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đại đoàn kết quốc tế; hiểu những nội dung cơ bản của tư tưởng Hồ Chí Minh về văn hóa, đạo đức và con	2	

	người.		
KỸ NĂNG			
G2.1	Sinh viên vận dụng giá trị của tư tưởng Hồ Chí Minh trong hoạt động lý luận và thực tiễn; Sinh viên phân tích, nhận diện và phản bác những luận điệu xuyên tạc về tư tưởng Hồ Chí Minh về độc lập dân tộc và chủ nghĩa xã hội.	3	
G2.2	Sinh viên phân tích được một cách khoa học những vấn đề về xây dựng Đảng cộng sản Việt Nam và xây dựng Nhà nước pháp quyền xã hội chủ nghĩa của nhân dân, do nhân dân, vì nhân dân trong thời kỳ đổi mới đất nước.	4	
G2.3	Sinh viên vận dụng tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đoàn kết quốc tế trong giai đoạn hiện nay; Sinh viên vận dụng được phương pháp tư duy mới trong học tập, nghiên cứu; tự mình biết đào sâu lý luận gắn với thực tiễn với tinh thần độc lập, sáng tạo.	3	
THÁI ĐỘ			
G3.1	Sinh viên vận dụng, học tập và làm theo tư tưởng, đạo đức, phong cách Hồ Chí Minh trong học tập và cuộc sống hằng ngày.	3	
G3.2	Sinh viên đánh giá được bản chất khoa học và cách mạng của tư tưởng Hồ Chí Minh, từ đó có bản lĩnh chính trị vững vàng, có lòng yêu nước nồng nàn, trung thành với mục tiêu lý tưởng của Đảng, của dân tộc. Trung thực, thẳng thắn, xây dựng tập thể đoàn kết. Trân trọng, giữ gìn và phát huy di sản tư tưởng của Hồ Chí Minh trong hoạt động thực tiễn.	5	
G3.3	Sinh viên vận dụng bản chất khoa học và cách mạng của tư tưởng Hồ Chí Minh trong việc đấu tranh chống lại các âm mưu xuyên tạc tư tưởng Hồ Chí Minh, chủ trương, đường lối của Đảng. Có hành vi đạo đức chuẩn mực. Có năng lực học tập, tự nghiên cứu các vấn đề chuyên môn.	3	

(*) 1. Ghi nhớ (Remembering), 2. Hiểu (Understanding), 3. Vận dụng (Applying), 4. Phân tích (Analyzing), 5. Đánh giá (Evaluating), 6. Sáng tạo (Creating).

5. Chuẩn đầu ra (CĐR) của học phần

Thứ tự các	Ký hiệu CĐR	Mô tả/nội dung CĐR học phần	Mức độ giảng dạy	Liên kết giữa CĐR	Liên kết giữa CĐR học
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CĐR	học phần (CHP)		(I, T, U) *	học phần và mục tiêu học phần	phần và CĐR chương trình đào tạo
KIẾN THỨC					
1	CHP1	Hiểu được khái niệm, đối tượng, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh.	I	G1.1	
2	CHP2	Hiểu được cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh.	I, T, U	G1.1	
3	CHP3	Hiểu được kiến thức cơ bản tư tưởng Hồ Chí Minh về độc lập dân tộc và chủ nghĩa xã hội. Sự vận dụng của Đảng vào trong sự nghiệp cách mạng hiện nay.	I, T, U	G1.1	
4	CHP4	Hiểu được kiến thức cơ bản tư tưởng Hồ Chí Minh về Đảng Cộng Sản Việt Nam và Nhà nước của nhân dân, do nhân dân, vì nhân dân. Sự vận dụng tư tưởng Hồ Chí Minh vào công tác xây dựng Đảng và xây dựng Nhà nước.	I, T, U	G1.2	
5	CHP5	Hiểu được kiến thức cơ bản tư tưởng Hồ Chí Minh về đại đoàn kết toàn dân tộc và đoàn kết quốc tế. Sự vận dụng của Đảng vào trong sự nghiệp cách mạng hiện nay;	I, T, U	G1.3	
6	CHP6	Hiểu được kiến thức cơ bản tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người. Sự vận dụng tư tưởng Hồ Chí Minh trong việc xây dựng văn hóa, đạo đức, con người Việt Nam hiện nay.	I, T, U	G1.3	
KỸ NĂNG					
7	CHP7	Phân tích mang tính khái quát hóa để rút ra <i>Từ khóa tri thức</i> đối với mỗi nội dung và tư duy có hệ thống.	T, U	G2.1; G2.2; G2.3	
8	CHP8	Vận dụng kiến thức học phần để trình bày, thuyết	U	G2.1; G2.2;	

		minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn.		G2.3	
9	CHP9	Vận dụng kiến thức học phần để giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc.	U	G2.1; G2.2; G2.3	
THÁI ĐỘ					
10	CHP10	Phân tích, đánh giá và có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng, nhân văn của tư tưởng Hồ Chí Minh.	T, U	G3.1 G3.2 G3.3	
11	CHP11	Vận dụng kiến thức đã học gắn với trách nhiệm cá nhân đối với tập thể, cộng đồng.	U	G3.1 G3.2 G3.3	
12	CHP12	Phân tích, đánh giá được sự cần thiết của việc học tập, nghiên cứu suốt đời và vận dụng tư tưởng Hồ Chí Minh trong cuộc sống.	T, U	G3.1 G3.2 G3.3	

(*) I (Introduce): giới thiệu; T (Teach): dạy; U (Utilize): sử dụng

6. Hình thức, phương pháp và trọng số đánh giá kết quả học phần

Hình thức đánh giá	Nội dung chi tiết	Phương pháp đánh giá (đánh dấu X)				Ký hiệu bài đánh giá	Trọng số đánh giá	Ghi chú
		Viết	Trắc nghiệm	Vấn đáp	Khác			
Đánh giá quá trình	- Chuyên cần - Tham gia học tập trên lớp tích cực, hăng hái phát biểu. -Thuyết trình nhóm					ĐG1 (tổng điểm từ ĐG1.1 đến ĐG1.6)	30%	
Điểm kiểm tra giữa kỳ		X	X	X		ĐG1.1	20%	



Đánh giá tổng kết	Điểm cuối học kỳ	X				ĐG2	50%	Điểm bài thi + điểm thường (tối đa 20%=2 điểm)
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7. **Thang điểm đánh giá:** theo thang điểm 100.

8. **Kế hoạch giảng dạy chi tiết của học phần :** Ghi chi tiết đến 2 cấp (chương và bài).

STT Buổi (3 tiết/ buổi)	Tên bài giảng của học phần (Ghi chi tiết tên chương và bài giảng của mỗi chương)	Liên kết với CĐR học phần	Hoạt động dạy và học						Phương pháp dạy học (thuyết trình; thảo luận; các phương pháp dạy học tích cực/lấy người học làm trung tâm...)	Bài đánh giá
			Số tiết lên lớp				SV tự nghiên cứu, tự học			
			Lý thuyết	Thực hành/ thực tập	Bài tập	Thảo luận/ khác	Số tiết	Ghi chú (nếu có)		
1/2	Chương 1. Khái niệm, đối tượng, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh		02						Thuyết trình	ĐG1.1; ĐG1.6; ĐG2
2/2	Chương 2. Cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh		02						Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
3/2	Chương 2 (tiếp)		01			01			Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
4/2	Chương 2 (tiếp)		02						Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
5/2	Chương 3. Tư tưởng Hồ Chí								Thuyết trình,	ĐG1.1; ĐG1.3;

	Mình về độc lập dân tộc và chủ nghĩa xã hội		02					thảo luận nhóm	ĐG1.5; ĐG1.6; ĐG2
6/2	Chương 3(tiếp)		01			01		Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
7/2	Chương 3(tiếp)		01			01			
8/2	Chương 4. Tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam và Nhà nước của nhân dân, do nhân dân và vì nhân dân		02					Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
9/2	Chương 4 (tiếp)		02					Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
10/2	Chương 4 (tiếp)					02		Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
11/2	Chương 5. Tư tưởng Hồ Chí Minh về đại đoàn kết toàn dân tộc và đoàn kết quốc tế		02					Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
12/2	Chương 5 (tiếp)		01			01		Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
13/2	Chương 6. Tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người		02					Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
14/2	Chương 6 (tiếp)		02					Thuyết trình, thảo luận nhóm	ĐG1.1; ĐG1.3; ĐG1.5; ĐG1.6; ĐG2
15/2	Chương 6 (tiếp)					02		Thuyết trình, thảo	ĐG1.1; ĐG1.3; ĐG1.5;

TRƯỜNG ĐẠI HỌC CHÍ MINH

									luận nhóm	ĐG1.6; ĐG2
	Tổng cộng số tiết		22	...	...	08	...	...		

9. Tài liệu học tập

STT	Tên tác giả	Năm xuất bản	Tên giáo trình	Tên Nhà xuất bản	Giáo trình chính/Tài liệu tham khảo/Khác	Nơi có thể có tài liệu/trang web
1	Bộ Giáo dục và Đào tạo	2021	<i>Giáo trình Tư tưởng Hồ Chí Minh</i>	Nxb. Chính trị quốc gia Sự thật, Hà Nội.	Giáo trình chính	
2	Hồ Chí Minh	2011	<i>Toàn tập</i>	Nxb. Chính trị quốc gia Sự thật, Hà Nội.	Tài liệu tham khảo	Báo điện tử Đảng Cộng sản Việt Nam, https://hochiminh.vn/tac-pham-cua-ho-chi-minh/ho-chi-minh-toan-tap
3	Hồ Chí Minh	2016	<i>Biên niên tiểu sử</i>	Nxb. Chính trị quốc gia Sự thật, Hà Nội.	Tài liệu tham khảo	

10. Quy định của môn học

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Lý luận và Khoa học chính trị và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
- Quy định về Bài thuyết trình nhóm:
 - + Thành lập nhóm: Theo tình hình thực tế của lớp học.
 - + Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2.
 - + Bắt đầu từ tuần 4 thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến bài tập khi đi thuyết trình.
 - + Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV
- Quy định về đánh giá môn học: theo Quy định về việc giảng dạy và học tập các môn Lý luận chính trị của khoa Chính trị - Hành chính.

KT. Trưởng Bộ môn
Phó trưởng Bộ môn



Lê Văn Thông

Tp. Hồ Chí Minh, ngày 01 tháng 01 năm 2023

KT. TRƯỞNG KHOA
PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường



VIETNAM NATIONAL UNIVERSITY HCMC
- **INTERNATIONAL UNIVERSITY**

COURSE SYLLABUS

- **Course Name: Engineering Ethics and Professional Skills**

Course Code: PE020IU

1. General Information

Module designation	PE020IU – Engineering Ethics and Professional Skills This course is designed to introduce engineering students to the concepts, theory and practice of engineering ethics. It will allow students to explore the relationship between ethics and engineering, and apply classical moral theory and decision making for engineering issues encountered in academic and professional careers. This course also provides students with the professional skills: sharing ideas and concepts, team working, and presentation skills.	
Semester(s) in which the module is taught	All semesters in each academic year	
Person responsible for the module	Dr. Nguyen, Hoai Nghia, Dr. Huynh, Vo Trung Dung	
Language	English	
Relation to curriculum	☒ General ☐ Fundamental ☐ Specialization ☐ Project/Internship/Thesis	☒ Compulsory ☐ Elective
Teaching methods	Lecture, presentation, and assignments.	
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 Contact hours (lecture): 37.5 Private study including examination preparation, specified in hours: 90	
Credit points	3 credits/4.64 ECTS	
Required and recommended prerequisites for joining the module	None	

Module objectives/intended learning outcomes	Overall objectives are to equip IU students with knowledge about the philosophies of ethics, professional practice, and world culture. Students who complete the course will be able to perform the following tasks: (1) Having knowledge of the definition of engineering ethics,		
	codes of ethics, ethic philosophies, intellectual property, copyright, and fair use of copyrighted materials and research data. (2) Using different problem-solving techniques to solve ethical dilemmas. (3) Analyzing social, environmental, legal aspects, safety and sustainability issues of engineering activities.		
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to engineering professionalism and ethics	1	I
	Engineers in Society	1	T, U
	Moral choices and codes of ethics	1	T, U
	Philosophical ethics	2	I, T, U
	Ethical problem-solving techniques	1	T, U
	Engineers at the Workplaces - Leadership	2	T, U
	Truth in actions and words Academic and Research Ethics	1	T
	Commitment to Safety	1	T, U
	Internet ethics, Privacy Issues and Intellectual Property Rights	1	T, U
	Environmental ethics Sustainable engineering	1	T
	Review	1	T
Examination forms	Constructed-response test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: [1]M. W. Martin and R. Schinzinger (2010). <i>Introduction to engineering ethics</i> McGraw-Hill Education 2 nd edition [2]C. B. Fleddermann. (2011). <i>Engineering Ethics</i> , Pearson 4th edition
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Intended Learning Outcomes (ILO) is shown in the following table:

CLOs		ILOs									
		Knowledge		Skills						Attitudes	
		1	2	3	4	5	6	7	8	9	10
Knowledge (Level: 1-6)	1		2							2	
Skill (Level: 1-7)	2			3						3	
Attitudes (Level: 1-5)	3		4							4	
Contribution of CLOs to ILOs											
Bloom's Taxonomy	AVE	0.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
L,M,H conversion *			M	M						M	

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to engineering professionalism and ethics	1		Lecture, Discussion	[1] Chapter 1
2	Engineers in Society	1	HW1 and/or Quiz1	Lecture, HW1 and/or Quiz1	[1] Chapter 4
3	Moral choices and codes of ethics	1	Presentation 1	Lecture, Presentation1	[1] Chapter 2
4,5	Philosophical ethics	1, 2	HW2 and/or Quiz2	Lecture, HW2 and/or Quiz2	[1] Chapter 3
6	Ethical problem-solving techniques	2	Presentation 2, HW3 and/or Quiz3	Lecture, HW3 and/or Quiz3	[4] Chapter 4
7, 8	Engineers at the Workplaces - Leadership	1	Quiz4	Lecture, Discussion Quiz4	[1] Chapter 6
9-10	FINAL EXAM				

11-12	Truth in actions and words Academic and Research Ethics	1, 3	Quiz 5	Lecture, Quiz5	[1] Chapter 7
13	Commitment to Safety	1, 3	Quiz 6	Lecture, Discussion Quiz6	[1] Chapters 5, 6
14-15	Internet Ethics Privacy Issues and Intellectual Property Rights	1, 3	Quiz 7	Lecture, Discussion Quiz7	[1] Chapter 13
16	Environmental ethics Sustainable engineering	1, 3	Quiz 8	Lecture, Discussion Quiz8	[1] Chapter 9
17	Review				
18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes (10%)	Qz1, Qz4, 50%Pass	Qz2, Qz3 50%Pass	Qz5, Qz6, Qz7, Qz8, 50%Pass
Homework exercises/ Presentation (20%)	Presentation 1 50%Pass	Presentation 2 50%Pass	
Midterm exam (20%)	MCQ, Case study 50% Pass	MCQ, Case study 50% Pass	
Final exam (50%)			MCQ, Case study 50% Pass

Note: %Pass: % students have scores greater than 50 out of 100.

Ho Chi Minh City, / /2025

HEAD OF UNDERGRADUATE ACADEMIC AFFAIRS

Huỳnh Khả Tú



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
School of Languages

COURSE SYLLABUS

Course Name: Critical Thinking

Course Code: PE008IU/PE008WE

1. General information

Course name	- <i>Critical Thinking</i> - <i>Tư duy Biện luận</i>
Course designation	<i>This course provides students with the knowledge and practice necessary to sharpen their observation and judgment skills, enabling them to evaluate arguments effectively and construct compelling arguments of their own. Additionally, the course helps students evaluate information from diverse sources to obtain reliable data and avoid fallacies.</i>
Course type	☒ General knowledge / College Foundation Courses ☐ Fundamental/ English Foundation courses & English Core courses ☐ Specialized knowledge/ Specialization Core Courses & Specialization ☐ Electives ☐ Internship/Project/Thesis Others:.....
Semester(s) in which the course is taught	1, 2, and 3
Person responsible for the course	Assoc.Prof.Dr.Nguyễn Thị Thủy Assoc.Prof.Dr.Phạm Ngọc Trần Thanh Tú (Ph.D) Nguyễn Văn Tiếp (Ph.D) Phạm Thanh Tùng (Ph.D) Đỗ Thị Diệu Ngọc (MA)
Language	English
Relation to curriculum	☐ Compulsory ☒ Elective

Teaching methods	Lectures Discussion Pair work Group work Project-based learning								
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 hours Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 periods lectures Private study including examination preparation, specified in hours ¹ : 90 hours								
Credit points	3 credits (Theory: 3 + Practice: 0) 4.62 ECTS (<i>optional</i>)								
Number of periods	Theory: 45 Practice: 0								
Required and recommended prerequisites for joining the course	None								
Course objectives	<i>This course will enable students to</i> • know basic concepts of critical thinking • identify, construct, analyze, and evaluate inductive and deductive arguments in spoken and written forms • recognize common fallacies in everyday reasoning								
Course learning outcomes	Upon the successful completion of this course students will be able to: <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1: identify standards of and barriers to critical thinking, and argument types belonging to deductive and inductive reasoning CLO2: identify logical fallacies of relevance and insufficient evidence</td></tr> <tr> <td>Skill</td><td>CLO3: relate statements and evaluate the validity of deductive arguments using Venn diagram and truth tables CLO4: relate statements, summarize and evaluate deductive & inductive arguments</td></tr> <tr> <td>Attitude</td><td>CLO5: Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1: identify standards of and barriers to critical thinking, and argument types belonging to deductive and inductive reasoning CLO2: identify logical fallacies of relevance and insufficient evidence	Skill	CLO3: relate statements and evaluate the validity of deductive arguments using Venn diagram and truth tables CLO4: relate statements, summarize and evaluate deductive & inductive arguments	Attitude	CLO5: Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1: identify standards of and barriers to critical thinking, and argument types belonging to deductive and inductive reasoning CLO2: identify logical fallacies of relevance and insufficient evidence								
Skill	CLO3: relate statements and evaluate the validity of deductive arguments using Venn diagram and truth tables CLO4: relate statements, summarize and evaluate deductive & inductive arguments								
Attitude	CLO5: Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities								

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>		
	Weight: lecture session (3 hours)		
	Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to Critical thinking	1	I, T, U
	Recognizing arguments	1	I, T, U
	Basic logical concepts	1	I, T, U
	A little categorical logic	1	I, T, U
	A little propositional logic	1	I, T, U
	Logical fallacies I	1	I, T, U
	Logical fallacies II	1	I, T, U
	Analyzing arguments	1	I, T, U
	Evaluating arguments and truth claims	1	I, T, U
	Inductive reasoning	1	I, T, U
Group presentations + Review for exams	5	U	
Examination forms	Written exams and project presentations		
Study and examination requirements	<i>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</i> <i>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</i>		
Reading list	[1]. Bassham, J., Irwin, W., Nardone, H., & Wallace, J. M. (2022). <i>Critical Thinking: A Student's Introduction</i> (7th ed.). McGraw-Hill Education References: [2]. Moore, B.N., & Parker, R. (2009). <i>Critical thinking</i> (9th ed.). Boston: McGraw-Hill [3]. Hurley, P. J. (2012). <i>A concise introduction to logic</i> (11th ed.). Wadsworth: Cengage Learning. + Relevant web resources		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-44) and Program Learning Outcomes (PLO) (1-7) is shown in the following table:

	PLO						
	1	2	3	4	5	6	7
CLO	demonstrate an active command of linguistic theory and linguistic investigation in at least one area of linguistics. (Knowledge)	select appropriate theories and tools of translation and interpreting in their translation-interpreting practice, with regard to the aesthetic values of English literary works. (Knowledge, Skills)	perform English teaching lessons and assessment by evaluating various teaching methodologies and approaches, incorporating Global Englishes perspective, and utilizing relevant techniques and innovative technology, with respect to individual differences. (Knowledge, Skills)	develop communication strategies in an international working environment by recognizing the relationship between language and culture and analysing the cultural factors in intercultural communications in order to work effectively in multidisciplinary teams. (Knowledge, Skills)	display the competence in using languages (English and a second foreign language) flexibly and successfully for social, academic, and professional purposes. (Skills)	demonstrate the ability to conduct scientific research effectively and ethically applying appropriate research methods, technology, and critical thinking. (Skills, Attitudes)	adhere to discipline, responsibilities, and ethical practices as an individual and a team member, in both professional and social settings. (Attitudes)
1				X		X	X
2				X		X	X
3				X		X	X
4				X		X	X

**Use Bloom's Taxonomy*

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Critical thinking	1, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 1
2	Recognizing arguments	1, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 2

Week	Topic	CLO	Assessments	Learning activities	Resources
3	Basic logical concepts	2, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 3
4	A little categorical logic Quiz 1	3, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 9
5	A little propositional logic	3, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 10
6	Logical fallacies I	2, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 5
7	Logical fallacies II Quiz 2	2, 5	Ongoing assessment & Midterm exam	Lecture, Discussion	[1] Chapter 6
8	MIDTERM TEST				
9	Analyzing arguments	4, 5	Ongoing assessment & Final exam	Lecture, Discussion	[1] Chapter 7
10	Evaluating arguments and truth claims	4, 5	Ongoing assessment & Final exam	Lecture, Discussion	[1] Chapter 8
11	Inductive reasoning Quiz 3	4, 5	Ongoing assessment & Final exam	Lecture, Discussion	[1] Chapter 11
12-14	Group presentations	1-5	Ongoing assessment & Final exam	Presentation, Discussion	
15	Review for final exam Sample test	1-5	Ongoing assessment & Final exam		
	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Ongoing assessment (30%)	In-class assignments 60%Pass	In-class assignments 60%Pass	In-class assignments 60%Pass	In-class assignments 60%Pass	Attendance score 60%Pass
Midterm exam (20%)	X 60%Pass		X 60%Pass		
Final exam (50%)		X 60%Pass		X 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics

Marks for multiple choice questions:

CLO1: 2pts/correct answer

CLO2: 2pts/correct answer

CLO3: 3pts/correct answer

CLO4: 4pts/correct answer

6. Revised date: June 2nd, 2025

7. Course coordinator/Lecturer: Đỗ Thị Diệu Ngọc

- School of Languages

- Email: dtdngoc@hcmiu.edu.vn

Ho Chi Minh City, June 6th, 2025

VICE DEAN OF SCHOOL OF LANGUAGES

(Signature)



Dr. Vũ Hoa Ngân



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**

COURSE SYLLABUS

General Law

PE021IU

1. General information

Department	Office of Academic Affairs
Course classification	Foundation course
Course designation	Face to face
Semester(s) in which the course is taught	All semesters in each academic year
Person responsible for the course	Dr. Vo Tuong Huan LLM. Bui Doan Danh Thao
Language	English
Relation to curriculum	Compulsory
Teaching methods	Student-centred approach
Workload (incl. contact hours, self- study hours)	(Estimated) Total workload: 127.5 hours Contact hours (lecture, in class discussions): 37.5 hours (=45 periods) Private study including examination preparation, specified in hours ¹ : 90 hours
Credit points	3
Required and recommended prerequisites for joining the course	N/A

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	The overarching aims of this course are to: • Provide essential knowledge of Vietnamese legal system through integrated technology and real cases for social and cultural sustainability. • Raise awareness of responsibility toward others and how to stand for ending all types of legal violations, especially corruption in various social contexts. • Practice necessary skills to act as an ambassador to ensure social fairness and global equitable rights. • Use integrated online legal resources and communication tools to help the community to identify issues and develop countermeasures.								
Course learning outcomes	Upon the successful completion of this course, students will be able to: <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td> CLO1. Apply appropriate legal knowledge in the Vietnamese legal system to solve legal issues in various social contexts for a fair sustainable lifelong being. CLO1.1. Apply general knowledge on state and law to solve legal issues in various social contexts for a fair sustainable lifelong being. CLO1.2. Apply principle legal norms in some law branches such as constitution, civil, criminal, labor and administrative law to solve legal issues in various social contexts for a fair sustainable lifelong being. </td></tr> <tr> <td>Skill</td><td> CLO2. Communicate knowledge in the Vietnamese legal system to encourage people to raise their legal rights aiming for fair social/cultural moves. CLO3. Integrate ICTs to solve legal issues in various social contexts. </td></tr> <tr> <td>Attitude</td><td> CLO4. Detect the responsibility to ensure social and cultural fairness, including ending corruption, in various social contexts through understanding importance of law in social contexts. CLO5. Respond to the base for coexistence in various social contexts. </td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Apply appropriate legal knowledge in the Vietnamese legal system to solve legal issues in various social contexts for a fair sustainable lifelong being. CLO1.1. Apply general knowledge on state and law to solve legal issues in various social contexts for a fair sustainable lifelong being. CLO1.2. Apply principle legal norms in some law branches such as constitution, civil, criminal, labor and administrative law to solve legal issues in various social contexts for a fair sustainable lifelong being.	Skill	CLO2. Communicate knowledge in the Vietnamese legal system to encourage people to raise their legal rights aiming for fair social/cultural moves. CLO3. Integrate ICTs to solve legal issues in various social contexts.	Attitude	CLO4. Detect the responsibility to ensure social and cultural fairness, including ending corruption, in various social contexts through understanding importance of law in social contexts. CLO5. Respond to the base for coexistence in various social contexts.
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Skill	CLO2. Communicate knowledge in the Vietnamese legal system to encourage people to raise their legal rights aiming for fair social/cultural moves. CLO3. Integrate ICTs to solve legal issues in various social contexts.								
Attitude	CLO4. Detect the responsibility to ensure social and cultural fairness, including ending corruption, in various social contexts through understanding importance of law in social contexts. CLO5. Respond to the base for coexistence in various social contexts.								
Content	The course will introduce students to Vietnamese legal systems. In particular, students will understand their rights and obligations in the Constitution, Criminal law, administrative law, civil law, labor law and enterprise law of Vietnam. From this, students will raise awareness towards their responsibility to ensure justice, including ending corruption, in society.								

Examination forms	Multiple choice questions Case-based exams Essay exams Oral exams								
Study and examination requirements	To pass this course, the students must: • Achieve a composite mark of at least 50; and • Make a satisfactory attempt at all assessment tasks (see below). GRADING POLICY Grades can be based on the following: <table border="1"> <tr> <td>Assignment</td><td>20%</td></tr> <tr> <td>Midterm examination</td><td>30%</td></tr> <tr> <td>Final examination</td><td>50%</td></tr> <tr> <td>Total</td><td>100%</td></tr> </table> COURSE POLICIES Attendance Regular and punctual attendance at lectures and seminars is expected in this course. University regulations indicate that if students attend less than eighty percent of scheduled classes they may be refused final assessment. Exemptions may only be made on eligible medical grounds. Workload It is expected that the students will spend at least <i>six</i> hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where they need to complete assignments or prepare for examinations, the workload may be greater. Over-commitment has been a cause of failure for many students. They should take the required workload into account when planning how to balance study with part-time jobs and other activities. General Conduct and Behaviour The students are expected to conduct themselves with consideration and respect for the needs of fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students will be asked to leave the class. The use of laptops is also encouraged during law lessons only to search for materials online. More information on student conduct is available on the university webpage. Keeping informed The students should take note of all announcements made in lectures or on the course's Blackboard, and another announced mean of communications. From time to time, the university will send important announcements to their university e-mail addresses without providing a paper copy. The students will be deemed to have received this information. Academic honesty and plagiarism Plagiarism is the presentation of the thoughts or work of another as	Assignment	20%	Midterm examination	30%	Final examination	50%	Total	100%
Assignment	20%								
Midterm examination	30%								
Final examination	50%								
Total	100%								

	one's own. Students are also reminded that careful time management is an important part of the study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items. The university regards plagiarism as a form of academic misconduct and has very strict rules regarding plagiarism. Special consideration Requests for special consideration (for final examination only) must be made to the Office of Academic Affairs within one week after the examination. General policy and information on special consideration can be found at the Office of Academic Affairs. Absence on the Mid-term is not allowed, or in special cases approved by Lecturer can be replaced with relevant Assignment. Meeting up with the lecturers after classes Students must make an appointment via emails if they want to meet up with the lecturer after classes and be on time. If there are any changes to the scheduled time, students must inform the lecturer immediately.
Reading list	Please note that it is very important to gain familiarity with the subject matter in the readings and cases available on Blackboard and the internet <i>before</i> attendance in classes. Required Course Texts and Materials Legal Texts: 1. Constitution of Vietnam - 2013 2. Civil Code of Vietnam - 2015 3. Criminal Code of Vietnam – 2015 (amended in 2017) 4. Law on Law on Handling of Administrative Violations 2012 5. Law on Enterprises – 2020 6. Labour Code 2019 7. Law on anti-corruption 2018 Available at https://luatvietnam.vn/ or Blackboard <u>Books</u>: • PGS.TS. Phan Trung Hien, <i>Giáo trình Pháp Luật Đại cương</i>, NXB Chính Trị Quốc Gia Sự Thật 2022. • Mai Hong Quy (Chief Editor) (2nd 2017), <i>Introduction to Vietnamese Law</i>, Hong Duc Publishing House. <u>Additional materials provided in Blackboard</u> The lecturer will attempt to make lecture notes and additional reading available on Blackboard. However, this is not an automatic entitlement for students doing this subject. Note that this is not a distance learning course, and you are expected to attend lectures and take notes. This way, you will get the added benefit of class interaction and demonstration. Optional Course Texts and Materials <u>Recommended Internet sites</u> UNCTAD (United Nations Conference on Trade and Development) WTO (World Trade Organization)

	MOIT - Vietnam (Official website of Ministry of Industry and Trade) MPI - Vietnam (Official website of Ministry of Planning and Investment) <u>Other Resources, Support and Information</u> Additional learning assistance is available for students in this course and will be made available on Blackboard. Academic journal articles are available through connections via the VNU - Central Library. Recommended articles will be duly informed to the students. <u>Books:</u> • Nguyen Phu Trong, <i>Kiên quyết, kiên trì đấu tranh phòng, chống tham nhũng, tiêu cực, góp phần xây dựng đảng và nhà nước ta ngày càng trong sạch, vững mạnh</i>, NXB Chính Trị Quốc Gia Sự Thật 2023. • University of Law Ho Chi Minh City, <i>Giáo trình luật Hiến pháp Việt nam</i>, NXB Hồng Đức 2023. • University of Law Ho Chi Minh City, <i>Giáo trình Luật hành chính</i>, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, <i>Giáo trình Luật hình sự Việt Nam</i>, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, <i>Giáo trình Luật dân sự Việt Nam</i>, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, <i>Giáo trình Luật lao động Việt Nam</i>, NXB Hồng Đức 2022. University of Law Ho Chi Minh City, <i>Giáo trình pháp luật về chủ thể kinh doanh</i>, NXB Hồng Đức 2022.
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2. Learning Outcomes Matrix (optional)

- The relationship between Course Learning Outcomes (SLO) (1-5) and Program/Student Learning Outcomes (PLO/SLO) (1 - 10) is shown in the following table:

	PLO/SLO									
SLO	1	2	3	4	5	6	7	8	9	10
1	R,M					R,M	R,M	R,M	R,M	R,M
2			R,M							
3			R,M							
4				R,M						
5					R,M					

R: Reinforced M: Mastery

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
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1	Introduction to State • What is State? • Nature of state • Forms of state • Functions of state • Introduction to structure of Vietnamese state	1-5 (level I - introduced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT - Introduction to Vietnamese legal system available on Blackboard
2	Introduction to law? What is law? Nature of law • Forms of law • Structure of law • Categorization of legal system. • Enforcement Breach of law and liabilities for breach of law • Introduction to structure of • Vietnamese legal system	1-5 (level I - introduced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT - Introduction to Vietnamese legal system available on Blackboard
3	Constitutional Law • General introduction on Vietnamese Constitution and its nature and basic principles. • Political, economic and other regimes of Vietnam • Basic rights and responsibilities of citizens. • Relationship between citizens and the State. • Structure, functions and duties of Vietnamese state, especially in prevention of corruption	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPTs– Constitutional law available on Blackboard Constitution 2013 available on Blackboard
4	Constitutional Law (Cont) • Structure and functions and duties of Vietnamese state Duties of the state in prevention of corruption	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPTs– Constitutional law available on Blackboard Constitution 2013 available on Blackboard

5	Administrative Law • Definition and nature of administrative law • Administrative law violations Liabilities for breach of administrative law, exemption from the liability	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies and law on anti-corruption	PPT– Administrative law available on Blackboard Law on handling administrative violations 2012, and Law on anti-corruption 2018 available on Blackboard
6	Criminal Law • Definition and nature of criminal law • Crimes • Punishments	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies, especially cases related to corruption	PPT– Criminal law available on Blackboard Criminal code 2015 available on Blackboard
7	Criminal Law (Cont) • Crimes related to corruption • Punishments for corruption	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies, especially cases related to corruption	PPT– Criminal law available on Blackboard Criminal code 2015 available on Blackboard
8	Revision for mid-term exam		Quizzes Projects		
9	Civil Law (Part I) • Definition and nature of Civil law relationship • Subject of civil law • Property and ownership Civil transactions	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Civil law available on Blackboard Civil code 2015 available on Blackboard
10	Civil Law (Part II) • Contracts	1-5 (Level	Tests Peer	Discussions Case studies	PPT– Civil law

	- Definitions - Formation of contracts - Validity of contracts Liability for breach of contracts	M - Master y)	evaluations Class-performance evaluations		available on Blackboard Civil code 2015 available on Blackboard
11	Civil Law (Part III) • Inheritance - Testamentary inheritance Intestacy	1-5 (Level M - Master y)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Civil law available on Blackboard Civil code 2015 available on Blackboard
12	Law on Enterprises • Introduction to law on enterprises • Introduction to forms, features, establishment, reorganization and dissolution of an enterprise	1-5 (Level I - Introduced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Law on enterprises available on Blackboard Law on enterprises 2020 available on Blackboard
13	Labor Law • Definition, and nature of labour law • Employees and employers • Working time, and resting time Salary (including salary for overtime working hours)	1-5 (Level M - Master y)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Labor law available on Blackboard Labor code 2019 available on Blackboard
14	Labour Law (Cont.) • Employment contracts • Labor disciplines Dispute settlements	1-5 (Level M - Master y)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Labor law available on Blackboard Labor code 2019 Available on Blackboard
15	Revision/ Tutoring classes		Quizzes Projects		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In class evaluation (20%)	70% pass	80% pass	100% pass	100% pass	100% pass
Midterm examination (30%)	70% pass	80% pass	100% pass	100% pass	100% pass
Final examination (50%)	70% pass	80% pass	100% pass	100% pass	100% pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics

N o.	CLOs	Criteria	COMPLETELY FAIL Below 30%	INADEQUATE 30% – 49%	ADEQUATE 50% - 69%	ABOVE AVERAGE 70% - 89%	EXEMPLARY ≥ 90%
1	CLO 1	Organization and clarification	No evidence of organization and coherence	Does not organize ideas logically and with clarification Limited evidence of coherence Ideas lack consistency	Generally organized logically, with evidence of progression Occasionally, there may be a lack of focus or ideas may be tangential	Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped	Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic
2		Originality and usefulness of the analysis	Shows no ability to identify legal issues or a clear inability to gather the facts	Demonstrates an incomplete grasp of the task. There is no overall sense of creative coherence. Arguments are addressed incompletely.	Shows ability to identify legal issues, gather the facts and develop claims. Argument are addressed well but no links with evidence	Shows strong ability to identify legal issues, gather the fact and develop claims as well as link claims with evidence. Overall, an acceptable solution is offered and explained	Shows strong ability to identify legal issues, gather the facts and develop claims as well as link claims with evidence. Satisfactory solutions are offered and supported

3		Use of data/information	Shows no effort to incorporate information from primary and secondary sources	Shows little Information from sources. Poor handling of sources	Shows moderate amount of source information incorporated. Some key points supported by sources. Quotations may be poorly integrated into paragraphs. Some possible problems with source citations	Draws upon sources to support most points. Some evidence may not support arguments or may appear where inappropriate. Quotations integrated well into paragraphs. Sources cited correctly	Draws upon primary and secondary source information in useful and illuminating ways to support key points. Excellent integration of quoted material into paragraphs. Source cited correctly
4	CLO2	Use of frameworks	Shows no effort to structure problems in correspondence to theoretical frameworks	Shows limited ability to structure problems in correspondence to theoretical frameworks	Shows effort to link problems with the theoretical frameworks. There are still some mistakes	Shows ability to structure problems in correspondence to theoretical frameworks correctly. Minor mistakes in resolving problems	Shows ability to structure problems in correspondence to theoretical frameworks correctly. The problems are well resolved
5		Quality of arguments	Shows no effort to construct logical arguments. Fails to support analysis	Shows little attempt to offer support for key claims or to relate evidence to analysis. Reasons offered are irrelevant.	Shows argument of poor quality. Weak, undeveloped reasons are offered to support key claims	Shows clear, relevant and logical arguments.	Shows identifiable, reasonable and sound arguments. Clear reasons are offered to support key claims.

Ho Chi Minh City, May 2023

Head of Office of Academic Affairs



Dr. N. L. K. T. T.



**- VIETNAM NATIONAL UNIVERSITY HCMC
- INTERNATIONAL UNIVERSITY**

School of Languages

COURSE SYLLABUS

- Course Name: Writing AE1

Course Code: **EN007IU**

1. General information

Course name	<i>-(in English)</i> WRITING AE1 (Academic Writing) <i>-(in Vietnamese)</i> Viết học thuật
Course designation	<i>This course provides students with comprehensive instructions and practice in essay writing, including transforming ideas into different functions of writing such as process, cause-effect, comparison-contrast, and argumentative essays.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of School of Languages
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours ¹ : 60
Credit points	2 credits (Theory: 2 + Practice: 0) 3.08 ECTS (<i>optional</i>)
Required and recommended prerequisites for joining the course	None

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	Throughout the whole course, students are required to read university-level texts to develop the ability to read critically and to respond accurately, coherently and academically in writing. Through providing them with crucial writing skills such as brainstorming, paraphrasing, idea developing, revising, and editing, this course prepares the students for research paper writing in the next level of AE2 writing.		
Course learning outcomes	Upon the successful completion of this course, students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Follow different steps in the writing process to produce a complete essay	
	Skill	CLO2. Use signal language that are specific for different functions (describe a process, discuss the causes and effects, compare and contrast, and make arguments) CLO3. Construct a complete essay including appropriately written thesis statement, topic sentences, and restatement CLO4. Provide a counter-argument and a rebuttal in an argumentative essay.	
	Attitude	CLO5. Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities	
Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: lecture session (2 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	The process of Academic Writing	1	I, T, U
	Using Outside Sources	3	T, U
	From Paragraph to Essay	4	T, U
	Process Essays	4	T, U
	Cause/Effect Essays	4	T, U
	Comparison/ Contrast Essays	4	T, U
	Argumentative Essays	6	T, U
	Summarizing	2	U
	Review & Correction	2	U

Examination forms	Essay writing
Study and examination requirements	<i>Attendance</i> Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination. <i>Missed Tests</i> Students are not allowed to miss any of the tests (both Mid-term and Final). There are very few exceptions. Only with extremely reasonable excuses (eg. certified paper from doctors), students may re-take the examination. <i>Class Behaviors</i> Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Writing AE1 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below: - Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request. - Participate fully and constructively in all course activities and discussions (if any). - Display appropriate courtesy to all involved in the class. - Provide constructive feedback to faculty members regarding their performance. <i>Plagiarism</i> Students are warned not to copy from other books or from their peers for all assessment tasks. Committing plagiarism will result in 0 point for the task. Students who plagiarize twice will be prohibited from sitting the final examination. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Oshima, A., & Hogue, A. (2017). <i>Longman Academic Writing Series, Level 4: Essays</i> (5th ed.). New Jersey, NJ: Pearson Longman. [2] Oshima, A., & Hogue, A. (2006). <i>Longman Academic Writing Series, Level 4: Essays</i> (4th ed.). New Jersey, NJ: Pearson Longman.

2. Learning Outcomes Matrix (optional)

3. Planned learning activities and teaching methods

Week	Topic	CLO	Learning activities	Assessments	Resources
1	The process of Academic Writing Step 1: Creating (Prewriting) Step 2: Planning (Outlining) Step 3: Writing Step 4: Polishing <i>Using Outside Sources</i> Paraphrasing Plagiarism and how to avoid plagiarism	1, 5	Lecture Group work Individual writing	Ongoing assessment & Midterm exam	[2] pp. 265-279 [1] pp. 58-65
2	Using Outside Sources (Cont'd) Strategies for writing a successful summary	5	Lecture Group work Individual writing	Ongoing assessment & Midterm exam	[1] pp. 58 - 72
3 & 4	Review/ Correction: Lecturer gives feedback to one or two students' writings in class. From Paragraph to Essay The introductory paragraph: - General statements & Introductory techniques - Thesis statements & Logical division of ideas Body paragraphs: - Topic sentences The concluding paragraph: - Restatement Final thoughts Outlines of essays	1,3,5	Lecture Group work Individual writing	Ongoing assessment & Midterm exam	[1] pp. 74–100
5	Process Essays Introduction Analyzing the models Thesis statements for process essays Transitional signals	2,3,5	Lecture Group work Individual writing	Ongoing assessment & Midterm exam	[1] pp. 101-115
6	lecturer's choice: - How to cook a favorite food - How to do a favorite hobby - How to succeed in your major area or professional field - How to accomplish an academic task (register for classes, apply for a scholarship, pass an exam, etc.)	2,3,5	Lecture Group work Individual writing	Ongoing assessment & Midterm exam	[1] pp. 101-115
7	Cause/ Effect Essays Introduction Analyzing the models	2,3,5	Lecture Group work	Ongoing assessment & Midterm exam	[1] pp. 116-132

	Organization Signal words and phrases		Individual writing		
8	Cause/ Effect Essays (Cont'd) Review/ Correction: Lecturer gives feedback to one or two students' writings in class. <u>In-class Writing:</u> Write the introduction, ONE body paragraph and the conclusion on one of the two topics left (except for the ones that has been worked on in class and assigned as homework) or a topic of the lecturer's choice: • The cause of obesity • The effects of involvement in sports on young children • The causes of stress in college students • The effects of regular reading on students' lives	2,3,5	Lecture Group work Individual writing	Ongoing assessment & Midterm exam	[1] pp. 116 - 132
	MIDTERM EXAMINATION				
9	Comparison/ Contrast Essays Introduction Analyzing the models Organization: • Points of comparison • Point-by-point organization • Block organization Comparison and Contrast signal words	2,3,5	Lecture Group work Individual writing	Ongoing assessment & Final exam	[1] pp. 133-151
10	Comparison/ Contrast Essays (Cont'd) Review/ Correction: Lecturer gives feedback to one or two students' writings in class. <u>In-class Assignment:</u> Write a compare and contrast essay on the topic left or a topic of the lecturer's choice: • Compare and contrast the relationship between parents and children in two different cultures • Compare and contrast the university cultures in two different countries • Compare and contrast the cultures of a small town and a big city	2,3,5	Lecture Group work Individual writing	Ongoing assessment & Final exam	[1] pp. 133-151
11 &	Argumentative Essays	2,3,4,	Lecture	Ongoing	[1] pp. 152-

12	Introduction Analyzing the model Organization: Block vs. Point-by-point pattern The elements of an argumentative essay: • An explanation of the issue • A clear thesis statement • A summary of the opposing arguments • Rebuttals to the opposing arguments • Your own arguments The introductory paragraph: Thesis Statement Statistics as support	5	Group work Individual writing	assessment & Final exam	168
13 & 14	Argumentative Essays (Cont'd) Review/ Correction: Lecturer gives feedback to one or two students' writings in class. In-class Writing: Write an argumentative essay on the topic left or a topic of the lecturer's choice: • Can same-sex parenting negatively influence a child's mentality? • Do famous artists have an innate talent, or do they put in great effort to improve their skills? • Is homework helpful?	2,3,4, 5	Lecture Group work Individual writing	Ongoing assessment & Final exam	[1] pp. 152-168
15	Sample final examination	2,3,4, 5	Individual writing	Ongoing assessment & Final exam	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Ongoing assessment (30%)	60% Pass	60% Pass	60% Pass	60% Pass	60% Pass
Midterm exam (30%)	60% Pass	60% Pass	60% Pass		
Final exam (40%)	60% Pass	60% Pass	60% Pass	60% Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Midterm exam rubrics (100 points)

TASK 1: Write 3 topic sentences and the restatement from a thesis statement: 40 points

Parts/ Points	Answers/ Criteria	CLO
Topic sentence 1 10 pts	o The topic sentence introduces the topic and the controlling idea (1), starting with a transition signal*.	CLO 3
Topic sentence 2 10 pts	o The topic sentence introduces the topic and the controlling idea (2), starting with a transition signal*.	CLO 3
Topic sentence 3 10 pts	o The topic sentence introduces the topic and the controlling idea (3), starting with a transition signal*.	CLO 3
Restatement 10 pts	o The 3 subtopics are well paraphrased: different words and structures while the meaning kept the same.	CLO 3

Notes:

*The students are supposed to use **a variety of connecting devices (single word, phrase, clause, or sentence)** to show their flexibility and expertise in writing.

TASK 2: Write a Cause/Effect essay: 60 points

Answers/ Criteria	Parts/ Points	CLO
Language use and Mechanics A wide variety of sentence patterns and vocabulary are presented correctly. Language used for <i>Cause-Effect Essay</i> is good and Meaning is clear. Spelling, capitalization, punctuation are correct.	10	CLO 2
Content The essay fulfills the requirements of the assignment & the topic is fully addressed. (15) The essay is interesting to read and originally written by the student. (5)	20	CLO 3
Organization Introduction: The introduction ends with a thesis statement. (10) Body: Each paragraph discusses a particular point and begins with a clear topic sentence. (5) Each paragraph has specific supporting details (fact, examples, etc.) (5) Each paragraph has cohesion and coherence. (5) Conclusion: The conclusion summarizes the main points/paraphrases the thesis statement, begins with a conclusion signal, and leaves the readers with the writer's thoughts on the topic. (5)	30	CLO 1,3,5
Total	60	

5.2. Final exam rubrics: Write an argumentative essay: 100 points

Criteria/ word count	300-350 words (100%)	CLO
Language use and mechanics (20) A wide variety of sentence patterns and vocabulary are presented correctly. Language control is good, and meaning is clear. Spelling, capitalization and punctuation are correct.	20	CLO 2
Content: (20) The essay fulfills the task requirements, and the topic is fully addressed. The content is originally created by the students.	20	CLO 3
Organization: (60) <i>Introduction:</i> The introduction has a thesis statement. (10) <i>Body:</i> At least one paragraph discusses the counter-arguments. (10) Each paragraph discusses a particular point and begins with a clear topic sentence. (10) Each paragraph has specific supporting details (fact, examples, etc.). There are no sentences that are off-topic. (10) Each paragraph has cohesion and coherence. There are transition signals to show the relationship among ideas and to link paragraphs. (10) <i>Conclusion:</i> The conclusion summarizes the main points and paraphrases the thesis statement, begins with a conclusion signal, and leaves the readers with the writer's final thought on the topic. (10)	10 10 10 10 10 10	CLO 1,3,4
Total	100	

Date revised: 19 May, 2025

Ho Chi Minh City, 19 May, 2025
Vice Dean of School of Languages


Dr. Vu Hoa Ngan



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
School of Languages

COURSE SYLLABUS
Course Name: Listening AE1
Course Code: **EN008IU**

1. General information

Course name	- (in English) LISTENING AE1 (Listening and Note-taking) - (in Vietnamese) <i>Nghe AE1 (Nghe và ghi chú)</i>
Course designation	<i>The course is designed to prepare students for effective listening and note-taking skills, so that they can pursue the courses in their majors without considerable difficulty. The course is therefore lecture-based in that the teaching and learning procedure is built up on lectures on a variety of topics such as business, science, and humanities.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of School of Languages
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, lesson Individual practice Discussion Pair work Group work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours ¹ : 60
Credit points	2 credits (Theory: 2 + Practice: 0) 3.08 ECTS (<i>optional</i>)
Number of periods	Theory: 30 Practice: 0

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None								
Course objectives	There are a number of objectives embedded in various teaching activities in Listening AE1 course: - Pre-listening activities: aim to activate students' current knowledge of the topic, and to provide them with lecture language and effective strategies in listening and note-taking to prepare themselves for the coming lecture. These activities include reading (this can be done before class meetings), discussing and reviewing what they have learned from the reading. - While-listening and post-listening activities: aim to enable students to put their newly activated knowledge and acquired strategies into work by taking notes on the lecture, using the outline given by the teacher or prepared by themselves. They are later on asked to assess their understanding based on their notes and discuss them with their classmates. Finally, as an optional activity, depending on time and students' needs, students are asked to summarize the lecture. - Follow-up activities: students are required to discuss the lecture topic and to prepare arguments for or against the topic in the debate. The purpose is to enhance students' comprehension of the lecture, and to allow them to put their acquired academic language into practice, and to experience the atmosphere of a university lecture class.								
Course learning outcomes	Upon the successful completion of this course, students will be able to: <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. Apply knowledge of lecture language in listening comprehension via giving accurate information</td></tr> <tr> <td>Skill</td><td>CLO2. Demonstrate appropriate listening strategies and note-taking skills in taking organized notes of academic lectures. CLO3. Perform listening comprehension in writing a summary of a lecture.</td></tr> <tr> <td>Attitude</td><td>CLO4. Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Apply knowledge of lecture language in listening comprehension via giving accurate information	Skill	CLO2. Demonstrate appropriate listening strategies and note-taking skills in taking organized notes of academic lectures. CLO3. Perform listening comprehension in writing a summary of a lecture.	Attitude	CLO4. Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1. Apply knowledge of lecture language in listening comprehension via giving accurate information								
Skill	CLO2. Demonstrate appropriate listening strategies and note-taking skills in taking organized notes of academic lectures. CLO3. Perform listening comprehension in writing a summary of a lecture.								
Attitude	CLO4. Display discipline, responsibilities, and ethical practices as an individual and a team member in attending class regularly and actively participating in class activities								

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (2 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Orientation & Introduction of strategies and techniques in note-taking</td><td>2</td><td>I, T, U</td></tr><tr><td>Chapter 1: New Trends in Marketing Research</td><td>3</td><td>T, U</td></tr><tr><td>Chapter 2: Business Ethics</td><td>3</td><td>T, U</td></tr><tr><td>Chapter 3: Trends in Children’s Media Use</td><td>2</td><td>T, U</td></tr><tr><td>Chapter 4: The Changing Music Industry</td><td>2</td><td>T, U</td></tr><tr><td>Chapter 5: The Placebo Effect</td><td>2</td><td>T, U</td></tr><tr><td>Midterm Sample Test & Review</td><td>2</td><td>T, U</td></tr><tr><td>Chapter 6: Intelligent Machines</td><td>3</td><td>T, U</td></tr><tr><td>Chapter 7: Sibling Relationships</td><td>3</td><td>T, U</td></tr><tr><td>Chapter 8: Multiple Intelligences</td><td>3</td><td>T, U</td></tr><tr><td>Chapter 9: The Art of Graffiti</td><td>3</td><td>T, U</td></tr><tr><td>Final Sample Test & Review</td><td>2</td><td>T, U</td></tr></table>	Topic	Weight	Level	Orientation & Introduction of strategies and techniques in note-taking	2	I, T, U	Chapter 1: New Trends in Marketing Research	3	T, U	Chapter 2: Business Ethics	3	T, U	Chapter 3: Trends in Children’s Media Use	2	T, U	Chapter 4: The Changing Music Industry	2	T, U	Chapter 5: The Placebo Effect	2	T, U	Midterm Sample Test & Review	2	T, U	Chapter 6: Intelligent Machines	3	T, U	Chapter 7: Sibling Relationships	3	T, U	Chapter 8: Multiple Intelligences	3	T, U	Chapter 9: The Art of Graffiti	3	T, U	Final Sample Test & Review	2	T, U
Topic	Weight	Level																																						
Orientation & Introduction of strategies and techniques in note-taking	2	I, T, U																																						
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Chapter 8: Multiple Intelligences	3	T, U																																						
Chapter 9: The Art of Graffiti	3	T, U																																						
Final Sample Test & Review	2	T, U																																						
Examination forms	Paper-based tests: True-False questions, short-answer questions, open-ended questions (such as writing a summary paragraph)																																							
Study and examination requirements	<i>Attendance</i> Regular on-time attendance in this course is expected. It is compulsory that students attend atleast 80% of the course to be eligible for the final examination. <i>Missed tests</i> Students are not allowed to miss any of the tests (both on-going assessment and final test). There are very few exceptions. (Only with extremely reasonable excuses, e.g. certified paper from doctors, may students re-take the tests.) <i>Class behavior</i> Students are supposed to: • prepare thoroughly for each class in accordance with the syllabus and complete all assignments upon the instructor’s request • participate fully and constructively in all class activities (and discussions if any) • display appropriate courtesy to all involved in the class • provide constructive feedback to faculty members regarding their performance Assignments/Examination: Students must have more than 50/100 points overall to pass this course.																																							

Reading list	[1] Frazie, L., & Leeming, S. (2013). <i>Lecture ready 3</i>. Oxford: Oxford University Press. References: [2] Frazie, L., & Leeming, S. (2013). <i>Lecture ready 1, 2</i>. Oxford: Oxford University Press.
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2. Learning Outcomes Matrix (optional)

3. Planned learning activities and teaching methods

Week	Topic	CLO	Learning activities	Assessments	Resources
1	ORIENTATION <u>Chapter 1</u> New Trends in Marketing Research Recognizing topic introducing and lecture plan presenting expressions Organizing ideas by outlining	1, 2, 4	Lecture Group work Individual task	Ongoing assessment Midterm test	[1] p.2-13
2	<u>Chapter 2</u> Business Ethics Recognizing transition expressions Using symbols and abbreviations	1, 2, 4	Lecture Group work Individual task	Ongoing assessment Midterm test	[1] p.14-25
3	REVIEW	1, 2, 4		Ongoing assessment Midterm test	Designed by lecturer
4	<u>Chapter 3</u> Trends in Children's Media Use Recognizing generalization and support expressions	1, 2, 4	Lecture Group work Individual task	Ongoing assessment Midterm test	[1] p.28-39
5	<u>Chapter 4</u> The Changing Music Industry Recognizing expressions for clarification or emphasis Organizing notes by using a split-page format	1, 2, 4	Lecture Group work Individual task	Ongoing assessment Midterm test	[1] p.40-52
6	<u>Chapter 5</u> The Placebo Effect Recognizing cause and effect expressions	1, 2, 4	Lecture Group work	Ongoing assessment Midterm test	[1] p.54-65

Week	Topic	CLO	Learning activities	Assessments	Resources
	Noting causes and Effects		Individual task		
7	REVIEW SAMPLE MIDTERM EXAM + CORRECTION	1, 2, 4		Ongoing assessment Midterm test	Designed by lecturer
8	MIDTERM TEST				
9	<u>Chapter 6</u> Intelligent Machines Recognizing expressions used to predict causes and effects Using arrows to show the relationship between causes and effects	1-4	Lecture Group work Individual task	Ongoing assessment Final exam	[1] p.66-78
10	<u>Chapter 7</u> Sibling Relationships Recognizing expressions of comparison and contrast Noting comparison and contrast	1-4	Lecture Group work Individual task Lecture Group work Individual task	Ongoing assessment Final exam	[1] p.80-91
11	REVIEW <u>In-class assignment</u>	1-4 1, 2, 4		Ongoing assessment Final exam	Designed by lecturer
12	<u>Chapter 8</u> Multiple Intelligences Recognizing non-verbal signals indicating important information Representing information in list form	1-4	Lecture Group work Individual task	Ongoing assessment Final exam	[1] p.92-104
13	<u>Chapter 9</u> The Art of Graffiti Recognizing expressions of definition Reviewing and practicing all note taking strategies	1-4	Lecture Group work Individual task	Ongoing assessment Final exam	[1] p.105-117
14	REVIEW	1-4		Ongoing assessment Final exam	Designed by lecturer

Week	Topic	CLO	Learning activities	Assessments	Resources
15	<u>Sample final exam + Correction</u>	1-4		Ongoing assessment Final exam	
FINAL EXAMINATION					

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Ongoing assessment (30%)	60% Pass	60% Pass		60% Pass
Midterm test (20%)	Part 1 60% Pass	Part 2 60% Pass		
Final exam (50%)	Part 1 60% Pass	Part 2 60% Pass	Part 3 60% Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Rubrics for Midterm test

Part	Task	CLO
1	Listen to part of a lecture and decide whether these statements are TRUE or FALSE. (40 pts)	1
2	Listen to a talk and fill in the summary notes (60 pts)	2

5.2. Rubrics for Final exam

Part	Task	CLO
1	Listen to part of a lecture and decide whether these statements are TRUE or FALSE. (30 pts)	1
2	Listen to a talk and fill in the summary notes (50 pts)	2
3	Write a short paragraph summarizing the main ideas. (20 pts.)	3

Evaluative criteria for Part 3

1. **Content accuracy (16 pts):** All statements are accurate and relevant. Summary includes main idea and important details of the given lecture.
2. **Organization & Grammar (4 pts):** The summary is in the form of a paragraph. No/minor punctuation/grammatical/spelling errors.

Revised date: June 5th, 2025

Ho Chi Minh City, June 6th, 2025
Vice Dean of School of Languages
(Signature)

Dr. Vu Hoa Ngan



VIETNAM NATIONAL UNIVERSITY HCMC
- INTERNATIONAL UNIVERSITY
School of Languages

COURSE SYLLABUS

- **Course Name: Writing AE2**
Course Code: EN011IU

1. General information

Course name	<i>-(in English)</i> WRITING AE2 (Research Paper Writing) <i>-(in Vietnamese)</i> Viết AE2 (Viết bài nghiên cứu)
Course designation	<i>This course introduces basic concepts in research paper writing, especially the role of generalizations, definitions, classifications, and the structure of a research paper to students who attend English- medium college or university. It also provides them with methods of developing and presenting an argument, a comparison or a contrast.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of School of Languages
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours ¹ : 60
Credit points	2 credits (Theory: 2 + Practice: 0) 3.08 ECTS (<i>optional</i>)
Required and recommended prerequisites for joining the course	Previous course: Writing AE1 (EN007IU)

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	Upon completion of the course, students are able to: -Be familiarized with research paper/ academic literature in their majors ranging from natural sciences such as biology to social sciences and humanities like education, linguistics and psychology. -Read and critically respond to texts of a variety of topics ranging from natural sciences such as biology to social sciences and humanities like education, linguistics and psychology.		
Course learning outcomes	Upon the successful completion of this course, students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. State the structure of a research paper and employ appropriate academic language in writing a research paper	
	Skill	CLO2. Read critically, analyze, and annotate academic articles and journals CLO3. Employ the research writing skills obtained to work on their own paper in their major study.	
	Attitude	CLO4. Reason around ethical issues in writing research paper and avoid committing plagiarism CLO5. Attend class regularly and actively participate in class activities	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (2 hours)		
	Topic	Weight	Level
	Unit 1: The Academic Writing Process Introduction	4	I, T, U
	Unit 2: Researching and Writing	2	T, U
	Unit 3: Fundamentals & Feedback	2	T, U
	Unit 4: Definitions, Vocabulary & Clarity	2	T, U
	Unit 5: Generalizations, Facts and Honesty	4	T, U
	Unit 6: Seeing Ideas and Sharing Texts	2	T, U
	Unit 7: Description, Methods & Reality	2	T, U
	Unit 8: Results, Discussion & Relevance	2	T, U
	Unit 9: The Whole Academic Text	2	T, U
	Unit 10: Creating the Whole Text	4	T, U
	Course Review	2	U
	Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Examination forms	Open-ended questions; Essay writing	
Study and examination requirements	<i>Attendance</i> Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination.		

Assignment (Literature review)

Purpose: Students will use the knowledge of paraphrasing, summarising, developing arguments, and APA styles to write a 1,000-word literature review on a research scope of their choice.

Task:

- Follow guidelines on how to write a literature review.
- Use relevant academic writing skills such as paraphrasing, summarising, developing arguments, and APA 7th Style Guidelines – see <https://www.apastyle.org/>
- Develop arguments in relation to the research scope and identify the research gap

Notes: All papers should be typed, double-spaced, in 13-pt font, and with 1- inch margins. All papers must be original for this class. Criterion-referenced grading is used in this course.

Missed Tests

Students are not allowed to miss any of the tests (both Mid-term and Final). There are very few exceptions. Only with extremely reasonable excuses (eg. certified paper from doctors), students may re-take the examination.

Class Behaviors

Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Writing AE2 course with approximately 8-10 hours per week (both in class and self- study). Accordingly, students are supposed to follow the obligations below:

- Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request.
- Participate fully and constructively in all course activities and discussions (if any).
- Display appropriate courtesy to all involved in the class.
- Provide constructive feedback to faculty members regarding their performance.

Plagiarism

All forms of plagiarism and unauthorised collusion are seriously regarded and could result in penalties.

Plagiarism occurs when students copy or reproduce people's words or ideas and then present them as students' own work without proper acknowledgement, including when students copy the work of their fellow students.

Plagiarism in student submissions can be detected by:

- some web-based programs such as SafeAssign or Turnitin, or examiner's judgments with evidence of originals

The rater will review the paper to check if citations or references are provided properly. Penalties due to improper citations or references include:

Degree of magnitude	Description
Below 15%	Marked as it is.
15% - 25%	The score is deducted by 25% .
25% - 40%	The score is deducted by 50%
Over 40%	The score is 0 .

Notes: Part of the test is marked as it is if no plagiarism is detected. Students who plagiarize over 40% twice will be prohibited from sitting the final

	examination. <i>Assignments/Examination:</i> Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Hamp-Lyons, L., & Heasley, B. (2006). <i>Study Writing</i> . Cambridge, UK: Cambridge University Press [2] Articles and Essays taken from <i>The Allyn and Bacon Guide to Writing</i> by Ramage et al (2009), Pearson Longman. [3] Cormack, J. & Slaught, J. (2009). <i>English for academic study: Extended writing and research skills</i> . Cambridge: Cambridge University Press. Garnet Education [4] Folse, K. S. & Pugh, T. (2010). <i>Great writing 5: Greater essays</i> . Boston: Heinle, Cengage Learning. [5] Keezer, S. (Ed.) (2003). <i>Write your research report: A real-time guide</i> . New Jersey: Pearson Learning Group. [6] Kumar, R. (2019). <i>Research methodology: A step-by-step guide for beginners</i> . Sage Publications

2. Learning Outcomes Matrix (optional)

3. Planned learning activities and teaching methods

Week	Topic	CLO	Learning activities	Assessments	Resources
1	Orientation of the Course <u>Unit 1:</u> The Academic Writing Process Introduction	1, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 15
2	<u>Unit 1:</u> The Academic Writing Process (Cont.) Thinking about writing processes Distinguishing between academic and personal styles of writing Grammar of academic discourse	1, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 15-22
3	<u>Unit 2:</u> Researching and Writing Recognizing categories and classification The language of classification The structure of a research paper	1, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 25-31
4	<u>Unit 3:</u> Fundamentals & Feedback Exploring comparison and contrast structures The language of comparison and contrast Using comparisons and contrasts to	1, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 35-44

	evaluate and recommend				
5	Unit 3: Fundamentals & Feedback (Cont.) The research paper Identifying a research gap The writing process	1, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 45-49
6	Unit 4: Definitions, Vocabulary & Clarity The clarity principle The language of definition The place of definition in academic text The writing process	1, 2, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 50-59
7	Unit 5: Generalizations, Facts and Honesty Honesty principle The language of generalization	1, 2, 3	Lecture Group work Individual task	Ongoing assessment & Midterm exam	[1] pp. 60-68
8	Unit 5: Generalizations, Facts and Honesty (Cont.) Writing a literature review The writing process Brainstorming and clustering APA 7th Style Guidelines – see https://www.apastyle.org/ Sample midterm exam + Correction	1, 2, 3		Ongoing assessment & Midterm exam	[1] pp. 69-74
MID-TERM EXAMINATION					
9	Unit 6: Seeing Ideas and Sharing Texts Writing about events in time Connecting events Reading and writing about visuals Learning about peer reviews	1, 3	Lecture Group work Individual task	Ongoing Assessment & Final exam	[1] pp. 75-88
10	Unit 7: Description, Methods & Reality Describing processes and products The language for writing about processes Writing the Methods section Giving and getting formal peer feedback	1, 3	Lecture Group work Individual task	Ongoing assessment & Final exam	[1] pp. 89-103
11	Unit 8: Results, Discussion & Relevance What is an argument? The language of argument The Results and Discussion sections Finding an academic voice	1, 3	Lecture Group work Individual task	Ongoing assessment & Final exam	[1] pp. 104-118

12	Unit 9: The Whole Academic Text S-P-S-E: Focus on structure S-P-S-E in the introduction The language of coherence and connection Teacher evaluation	1, 2, 3	Lecture Group work Individual task	Ongoing assessment & Final exam	[1] pp. 119-133
13	Unit 10: Creating the Whole Text Structure of the research paper Creating your own research	1, 2, 3	Lecture Group work Individual task	Ongoing assessment & Final exam	[1] pp. 134-139
14	Unit 10: Creating the Whole Text Plagiarism Creating citations Paraphrase and summary Authorial identity	1-4	Lecture Group work Individual task	Ongoing assessment & Final exam	[1] pp. 140-148
15	<u>Sample final exam + Correction</u>	1-4		Ongoing assessment & Final exam	
FINAL EXAMINATION					

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Class participation and Assignments (30%)	60% Pass	60% Pass	60% Pass		60% Pass
Midterm exam (30%)	60% Pass		60% Pass	60% Pass	
Final exam (40%)	60% Pass		60% Pass	60% Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

Date revised: 19 May, 2025

Ho Chi Minh City, 19 May, 2025

Vice Dean of School of Languages

(Signature)

Dr. Vu Hoa Ngan



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of English

COURSE SYLLABUS

Course Name: Speaking AE2 (Effective Presentations)

Course Code: EN012IU

1. General information

Course name	- <i>(in English)</i> Speaking AE2 - <i>(in Vietnamese)</i> Tiếng Anh chuyên ngành 2
Course designation	<i>Giving presentations today becomes a vital skill for students to succeed not only in university but also at work in the future. Speaking AE2, therefore, provides students with the knowledge and skills needed to deliver effective presentations (informative and persuasive presentations).</i>
Course type	☒ General knowledge ☐ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, mini presentations
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours ² : 60
Credit points	2

² When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	Students must complete AE1 courses		
Course objectives	Speaking AE2 aims at introducing an training students many aspects of giving a presentation: building up confidence, preparing and planning, using the appropriate language, applying effective visual aids, applying delivery techniques, dealing with questions and responding, performing body language, and so on.		
Course learning outcomes	Upon the successful completion of this course, students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand many aspects of giving a presentation: building up confidence, preparing and planning, using the appropriate language, applying effective visual aids, applying delivery techniques, dealing with questions and responding, performing body language	
	Skill	CLO2. Prepare and deliver effective, formal, structured presentations that are appropriate to the specific environment and audience.	
	Attitude	CLO3. Deliver both informative and persuasive speech with confidence	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (2 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Orientation & Introduction	2	I, T, U
	Needs analysis		
	Building up confidence	2	T, U
	The first few minutes	2	T, U
	Organizing what you want to say	2	T, U
	Summarizing and concluding	2	T, U
	Using equipment	2	T, U
	Delivery techniques: Putting it all together	2	T, U
	Group presentations for the instructor’s evaluation and advice	2	U
	Introduction to persuasive speeches	2	T, U
	Methods of persuasion	2	T, U
	Maintaining interest	2	T, U
	Dealing with problems and questions	2	T, U
	Body language	2	T, U
	Individual presentations for the instructor’s evaluation and advice	4	U

Examination forms	Oral Presentations
Study and examination requirements	<i>Attendance</i> Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination. <i>Missed Tests</i> Students are not allowed to miss any of the tests (both Mid-term and Final). There are very few exceptions. Only with extremely reasonable excuses (e.g. certified paper from doctors), students may re-take the examination. <i>Class Behaviors</i> Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Speaking AE2 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below: • Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request. • Participate fully and constructively in all course activities and discussions (if any). • Display appropriate courtesy to all involved in the class. • Provide constructive feedback to faculty members regarding their performance. <i>Plagiarism</i> Students are warned not to copy from other books or from their peers for all assessment tasks. Committing plagiarism will result in 0 point for the task. Students who plagiarize twice will be prohibited from sitting the final examination.
Reading list	[1] Lowe, S, & Pile, L. (2010). <i>Presenting</i>. Singapore: Cengage Learning [2] Comfort, J. (1997). <i>Effective presentations</i>. Oxford: Oxford University Press [3] Lucas, S. (2014). <i>The art of public speaking</i> (12th edition). New York: McGraw-Hill Education. [4] Harrington, D., & Lebeau, C. (2009). <i>Speaking of speech</i>. Macmillan

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CL O	1	2	3	4	5	6
1						
2						
3						
4						

3. Planned learning activities and teaching methods

WEEK	Content	MATERIAL(S) COVERED	ACTIVITIES
WEEK 1	· Orientation & Introduction · Needs analysis	[1] <i>Presenting</i> , p. 5	Students will: ● receive an introduction to effective presentation ● think about their strength and weaknesses in presenting in English ● identify and prioritize their immediate and future needs for presenting ● share tips on improving weaknesses
WEEK 2	Building up confidence		Student will: - give a short speech about themselves to help them overcome initial shyness of standing up and speaking in public
WEEK 3	Unit 1: The first few minutes	● <i>Presenting</i>, pp. 8-13 ● <i>Effective Presentations</i>: p.7 + video clip; p.13+ video clip	Students will: ● learn the importance of making a good first impression ● learn useful phrases for greeting the audience, introducing themselves and others, and giving the purpose of their presentation
WEEK 4	Unit 3: Organizing what you want to say	● <i>Presenting</i>, pp. 22-27) ● <i>Effective Presentations</i>: p.19 + video clip	Students will: ● look at the importance of structuring their presentation ● learn the useful phrases for outlining their presentation, organizing ideas and moving between different sections of their presentation
WEEK 5	Unit 6: Summarizing and concluding	● <i>Presenting</i>, pp. 40-45 ● <i>Effective Presentations</i>: p.41 + video clip	Students will: ● look at ways of finishing a presentation effectively ● learn useful phrases for ending their presentation, summarizing, handing over and thanking
WEEK 6	Unit 2: Using equipment	● <i>Presenting</i>, pp. 14-21) ● <i>Effective Presentations</i>: p.31 + video clip	Students will: ● use equipment and visuals to support their presentation ● learn useful phrases for referring to visuals, ensuring their audience can see and expanding on notes
WEEK	Delivery	[2] <i>Effective</i>	Students will:

7	techniques: Putting it all together	<i>Presentations:</i> p.50 + video clip Assignment: Topic(s) for group presentation)	● watch a model presentation and discuss do's and don'ts for effective delivery ● pick group members and plan their presentations for Week 8
WEEK 8	Group presentations for the instructor's evaluation and advice		Students will: ● take turn to deliver a presentation on the topic(s) assigned by the instructor ● consult the instructor for advice on the mid-term exam preparation
MIDTERM EXAMINATION Students will give a five-to-six minute informative presentation on a topic to be determined.			
WEEK 9	Introduction to persuasive speeches	[3] <i>The art of public speaking</i> , Chapter 15 (Handout given by the instructor)	Students will: ● know types of persuasive speeches ● know typical organizations of a persuasive speech
WEEK 10	Methods of persuasion	[3] <i>The art of public speaking</i> , Chapter 16 (Handout given by the instructor)	Students will learn to persuade the audience by: ● building credibility ● using evidence ● reasoning ● appealing to emotions
WEEK 11	Unit 4: Maintaining interest	● <i>Presenting:</i> pp. 28-33) ● <i>Effective Presentations:</i> p.25 + video clip)	Students will: ● look at maintaining interest through effective delivery ● learn useful phrases for clarifying what you mean, checking if the audience is following and involving the audience
WEEK 12	Unit 5: Dealing with problems and questions	○ <i>Presenting:</i> pp. 34-39) ○ <i>Effective Presentations:</i> p.44 (Question time)	Students will: ● learn strategies for coping in unexpected situations ● learn useful phrases for dealing with problems and questions
WEEK 13	Unit 6: Body language	[2] <i>Effective Presentations</i> : pp.36-39	Students will: ● practise using language and body language to communicate the message clearly and persuasively ● watch video clips about body language ● learn how to control posture, eye contact, gestures and voice inflection
WEEK 14	Practice	(to be determined by the instructor)	Students will: - deliver individual or group presentations (assigned by the instructor)
WEEK 15	Wrap-up and advice	(to be determined by the instructor)	Students will: ● consult the instructor for advice on

			the final exam preparation ● continue to deliver individual or group presentations (if any)
FINAL EXAMINATION Students will deliver a seven-to-eight-minute persuasive presentation on a topic to be determined			

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
On-going Assessment (30%) (discussion, group presentation, individual presentation, and so on) <i>(It is requested that lecturers collect students' scripts or any type of evidence of their participation for possible fact check).</i>	80% Pass	80% Pass	80% Pass
Midterm exam (30%) (Students will give a five-to-six-minute informative presentation on a topic to be determined)	80% Pass	80% Pass	80% Pass
Final exam (40%) (Students will deliver a seven-to-eight-minute persuasive presentation on a topic to be determined.)	80% Pass	80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics & Marksheets

5.1. Midterm exam rubrics and marksheets

	Very Poor	Poor	Average	Good	Excellent
Pronunciation, Voice Techniques (Pauses, Volume, Speed Change, Stress, Tone, Etc)	- Mumbles, often mispronounces, very difficult to understand - Dead person talking, voice to text software does better	- Slurred speech, mispronounces some words. Difficult to understand. - Quiet, monotone, sing/song, little or no expression, boring	- Clear voice, few pronunciation errors. Some slurring. Most can understand the presentation - Some use of voice to show interest	- Crisp, clear voice, correct, precise pronunciation, all can understand. - proper volume; steady rate; enthusiasm, confidence	- Native like
Grammar & Vocabulary (Usage And Appropriateness For Audience)	- Frequent grammar or spelling errors - Inappropriate level for the audience, Misuse vocabulary	- Noticeable Errors - Often too simple or sophisticated, inconsistent. Some vocabulary incorrectly used	- Minor errors - Generally appropriate, little variation or creativity	- No errors, but simple language - Always appropriate for the audience. Excellent use of vocabulary	- No errors. Excellent use of grammar to support ideas - Creative use of language
Body Language, Gestures, Eye Contact (Turns back to audience and reads screen – 0)	- Dead person on stage - Almost no eye contact, reads notes/screen	- Excessive movement or many distracting gestures - Occasionally eye contact, mostly reads notes/screen	- Some distracting gestures, and some movement and useful gestures - Generally maintains eye contact frequently reads notes/screen	- No distracting gestures. Body language supports speech - Excellent eye contact, seldom uses notes	- Excellent use of body language - Constant eye contact, no use of notes
Organization: Intro, Main, Ending, Coherence (see RATING CHECKLIST)	- Difficult to follow as disorganized	- Generally follows outline, poor introduction or conclusion.	- Follows outline, material generally well organized. Some use of transitions and linkage of ideas. Conclusion acceptable	- Follows outline, material well organized. - Ideas clearly linked. Some use of transitions	- Excellent, clear linkage of ideas. - Good transitions Arouses interest in Introduction, and summarizes clearly main points in conclusion
Content: Relevant/ Interesting/ Accurate	- Several errors or lacks critical information	- Some errors and has irrelevant information	- Information is generally accurate, minor errors, generally meets needs of the audience	- Accurate information, related to needs of audience	- No errors, answers all needs of the audience
Visual Aids: Appropriate, Clear (Movies, sound – 0)	- Slides consist of full paragraphs of text, no or superfluous graphics - Tiny font	- Slides have full sentences and occasional superfluous graphics, Difficult to read	- Slides have short phrases, Graphics relate to text and presentation. Easily read	- Attractive, informative graphics, only key words, easily understood, Good use of masking	- Professional quality, Excellent use of visual, no unrelated graphics, easily read, supports presentation
Overall effectiveness	- Ineffective, alienated audience	- Little positive effect or exchange of info.. Audience bored	- Audience learned something, no change in attitude	- Audience generally positive and learned from presentation	- Audience was kept interested and would remember key points



ACADEMIC YEAR 2021 - 2022

DATE: _____

Student name : _____ Student ID : _____
Topic : _____

Wtg.	Criteria	Very poor	Poor	Average	Good	Excellent	Comments
15	Pronunciation & Voice Techniques (Pause, Volume, Speed Change, Stress, Tone, etc.)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
15	Language use: Grammar & Vocabulary (usage and appropriateness for audience)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
10	Body Language: Gestures, Eye contact, Facial expressions (turns back to the audience and reads from screen: 0 pt)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
20	Organization: Intro, Body, Ending, Coherence (see below)	(1-4)	(5-8)	(9-12)	(13-16)	(17-20)	
20	Content: Relevance, Accuracy	(1-4)	(5-8)	(9-12)	(13-16)	(17-20)	
10	Visual aids: Appropriateness, Clarity (Movies, sound: 0 pt)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
10	Overall effectiveness	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
FINAL SCORE: /100							

Negative points: ♦ Timing: <3m: -15pts 3m - 3m29: -10pts 3m30 - 3m59: -5pts 4m - 6m: OK >6m: -5pts

Organization:

A. Introduction

- Greeting, name, position (Good morning ladies and gentlemen. My name is __. I'm a __)
- Purpose/ Objective (The purpose of this talk is to __)
- Connect with the audience (I can see that all of you love to __)
- Outline/ Main part (I've divided my presentation into __ parts)
- Questions (Should you have any questions, please save them until the end of my presentation)

B. Body (Transitions: Let's start with __/ That brings me to __/ Firstly, Secondly, Next, Lastly)

C. Ending

- Signaling the end (That brings me to the end of my presentation)
- Summary (Let me just run over the key points again)
- Closing (Thank you very much for your attention)
- Inviting questions (I'd be glad to answer any questions you might have)

Yes No

☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

Examiner :

5.2. Final exam rubrics and marksheets

	Very Poor	Poor	Average	Good	Excellent
Pronunciation, Voice Techniques (Pauses, Volume, Speed Change, Stress, Tone, etc.) Grammar & Vocabulary (Usage and Appropriateness for Audience)	- Mumbles, often mispronounces, very difficult to understand - Dead person talking, voice to text software does better	- Sturred speech mispronounces some words. Difficult to understand - Quiet, monotone, sing-song, little or no expression, boring	- Clear voice, few pronunciation errors. Some slurring. Most can understand the presentation - Some use of voice to show interest	- Crisp, clear voice, correct, precise pronunciation, all can understand - Proper volume, steady rate, enthusiasm, confidence	Native like
Body Language: Posture, Gestures, Eye contact, Facial expression (Turns back to audience and reads screen – 0) Organization: Intro, Main, Ending, Coherence (see RATING CHECKLIST) Content: Relevant/Accurate, Informative and Persuasive Visual Aids: Appropriateness, Clarity (Use of video clip exceeding 20 seconds – 0) Question response	- Dead person on stage - Almost no eye contact, reads notes/screen	- Excessive movement or many distracting gestures - Occasionally eye contact, mostly reads notes/screen	- Some distracting gestures, and some movement and useful gestures - Generally maintains eye contact frequently reads notes/screen	- No distracting gestures. Body language supports speech - Excellent eye contact, seldom uses notes	- Excellent use of body language - Constant eye contact, no use of notes
	Difficult to follow as disorganized	Generally follows outline, poor introduction or conclusion	- Follows outline, material generally well organized. Some use of transitions and linkage of ideas - Conclusion acceptable	- Follows outline, material well organized - Ideas clearly linked. Some use of transitions	- Excellent, clear linkage of ideas - Good transitions Arouses interest in Introduction, and summarizes clearly main points in conclusion
	Several errors or lacks critical information	- Some errors and has irrelevant information - Just focus on giving information	- Information is generally accurate, minor errors - Give reasons with little or no emphasis on persuasion	- Accurate information, related to needs of audience - Give frequent emphasis on persuasion	- No errors, answers all needs of the audience - Persuade the audience well
	- Slides consist of full paragraphs of text, no or superfluous graphics - Tiny font	- Slides have full sentences and occasional superfluous graphics - Difficult to read	Slides have short phrases. Graphics relate to text and presentation. Easily read	Attractive, informative graphics, only key words, easily understood, good use of masking	Professional quality, Excellent use of visual, no unrelated graphics, easily read, supports presentation
	Welcomes the question	Listens carefully, doesn't interrupt	- Thinks before answering - Clarifies, rephrases as needed	Answers correctly and briefly	Checks to see if questioner is satisfied



ACADEMIC YEAR 2021 - 2022

DATE: _____

Student name : Student ID :
Topic :

Wtg.	Criteria	Very poor	Poor	Average	Good	Excellent	Comments
15	Pronunciation & Voice Techniques (Pause, Volume, Speed Change, Stress, Tone, etc.)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
10	Language use: Grammar & Vocabulary (usage and appropriateness for audience)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
15	Body Language: Posture, Gestures, Eye contact, Facial expression (turns back to the audience and reads from screen: 0 pt)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
15	Organization: Intro, Body, Ending, Coherence (see below)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
20	Content: Relevant, Accurate, Informative and Persuasive	(1-4)	(5-8)	(9-12)	(13-16)	(17-20)	
15	Visual aids: Appropriateness, Clarity (Movies, sound: 0 pt)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
10	Question response	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
SCORE (max.100): _____		BONUS (max.10): _____		TOTAL SCORE (max.100): _____			

Deduction points: ♦ No references: -10 ♦ Timing: <5m: -15pts 5m - 5m29: -10pts 5m30 - 5m59: -5pts > 8m: -5pts

Bonus points: Up to 10pts for creativity, which involves PowerPoint design, Organization of information, Presentation style ..

Organization:

A. Introduction

- Greeting, name, position (Good morning, ladies and gentlemen. My name is ___. I'm a ___) ☐ Yes ☐ No
- Connect with the audience (I can see that all of you love to ___) ☐ Yes ☐ No
- Purpose/ Objective (The purpose of this talk is to ___) ☐ Yes ☐ No
- Time length (My presentation should last for ___) ☐ Yes ☐ No
- Outline/ Main part (I've divided my presentation into __ parts) ☐ Yes ☐ No
- Questions (Should you have any questions, please save them until the end of my presentation) ☐ Yes ☐ No

B. Body (Transitions: Let's start with ___/ That brings me to ___/ Firstly, Secondly, Next, Lastly)

C. Ending

- Signaling the end (That brings me to the end of my presentation) ☐ Yes ☐ No
- Summary (Let me just run over the key points again) ☐ Yes ☐ No
- Closing (Thank you very much for your attention) ☐ Yes ☐ No
- Inviting questions (I'd be glad to answer any questions you might have) ☐ Yes ☐ No

Examiner : _____

6. Date revised: April, 2024

7. Course coordinator/Lecturer

- School/Department: Department of English
- Lecturer:
- Email:

Ho Chi Minh City, 22/04/2024

HEAD/DEAN OF DEPARTMENT/SCHOOL

(Signature)



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
Department of Mathematics

COURSE SYLLABUS
Course Name: Calculus 1

Course Code: **MA001IU**

1. General information

Course designation	This course equips students with basic concepts of calculus: limits, continuity, differentiation, and integration. Applications of these concepts are extensively discussed.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 120 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 (lectures) Private study including examination preparation, specified in hours ¹ : 60
Credit points	4

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None								
Course objectives	1. To provide students with the main ideas and techniques of calculus. These include limits, continuity, differentiation, and integration. 2. To introduce practical applications of these ideas and techniques, through practical examples taken from many areas of engineering, business, and life sciences. 3. To develop skills in mathematical modelling and problem solving, ability to think logically, and adapt these skills creatively to new situations								
Course learning outcomes	Upon the successful completion of this course students will be able to: <table> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> <tr> <td>Knowledge</td><td> CLO1. Have basic knowledge of limits and derivatives (Program outcomes: a) CLO2. Have basic knowledge of definite/indefinite integrals (Program outcomes: a) </td></tr> <tr> <td>Skill</td><td> CLO3. Can compute often used limits, can define and compute derivatives (Program outcomes: a, j) CLO4. Can compute standard types of integrals. Use integrals in practical situations (Program outcomes: a, j) </td></tr> <tr> <td>Attitude</td><td>CLO5. Confident when dealing with derivatives and integrals. Comfortable with using derivatives and integrals in practical situations. (Program outcome: j, k)</td></tr> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Have basic knowledge of limits and derivatives (Program outcomes: a) CLO2. Have basic knowledge of definite/indefinite integrals (Program outcomes: a)	Skill	CLO3. Can compute often used limits, can define and compute derivatives (Program outcomes: a, j) CLO4. Can compute standard types of integrals. Use integrals in practical situations (Program outcomes: a, j)	Attitude	CLO5. Confident when dealing with derivatives and integrals. Comfortable with using derivatives and integrals in practical situations. (Program outcome: j, k)
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1. Have basic knowledge of limits and derivatives (Program outcomes: a) CLO2. Have basic knowledge of definite/indefinite integrals (Program outcomes: a)								
Skill	CLO3. Can compute often used limits, can define and compute derivatives (Program outcomes: a, j) CLO4. Can compute standard types of integrals. Use integrals in practical situations (Program outcomes: a, j)								
Attitude	CLO5. Confident when dealing with derivatives and integrals. Comfortable with using derivatives and integrals in practical situations. (Program outcome: j, k)								

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>																																																
	Weight: lecture session (4 hours)																																																
	Teaching levels: I (Introduce); T (Teach); U (Utilize)																																																
	<table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Review: Set theory and mapping. Functions and Graphs, Inverse Functions, Exponential and Logarithmic Functions</td><td>1</td><td>I, T</td></tr><tr><td>Parametric Curves, Limit. One-sided Limits, Laws of Limits</td><td>1</td><td>I, T</td></tr><tr><td>Evaluating Limits. The Squeeze Theorem. Continuity. The Intermediate Value Theorem</td><td>1</td><td>T, U</td></tr><tr><td>Tangent Lines and Velocity Problems. Rates of Change, Derivative.</td><td>1</td><td>T, U</td></tr><tr><td>Higher-Order Derivatives, Rules of Differentiation. Rates of Change in the Natural and Social Sciences</td><td>1</td><td>T, U</td></tr><tr><td>Implicit Differentiation, Differentiation of Inverse Functions,</td><td>1</td><td>T, U</td></tr><tr><td>Logarithmic Differentiation, Linear Approximations. Differentials.</td><td>1</td><td>T, U</td></tr><tr><td>Related Rates, Maxima and Minima. Critical Point, The Mean Value Theorem.</td><td>1</td><td>T, U</td></tr><tr><td>The First and Second Derivative Test, Concavity. Shapes of Curves, Curve Sketching</td><td>1</td><td>T, U</td></tr><tr><td>Indeterminate Forms and l'Hôpital's Rules, Maxima and Minima Problems, Newton's Method</td><td>1</td><td>T, U</td></tr><tr><td>Anti-derivatives and Indefinite Integrals, The Definite Integral</td><td>1</td><td>I, T</td></tr><tr><td>Properties of the Definite Integral. The Fundamental Theorem of Calculus, Integration by Substitution</td><td>1</td><td>I, T, U</td></tr><tr><td>Integration by Parts, Partial Fractions, Numerical Integration,</td><td>1</td><td>T, U</td></tr><tr><td>Improper Integrals, Areas between Curves Areas Enclosed by Parametric Curves</td><td>1</td><td>T, U</td></tr><tr><td>Volumes, Arc Length, Applications to Engineering, Economics and Science</td><td>1</td><td>T, U</td></tr></table>	Topic	Weight	Level	Review: Set theory and mapping. Functions and Graphs, Inverse Functions, Exponential and Logarithmic Functions	1	I, T	Parametric Curves, Limit. One-sided Limits, Laws of Limits	1	I, T	Evaluating Limits. The Squeeze Theorem. Continuity. The Intermediate Value Theorem	1	T, U	Tangent Lines and Velocity Problems. Rates of Change, Derivative.	1	T, U	Higher-Order Derivatives, Rules of Differentiation. Rates of Change in the Natural and Social Sciences	1	T, U	Implicit Differentiation, Differentiation of Inverse Functions,	1	T, U	Logarithmic Differentiation, Linear Approximations. Differentials.	1	T, U	Related Rates, Maxima and Minima. Critical Point, The Mean Value Theorem.	1	T, U	The First and Second Derivative Test, Concavity. Shapes of Curves, Curve Sketching	1	T, U	Indeterminate Forms and l'Hôpital's Rules, Maxima and Minima Problems, Newton's Method	1	T, U	Anti-derivatives and Indefinite Integrals, The Definite Integral	1	I, T	Properties of the Definite Integral. The Fundamental Theorem of Calculus, Integration by Substitution	1	I, T, U	Integration by Parts, Partial Fractions, Numerical Integration,	1	T, U	Improper Integrals, Areas between Curves Areas Enclosed by Parametric Curves	1	T, U	Volumes, Arc Length, Applications to Engineering, Economics and Science	1	T, U
	Topic	Weight	Level																																														
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Volumes, Arc Length, Applications to Engineering, Economics and Science	1	T, U																																															
Examination forms	Written examination																																																
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.																																																

Reading list	J. Stewart, <i>Calculus</i> , Thomson Learning, 7 th edition, 2012.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (PLO) (1-7) is shown in the following table:

	PLO						
CLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7
1	4	4					
2	4	3					
3			4	3			
4			3	3			
5							3

3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	Review: Set theory and mapping. Functions and Graphs, Inverse Functions Exponential and Logarithmic Functions	1,3		Lecture
2	Parametric Curves, Limit. One-sided Limits Laws of Limits.	1,3	Quiz	Lectures and Quiz
3	Evaluating Limits. The Squeeze Theorem. Continuity. The Intermediate Value Theorem	3, 5	Quiz	Lectures and Quiz
4	The Tangent and Velocity Problems. Rates of Change, The Derivative.	3, 5	HW1	Lectures and HW
5	Higher-Order Derivatives, Rules of Differentiation. Rates of Change in the Natural and Social Sciences	3, 5	Quiz	Lectures and Quiz
6	Implicit Differentiation, Differentiation of Inverse Functions,	3, 5	HW2	Lectures and HW
7	Logarithmic Differentiation, Linear Approximations. Differentials.	3, 5	Quiz	Lectures and Quiz

8	Related Rates, Maxima and Minima. Critical Point, The Mean Value Theorem.	3, 5	HW3	Lectures and HW
Midterm Exam				
9	The First and Second Derivative Test, Concavity. Shapes of Curves, Curve Sketching	2, 4	Quiz	Lectures and Quiz
10	Indeterminate Forms and l'Hôpital's Rules, Maxima and Minima Problems, Newton's Method	2, 4	Quiz	Lectures and Quiz
11	Anti-derivatives and Indefinite Integrals, The Definite Integral	4, 5	HW4	Lectures and HW
12	Properties of the Definite Integral. The Fundamental Theorem of Calculus, Integration by Substitution	2, 4	Quiz	Lectures and Quiz
13	Integration by Parts, Partial Fractions, Numerical Integration,	4, 5	Quiz	Lectures and Quiz
14	Improper Integrals, Areas between Curves Areas Enclosed by Parametric Curves	2, 4, 5	HW5	Lectures and HW
15	Volumes, Arc Length, Applications to Engineering, Economics and Science	1, 2, 3, 4, 5	Exercises	
Final Exam		1, 2, 3, 4, 5		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80%Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%

Final exam (50%)		Q1, Q2 80%Pass		Q3, Q4 70%Pass	Q5 50%
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Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: May 2025

Ho Chi Minh City, 03/06/2025

Department of Mathematics



Nguyễn Minh Quân



VIETNAM NATIONAL UNIVERSITY HCMC
-INTERNATIONAL UNIVERSITY
Department of Physics

COURSE SYLLABUS

- **Course Name: Physics 1 (General Mechanics)**
Course Code: PH013IU

1. General information

Course designation	<i>This subject will provide an introduction to mechanics including: concepts and principles of kinetics, dynamics, energetics of motion of a particle and a rigid body.</i>
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assos. Prof. Phan Bảo Ngọc Dr. Phan Hiền Vũ
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 30 Private study including examination preparation, specified in hours ¹ : 60
Credit points	2
Required and recommended prerequisites for joining the course	None

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	This course will provide students with: 1. The basic knowledge of general Mechanics Physics 2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques 3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment 4. Confidence and fluency in discussing physics in English.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand basic knowledge of kinematics, dynamics, and laws of conservation of a mechanical system. CLO2. Apply knowledge of physics to solving problems in science and engineering	
	Skill	CLO3. Apply skills to analyzing and solving problems in science and engineering	
	Attitude	CLO4. Communicate effectively in writing manner	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (2 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Chapter 1: Bases of Kinematics	2	I, T,U
	Chapter 2: The Law of Motion	2	I, T,U
	Chapter 3: Work and Mechanical Energy	3	I, T,U
	Chapter 4: Linear Momentum and Collisions	2	I, T,U
	Chapter 5: Rotation of a Rigid Object About a Fixed Axis	2	I, T,U
	Chapter 6: Equilibrium and Elasticity	2	I
	Chapter 7: Universal Gravitation	2	I
	Examination forms	Short-answer questions	
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		

Reading list	[1]Lecture Notes [2] Halliday D., Resnick R. and Walker, J. (2011) <i>Principles of Physics</i>, 9th edition, John Willey and Sons, Inc. [3] Alonso M. and Finn E.J. (1992) <i>Physics</i>, Addison-Wesley Publishing Company. [4]Faughn/Serway (2006) <i>Serway's College Physics</i>, Thomson Brooks/Cole.
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Intended Learning Outcomes (ILO) (1-10) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-3	Chapter 1: Basis of Kinematics Motion in One Dimension: - Position, Velocity, and Acceleration - One-Dimensional Motion with Constant Acceleration - Freely Falling Objects Motion in Two Dimensions: - Position, Velocity, and Acceleration Vectors - Two-Dimensional Motion with Constant Acceleration. Projectile Motion - Circular Motion. Tangential and Radial Acceleration - Relative Velocity and Relative Acceleration	1	Assignment/ Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 1 [2] 1, 2, 3, 4
4-7	Chapter 2: Laws of Motion - Newton's First Law and Inertial Frames - Newton's Second Law - Newton's Third Law - Some Applications of Newton's Laws: - Gravitational Force and Weight	1	Assignment/ Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 2 [2] 5, 6

	- Forces of Friction - Uniform Circular Motion and Non-uniform Circular Motion - Motion in the Presence of Resistive Forces - Motion in Accelerated Frames				
8	Chapter 3: Work and Mechanical Energy - Work Done by Force. Power Kinetic Energy and Work. Kinetic Energy Theorem	3	Assignment/ /Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 3 [2] 7, 8
Midterm					
9	- Potential Energy of a System - Conservation of Mechanical Energy - Conservative and Non-conservative Forces - Changes in Mechanical Energy for Non-conservative Forces Relationship Between Conservative Forces and Potential Energy			Lecture, Discussion, Inclass-Quiz	
10-11	Chapter 4: Linear Momentum and Collisions - Linear Momentum and Its Conservation - Impulse and Momentum Collisions in One Dimension and Two Dimensions		Assignment/ /Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 4 [2] 9
12-14	Chapter 5: Rotation of a Rigid Object About a Fixed Axis - Rotational Kinematics. Rotational Motion with Constant Angular Acceleration - Torque and Angular Acceleration - Moments of Inertia - Rotational Kinetic Energy - Rolling Motion of a Rigid Object - Angular Momentum of a Rotating Rigid Object Conservation of Angular Momentum	3	Assignment/ /Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 5 [2] 10, 11
15	Chapter 6: Equilibrium and Elasticity The Conditions for Equilibrium The Center of Gravity Chapter 7: Universal Gravitation Newton's Law of Gravitation Kepler's Laws and the Motion of Planets The Gravitational Field and	3	Assignment/ /Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 6, 7 [2] 12, 13

	Gravitational and Potential Energy				
Final exam					

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (10%)	Qz1 60%Pass	Qz2 60%Pass		Qz3 60%Pass
Homework exercises (20%)	HW2 50%Pass		HW1, HW3, HW4 50%Pass	
Midterm exam (30%)		Q3 50%Pass	Q1, Q2 50%Pass	
Final exam (40%)	Part I 50%Pass		Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max.	Score	Comments
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		

Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.

Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: December 27, 2022

Ho Chi Minh City, 27/12/2022

Chair of Department of Physics





**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Biology

Course Code: BT311IU

1. General information

Course name	- <i>(in English)</i> Biology - <i>(in Vietnamese)</i> Sinh học đại cương
Course designation	The key concepts in the course are organized into units on biochemistry, molecular biology, cell biology, genetics, evolution, and ecology. Basic principles and theories of biology addressed in the course include: the chemical basis of life; cell theory; energy flow and management; gene and gene products (including inheritance and gene expression); evolution, especially by means of natural selection; and studies of ecological populations and their interactions with living and non-living aspects of their environment.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. Prof. Bui Hong Thuy. Email: bhthuy@hcmiu.edu.vn MBT Hoang Thi Lan Xuan. Email: htlx@hcmiu.edu.vn
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, Presentation, Quiz, Homework.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 Private study including examination preparation, specified in hours ⁴ : 90
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0

⁴ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None	
Course objectives	The principal objective of this course is for students to develop a fundamental understanding of the key concepts, principles, and theories of modern biology. This objective will provide the foundation necessary for subsequent courses in the biological sciences. how natural selection ultimately underpins all biological processes and how evolution has generated biological diversity.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understanding of foundation in basic biological principles, theories of modern biology and interactions between organisms and their environments. CLO2. To develop the ideas of the uniqueness and diversity of life and the interrelationships among living organisms.
	Skill	CLO3. Applying elementary mathematics, chemistry to biology. Acquire skills in formulating hypotheses, designing, and conducting simple experiments to test them.
	Attitude	CLO4. To develop a working knowledge of study which are necessary for a proper understanding of biological concepts and record evidence of their verbal, written and graphic communication skills.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to Biology and Course outline	1	I, T
	The chemistry of Life-The Chemical Context of Life	1	I, T
	A Tour of the Cell- Membrane Structure and Function- Cellular Energy- Cell Communication	2	I, T
	Cell Cycle-Genetic Basis of Life- Regulation of Gene expression	2.5	I, T
	Gene Activity and Biotechnology	1.5	T, U
	The Evolutionary History of Biological Diversity, The Evolution of Populations; The Origin of Species	2	I, T
	Animal Form and Function- Basic principles- Endocrine system; Reproduction and Development; Nervous system; Sensory & motor mechanisms.	2	T, U
	Structure and Function of Plants: Structure, Reproduction and Development	1	T, U
	Ecology: Interactions between organisms and the environment	1	T, U
	Summary-Review	1	T, U
Examination forms	Multiple-choice questions, short-answer questions		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	Textbook: [1] Reece, J.B., Urry, L.A., Cain, M.L., Wasserman, S.A., Minorsky, P.V., Jackson, R.B., 2014. Campbell Biology. 10 th Edition, Benjamin Cummings. Book Reference: [2] Gilbert, S.F., Barresi, M.J. F., 2016. Developmental Biology, 11th Edition. Sinauer Associates, Inc. MA Gilbert, S.F., Barresi, M.J. F., 2016. Developmental Biology, 11th Edition. Sinauer Associates, Inc. MA. Article References: [3] To be provided (Note: Articles will be updated every year)		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-8) is shown in the following table:

	SLO							
CLO	1	2	3	4	5	6	7	8
1	x							
2		x						
3			x					
4					x			

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Biology- Course outline	1	Quizzes	Lecture, Discussion, In Class-Quiz	1, 2, 3
2	The chemistry of Life-The Chemical Context of Life	1	Group work 1	Lecture, Discussion, In Class-Quiz	1, 2
3	A Tour of the Cell-Membrane Structure and Function.	1		Lecture, Presentation	1, 2
4	Cellular Energy-Cellular Respiration Photosynthesis-Cell Communication	1	HW1	Lecture, Presentation	1, 2
5	The Cell Cycle- Genetic Basis of Life Mendel and the Gene Idea.	1, 2		Lecture, Presentation	1, 2
6	The Molecular Basis of Inheritance- From Gene to Protein-Regulation of Gene Expression.	1, 2	HW2	Lecture, Presentation	1, 3
7	Meiosis-Gamete and Sexual Life Cycles	1, 3		Lecture, Presentation	1, 3
8	Gene Activity and Biotechnology	1, 4		Lecture, Discussion, In Class-Quiz	1, 3
9-10	Midterm				
11	Introduction to Evolution of Biodiversity: A Darwinian View of Life-The Evolution of Populations-The Origin of Species	1, 2		Lecture, Discussion, In Class-Quiz	1
12	The Evolutionary History of Biological Diversity-Phylogeny and the Tree of Life.	1, 2	Group work 2	Lecture, Discussion, Presentation	1

13	Basic principles of animal form and function-Animal Nutrition-Circulation-Immune system-Osmoregulation.	3, 4	HW3	Lecture Discussion Presentation	1, 2
14	Hormones and the endocrine system-Reproduction and development Nervous system- Sensory and motor mechanisms.	3, 4		Lecture, Discussion, Presentation	1, 3
15	Plant Structure, Reproduction and Development-Transport in Vascular Plants-Plant Nutrition-Plant Responses to Signals.	3, 4	HW4	Lecture, Discussion, Presentation	1
16	Ecology: Interactions between organisms and the environment limit the distribution of species.	2, 4		Lecture, Discussion, Presentation	1
17	Summary-Revision			Review-Test	
18-19	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class quizzes /presentation (15%)	Presentation Discussion 80%Pass	Presentation Discussion 80%Pass	Presentation Discussion 80%Pass	Presentation Discussion 80%Pass
Homework exercises (15%)	Group work 1 HW1 70%Pass	HW2 70%Pass	Group work 2 HW3 70%Pass	HW4 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (40%)		Final Exam 60%Pass	Final Exam 60%Pass	Final Exam 60%Pass

Note: %Pass (Exam): % students have scores greater than 50 out of 100.

%Pass (Presentation/ Assignment): % students have scores greater than 80 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max.	Score	Comments
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

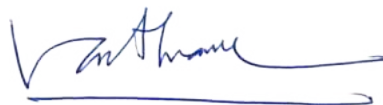
Oral communication value rubric for evaluating presentation tasks:

Group:	Topic for presentation:
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Category	Scoring Criteria	Total Points	Score
Presentation content	Content Organization: The presentation is delivered in logical order and have clear structure including introduction and conclusion.	15	
	Information: The presentation contains accurate information and cited from appropriate external resources.	15	
	Language usage: Presentation contains no grammatical errors and no misspelling; technical terms are well defined.	15	
	Visual aids: The presentation contains appropriate and effective visual aids which can grab attention of audiences.	15	
Presentation delivery	Time management: Length of presentation is within the assigned time limits.	10	
	Presentation Skill: The speaker maintains good eye contact with audiences, and speaks confidently with good voice, fluid speech, and appropriate pronunciation.)	10	
	Question and Answer: The speaker is able to answer all questions from the audiences after the presentation.	20	
Score	Total Points	100	

6. Date revised: March 12, 2022

Ho Chi Minh City, .../.../2025
Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Chemistry for Engineers

Course Code: CH011IU

1. General information

Course name	- <i>(in English)</i> Chemistry for Engineers - <i>(in Vietnamese)</i> Hóa đại cương
Course designation	This one-semester course is designed for students who are pursuing an engineering degree (e.g., information technology, biotechnology, civil, biomedical, electronic, and telecommunication engineering) and chemistry-related ones (e.g., applied chemistry and chemical engineering). The course will introduce the basic principles of chemistry and connect those principles to issues in the engineering profession. The related lab work is not included in this course.
Semester(s) in which the course is taught	1, 2, and summer (optional)
Person responsible for the course	Assoc.Prof. Dr. Huynh Kim Lam Dr. Vũ Bảo Khánh Dr. Phùng Thanh Khoa
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, project, and seminar (optional).
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 hrs for lectures Private study including examination preparation, specified in hours ⁵ : 90 hrs
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS

⁵ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None
Course objectives	Upon successful completion of this course, the students should be able to demonstrate knowledge of: ● The role of chemistry for engineers ● Measurements in chemistry ● Matter and state of matter ● Structure of atoms, molecules and ions ● Periodicity ● Chemical bonds ● Intermolecular forces, liquid and solid ● Gases, liquids, solids and their properties ● Types and rates of chemical reactions ● Chemical equilibrium ● Electrolytes, acid-base, <i>pH</i>, buffer ● Thermochemistry and thermodynamics
Course learning outcomes	CLO1: Be able to apply mathematics and science knowledge to solve chemistry-related problems and explain many aspects of everyday life using chemistry concepts. CLO2: Be able to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. CLO3: Be able to acquire and apply new knowledge as needed, using appropriate learning strategies.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to General Chemistry for Engineers	0.2	I, T
	Introduction to Matter	0.3	I, T
	Measurements in Chemistry	0.5	I, T
	Atoms, Molecules and Ions	1	I, T
	Periodicity	1	I, T
	Chemical Bonds	2	I, T
	Intermolecular Forces	1	I, T
	Gases and Their Properties	0.5	I, T
	Solutions and Their Properties	0.5	I, T
	Solids and Their Properties	0.5	I, T
	Chemical Reactions	0.5	I, T
	Chemical Kinetics	1	I, T
	Chemical Equilibrium	1	I, T
	Electrolytes, Acid- Base, pH and Buffer	2	I, T
	Thermochemistry and Thermodynamics	2	I, T
Examination forms	Multiple-choice questions, written test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	[1] "Chemistry: A Molecular Approach" by Nivaldo J. Tro (2nd Ed., 2008). Pearson. [2] "General Chemistry" by Darrell Ebbing and Steven D. Gammon (9th Ed., 2010). Brooks/Cole, USA. [3] "Chemistry for Engineers – An Applied Approach" by Mary Jane Shultz (2007). Houghton Mifflin. [4] "Chemistry, Principles and Reactions" by Masterton and Hurley (6th Ed., 2009). Cengage learning, USA.		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (PLO) (1-8) is shown in the following table:

	PLO							
CLO	1	2	3	4	5	6	7	8
1	x							
2							x	
3		x						

3. Planned learning activities and teaching methods

Week	Topic	CL O	Assessments	Learning activities
1	Introduction to General Chemistry for Engineers Introduction to Matter Measurements in Chemistry	1		- Lecture - Class discussion
2	Atoms, Molecules and Ions	1,7	Homework/ Quiz	- Lecture - Class discussion
3	Periodicity	1,7	Homework/ Quiz	- Lecture - Class discussion
4, 5	Chemical Bonds	1,7	Homework/ Quiz	- Lecture - Class discussion
6	Intermolecular Forces	2,7	Homework/ Quiz	- Lecture - Class discussion
7	Gases and Their Properties Solutions and Their Properties	2,7	Homework/ Quiz	- Lecture - Class discussion
8	Solids and Their Properties Chemical Reactions	1,2,7	Homework/ Quiz	- Lecture - Class discussion
9-10	Midterm			
11, 12	Chemical Kinetics and Chemical Equilibrium	1,2,7	Homework/ Quiz	- Lecture - Class discussion
13, 14	Electrolytes, Acid-Base, <i>pH</i> and Buffer	1,2,7	Homework/ Quiz	- Lecture - Class discussion
15, 16	Thermochemistry and Thermodynamics	1,2,7	Homework/ Quiz	- Lecture - Class discussion

17	Revision	1,2,7	Homework/ Quiz	- Class discussion
18-20	Final exam			

4. Assessment plan

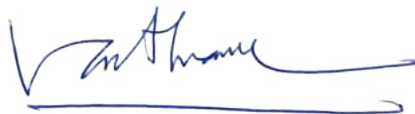
Assessment Type	CLO1	CLO2	CLO3
In-class exercises/ homework/quizzes (30%)	Qz1, 2, 3, 4, 5 50%Pass	Qz1, 2, 3, 4, 5 50%Pass	Homework 50%Pass
Midterm exam (30%)	Part I 50%Pass	Part II.1 50%Pass	Part II.2 50%Pass
Final exam (40%)	Part I 50%Pass	Part II.1 50%Pass	Part II.2 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: August 10, 2022

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Chemistry Laboratory

Course Code: CH012IU

1. General information

Course name	- <i>(in English)</i> Chemistry Laboratory - <i>(in Vietnamese)</i> Thực hành Hóa đại cương
Course designation	This one-semester course is designed for engineering students those who are pursuing a nonchemistry engineering degree such as information technology, bio-technology, civil, biomedical, electronic and telecommunication engineering. The course will introduce students to basic laboratory safety, techniques and apparatus, and complement the information gained in lecture. Prior to each lab, students must read the lab manual about the experiment and complete a prelaboratory report. All students must complete mandatory safety training to participate in the course, which will be provided at the first day of the class. Students are expected to come to each lab on time and be prepared to carry out the day's tasks.
Semester(s) in which the course is taught	1, 2, and summer (optional)
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab, Lecture

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 25h for lab, 5h for lecture Private study including examination preparation, specified in hours ⁶ : 30		
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS		
Number of periods	Theory: 0 Practice: 15		
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): CH011IU – Chemistry for Engineers - Previous course (Course code – Course name): None		
Course objectives	To introduce students to general chemistry laboratory and to provide students with a firm foundation in chemistry laboratory for careers in science and engineering		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1: Applying chemical concepts to draw logical conclusions about the applicability of data to real world problems.	
	Skill	CLO2. Being able to perform lab-work: perform experiment, analyze data, answer questions, make conclusion, research assignments, report writing. CLO3: Using collected data to calculate physical or chemical quantities to the experiment being performed.	
	Attitude	CLO4: Developing teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting.	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Chemical Reactions	1	T, U
	pH and buffers	1	T, U
	Redox titration	1	T, U
	Chemical Equilibrium	1	T, U
	Factors affecting reaction rate	1	T, U

⁶ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Final evaluation	Multiple choice questions
Study and examination requirements	Attendance: An attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Lab manual for chemistry laboratory (internal use only)

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (PLO) (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2						4	
3						3	
4					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Orientations		Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
2	Chemical Reactions	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
3	pH and buffers	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
4	Redox titration	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
5	Chemical Equilibrium	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	

6	Factors affecting reaction rate	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
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4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/pre-lab (10%)		Prelab 1, 2, 3, 4, 5 50%Pass	Prelab 1, 2, 3, 4, 5 50%Pass	
Lab report (60%)	Report 1, 2, 3, 4, 5 50%Pass	Report 1, 2, 3, 4, 5 50%Pass	Report 1, 2, 3, 4, 5 50%Pass	Report 1, 2, 3, 4, 5 50%Pass
Final exam (30%)	Q1 50%Pass	Q2 50%Pass	Q3 50%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max .	Score	Comments
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content			
Introduction demonstrates thorough knowledge of relevant background and prior work			
Analysis and discussion demonstrate good subject mastery			
Summary and conclusions appropriate and complete			

Organization (10%)			
Distinct introduction, body, conclusions			
Content clearly and logically organized, good transitions			
Presentation (20%)			
Correct spelling, grammar, and syntax			
Clear and easy to read			
Quality of Layout and Graphics (10%)			
TOTAL SCORE			

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1

Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

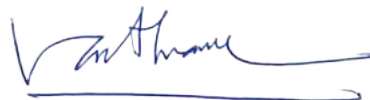
	Capstone	Milestone		Benchmark
	4	3	2	1

Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: August 10, 2022

Ho Chi Minh City, .../.../2025
Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
Department of Mathematics

COURSE SYLLABUS

Course Name: Calculus 2

Course Code: MA019IU

1. General information

Course name	- <i>(in English)</i> Calculus 2 - <i>(in Vietnamese)</i> Toán cao cấp 2
Course designation	This course is a continuation of Calculus 1. Its aim to equip student with basis concepts of sequence, series, vector functions, functions of several variables, multiple integrals and their applications
Semester(s) in which the course is taught	1, 2
Person responsible for the course	<i>Assoc. Prof. Mai Duc Thanh, Assoc. Prof. Tran Vu Khanh, Dr. Nguyen Minh Quan, Dr. Nguyen Anh Tu, Dr. Ta Quoc Bao.</i>
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 120 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 (lectures) Private study including examination preparation, specified in hours ⁷ : 60
Credit points	4 (theory) ~ 6.2 ECTS
Required and recommended prerequisites for joining the course	Calculus 1

⁷ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	1. To provide students with the main ideas and techniques of calculus. These include sequences, series, functions of several variables, optimal problems, multiple integrals, vector calculus. 2. To introduce practical applications of these ideas and techniques, through practical examples taken from many areas of engineering, business, and life sciences. 3. To develop skills in mathematical modelling and problem solving, ability to think logically, and adapt these skills creatively to new situations									
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Have basic knowledge of series, functions of several variables, multiple integrals (Program outcomes: a) CLO2. Have basic knowledge of vector calculus (Program outcomes: a)</td></tr><tr><td>Skill</td><td>CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j) CLO4. Can show the convergence of a sequence and a series and use power series to simplify computation. Can show the optimal problem using partial derivatives, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)</td></tr><tr><td>Attitude</td><td>CLO5. Confident when dealing with partial derivatives, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)</td></tr></table>		Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Have basic knowledge of series, functions of several variables, multiple integrals (Program outcomes: a) CLO2. Have basic knowledge of vector calculus (Program outcomes: a)	Skill	CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j) CLO4. Can show the convergence of a sequence and a series and use power series to simplify computation. Can show the optimal problem using partial derivatives, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)	Attitude	CLO5. Confident when dealing with partial derivatives, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)
Competency level	Course learning outcome (CLO)									
Knowledge	CLO1. Have basic knowledge of series, functions of several variables, multiple integrals (Program outcomes: a) CLO2. Have basic knowledge of vector calculus (Program outcomes: a)									
Skill	CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j) CLO4. Can show the convergence of a sequence and a series and use power series to simplify computation. Can show the optimal problem using partial derivatives, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)									
Attitude	CLO5. Confident when dealing with partial derivatives, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)									

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (4 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Sequences and Convergence	1	I, T
	Series	1	I, T
	Tests for Convergence	1	T, U
	Power series	1	T, U
	Representations of Functions as Power series	1	T, U
	Taylor and Maclaurin series	1	T, U
	Vector Functions and Space Curves, Limit and continuity of vector functions	1	I, T
	Derivatives and Integrals of vector functions, Length of space curves	1	T, U
	Functions of Several Variables, Limits and Continuity	1	I,T
	Partial Derivatives, Tangent Plane and Linear Approximations	1	T, U
	Chain Rules, Directional Derivatives and Gradient	1	T, U
	Maximum and Minimum Values of Functions of two variables	1	T, U
	Lagrange Multipliers and Applications	1	T, U
	Double Integrals in Rectangles, Iterated Integrals	1	I, T
	Double, Triple Integrals in General regions and Applications	2	T,U
Examination forms	Written examination		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	J. Stewart, <i>Calculus</i> , Thomson Learning, 7 th edition, 2012.		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

[illegible]

3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	Sequences, Series, The Integral Test and Estimates Sums, The comparison Tests	2, 4	HW	Lectures and Quiz
2	Alternating Series, Absolute Convergence and the Ratio and Roots Tests, Strategy for Testing Series	2, 4	HW	Lectures and Quiz
3	Power Series, Representations of Functions as Power Series, Taylor & Maclaurin Series, Applications of Taylor Polynomials	4, 5	Quiz	Lectures and Quiz
4	3D Coordinate Systems, Vectors, The Dot Product, The Cross Product, Equations of Lines and Planes, Functions of Surface.	2, 4	HW	Lectures and Quiz
5	Vector Functions and Space Curves, Derivatives and Integrals of Vector Functions, Arc Length, Parametric Surfaces	4, 5	HW	Lectures and Quiz
6	Functions of Several Variables, Limit and Continuity,	2, 4, 5	Quiz	Lectures and Quiz
7	Partial Derivatives, Tangent Planes and Linear Approximations,	3, 5	HW	Lectures and Quiz
8	Chain Rule, Directional Derivatives and Gradient Vectors,	3, 5	HW	Lectures and Quiz
Midterm Exam				
9	Maximum and Minimum Values, Lagrange Multipliers	2, 4	HW	Lectures and Quiz
10	Double Integrals over Rectangles, Iterated Integrals, Double Integrals over General Regions	2, 4	HW	Lectures and Quiz
11	Double Integrals in Polar Coordinates, Application of Double Integrals.	4, 5	HW	Lectures and Quiz
12	Triple Integrals, Triple Integrals in Cylindrical and Spherical Coordinates. Change of Variables in Multiple Integrals	2, 4	Quiz	Lectures and Quiz
13	Vector Fields, Line Integrals, the Fundamental Theorem for Line Integrals	4, 5	HW	Lectures and Quiz
14	Green's Theorem, Curl and Divergence, Surface Integrals	2, 4, 5	HW	Lectures and Quiz

15	Stokes' Theorem, Divergence Theorem.	1, 2, 3, 4, 5	Exercises	
Final Exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class exercises/ quizzes (10%)	Qz1- >Qz4 80% Pass	Qz5- >Qz8 80%Pass	Qz1- >Qz4 80% Pass	Qz5- >Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1- >H3 70% Pass	HW4, HW5 70%	HW1- >HW3 70% Pass	HW4, HW5 70%	HW1- >HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80%Pass		Q3, Q4 70%Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: January 12, 2022

Ho Chi Minh City, 20/8/2023



- VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
- Department of Physics

COURSE SYLLABUS

Course Name: Physics 2 (Fluid Mechanics and Thermal Physics)

Course Code: PH014IU

1. General information

Course designation	<i>This subject will provide a basic knowledge of fluid mechanics; macroscopic description of gases; heat and the first law of thermodynamics; heat engines and the second law of thermodynamics; microscopic description of gases and the kinetic theory of gases.</i>
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assos. Prof. Phan Bảo Ngọc Dr. Phan Hiền Vũ
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 30 Private study including examination preparation, specified in hours ¹ : 60
Credit points	2
Required and recommended prerequisites for joining the course	None

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	This course will provide students with: 1. The basic knowledge of Fluid Mechanics and Thermal Physics 2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques 3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment 4. Confidence and fluency in discussing physics in English.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand basic knowledge of fluid mechanics, laws of thermodynamics, and the kinetic theory of an ideal gas. CLO2. Apply knowledge of physics to solving problems in science and engineering	
	Skill	CLO3. Apply skills to analyzing and solving problems in science and engineering	
	Attitude	CLO4. Communicate effectively in writing manner	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (2 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Chapter 1: Fluid Mechanics	2	I, T,U
	Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	4	I, T,U
	Chapter 3: The Kinetic Theory of Gases	5	I, T,U
	Chapter 4: Entropy and the Second Law of Thermodynamics	4	I, T,U
Examination forms	Short-answer questions		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		

Reading list	[1] Lecture Notes [2] Halliday D., Resnick R. and Walker, J. (2011) <i>Principles of Physics</i>, 9th edition, John Willey and Sons, Inc. [3] Alonso M. and Finn E.J. (1992) <i>Physics</i>, Addison-Wesley Publishing Company. Faughn/Serway (2006) <i>Serway's College Physics</i>, Thomson Brooks/Cole.
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Intended Learning Outcomes (ILO) (1-10) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	Chapter 1: Fluid Mechanics - Fluids at Rest - Ideal Fluids in Motion - Bernoulli's Equation	1, 2	Assignment/ Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 1 [2] 14
3-8	Chapter 2: Temperature, Heat, and First Law of Thermodynamics - Temperature and Zero th Law of Thermodynamics - Thermal Expansion - Heat and Absorption of Heat by Solids and Liquids - Work and Heat in Thermodynamic Processes - First Law of Thermodynamics and Its Some Special Cases - Heat Transfer Mechanisms	1, 2	Assignment/ Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 2 [2] 18
	Midterm				
9-12	Chapter 3: Kinetic Theory of Gases - Ideal Gases: Experimental Laws, Equation of State - Molecular Model of an Ideal Gas. Mean Free Path Boltzmann Distribution Law and Distribution of Molecular Speeds - Molar Specific Heats of an Ideal Gas - Equipartition of Energy Theorem - Adiabatic Expansion of an Ideal Gas	3, 4	Assignment/ Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 2 [2] 19

13-15	Chapter 4: Entropy and Second Law of Thermodynamics -Reversible, Irreversible Processes and Entropy -Second Law of Thermodynamics -Entropy in Real World: Engines A Statistical View of Entropy	3, 4	Assignment// Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 4 [2] 20
	Final				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (10%)	Qz1 60%Pass	Qz2 60%Pass		Qz3 60%Pass
Homework exercises (20%)	HW2 50%Pass		HW1, HW3, HW4 50%Pass	
Midterm exam (30%)		Q3 50%Pass	Q1, Q2 50%Pass	
Final exam (40%)	Part I 50%Pass		Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max.	Score	Comments
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			

Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone 4	Milestone 3	2	Benchmark 1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when

Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	presenting a position. Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.

Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.
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Source: Association of American Colleges and Universities

6. Date revised: December 27, 2022

Ho Chi Minh City, 27/12/2022

Chair of Department of Physics



Phan Bảo Ngọc



VIETNAM NATIONAL UNIVERSITY HCMC - INTERNATIONAL UNIVERSITY

School of Chemical and Environmental Engineering

- COURSE SYLLABUS

Course Name: Applied Statistics (Thống kê ứng dụng)

Course Code: MA040IU

1. General information

Course designation	This course is designed for students pursuing a degree in chemical/environmental engineering and provides knowledge on statistical data, plotting data, descriptive statistics, probability and distribution, hypothesis test, T-test, analysis of variance (ANOVA), time series analysis and forecasting.																																																
Semester(s) in which the course is taught	1,2																																																
Person responsible for the course	Dr. Tran Thanh Tu, ttu@hcmiu.edu.vn																																																
Language	English																																																
Relation to curriculum	☐ General ☒ Fundamental ☐ Specialization ☐ Project/Internship/Thesis				☒ Compulsory ☐ Elective																																												
Teaching methods	Lecture, lesson																																																
Workload	<table><tr><td></td><td></td><td>Lecture</td><td>Lab</td><td>Project</td><td>Internship</td><td>Thesis</td></tr><tr><td>Credit</td><td>2</td><td>2</td><td></td><td></td><td></td><td></td></tr><tr><td>ECTS</td><td>3.09</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Contact hours</td><td>25</td><td>25</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Self-Study hours</td><td>60</td><td>60</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Total workload</td><td>85</td><td>85</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>									Lecture	Lab	Project	Internship	Thesis	Credit	2	2					ECTS	3.09						Contact hours	25	25	0	0	0	0	Self-Study hours	60	60	0	0	0	0	Total workload	85	85	0	0	0	0
		Lecture	Lab	Project	Internship	Thesis																																											
Credit	2	2																																															
ECTS	3.09																																																
Contact hours	25	25	0	0	0	0																																											
Self-Study hours	60	60	0	0	0	0																																											
Total workload	85	85	0	0	0	0																																											
Credits/ECTS	2 credits/ 3.09 ECTS																																																

Requirements for taking the course	☐ None ☐ Prerequisite course ☒ Parallel course: ENEE1020IU Applied Statistics Lab ☒ Previous course: Introduction to Computing (ENEE2017IU)			
Course objectives	Students will be provided with the knowledge about statistical data, plotting data, descriptive statistics, probability and distribution, hypothesis test, T-test, analysis of variance (ANOVA), time series analysis and forecasting.			
Course learning outcomes	Upon the successful completion of this course students will be able to:			
	Competency level¹	Course learning outcome (CLO)		
	Knowledge	CLO1. Interpret the principles of data and statistics, plotting and smoothing data, descriptive statistics; discrete probability distributions, continuous probability distributions, sampling and sampling distributions in chemical/environmental statistical analyses. [2-Understanding] CLO2. Apply hypothesis testing and decision making, paired t-Test and independent t-Test, Analysis of Variance (ANOVA) as well as time series analysis and forecasting in chemical/environmental statistical analyses. [3-Applying]		
	Skill	CLO3. Proceed exercises related to data plotting and smoothing, descriptive statistics, probability distributions in chemical/environmental statistical analyses. [2-Set] CLO4. Show the difference of hypothesis tests, the importance of ANOVA, time series analysis and forecasting in chemical/environmental statistical analyses. [2-Set]		
	Attitude	CLO5. Follow the ethical guidelines in chemical/environmental statistical practices. [3-Valuing]		
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>			
	Weight: lecture session (2.5 hours)			
	Teaching levels: I (Introduce); T (Teach); U (Utilize)			
	No.	Topic	Weight	Level
	1.	Introduction to Data and Statistics	1	T,U
2.	Plotting and Smoothing data	1	T,U	
3.	Descriptive statistics	1	T,U	

¹Level of competence according to Bloom's Taxonomy:

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Knowledge	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	x
Skills	Perception	Set	Guided Response	Mechanism	Complex Overt Response	Adaptation	Origination
Attitudes	Receiving Phenomena	Responding to Phenomena	Valuing	Organization	Internalizing values	x	x

	4.	Probability and Distribution	1	I,T
	5.	Hypothesis tests	1	I,T
	6.	t-Tests	1	I,T
	7.	Analysis of Variance (ANOVA)	2	I,T
	8.	Time series analysis and forecasting	2	I,T
Examination forms	☒ Multiple-choice questions ☐ Report ☐ Presentation ☒ Assignments		☐ Oral examination ☒ Written examination ☐ Others, please specify	
Other requirements	Attendance: A minimum attendance of 80 percent is compulsory for the theory session and 100 percent is compulsory for the labwork session. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.			
Reading list	[1]Paul Mac Berthouex. Linfield C. Brown, <i>Statistics for Environmental Engineers, 2nd Edition</i> . Lewis Publishers, 2002. [2] Nathabandu T. Kottegoda and Renzo Rosso, <i>Applied Statistics for Civil and Environmental Engineers, 2nd Edition</i> . Blackwell publishing, 2008. [3] Yuri A.W.Shardt, <i>Statistics for Chemical and Process Engineers: A Modern Approach</i> , Springer, 2015. [4] David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, Jeffrey D. Camm, James J. Cochran, <i>Statistics for Business & Economics, 13th Edition</i> . Cengage Learning, USA, 2017.			

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-5) and Intended Learning Outcomes (ILO) is shown in the following table:

CLOs		ILOs								
		Knowledge		Skills						Attitude
		1	2	3	4	5	6	7	8	9
Knowledge (Level: 1-6)	1	2								
	2	3								
Skill (Level:	3			2						

1-7)	4				2					
Attitudes (Level: 1-5)	5									3
Contribution of CLOs to ILOs										
Bloom's Taxonomy	A VE	2.5	0. 0	2. 0	2. 0	0.0	0.0	0.0	0.0	3.0
L,M,H conversion *		L		L	L					M

* L (Low); M (Medium); H (High)

3. Planned learning activities and teaching methods

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
1.	1	Introduction to Data and Statistics	1,5	Quiz1	Lecture, Discussion, Quiz	[1] Chapter 1,2 [4] Chapter 1
2.	2	Plotting and Smoothing data	1,3	HW1	Lecture, Discussion, Homework	[1] Chapter 3,4 [3] Chapter 1 [4] Chapter 2
3.	3	Descriptive statistics	1,3		Lecture, Discussion	[1] Chapter 5,6 [3] Chapter 1 [4] Chapter 3
4.	4	Probability and Distribution	1,3	HW2	Lecture, Discussion, Homework	[2] Chapter 2,3,4 [4] Chapter 4,5,6
5.	5	Hypothesis tests	2,4	Quiz2	Lecture, Discussion, Quiz	[1] Chapter 16 [2] Chapter 5 [3] Chapter 2 [4] Chapter 9
6.	6	t-Tests	2,4	HW3	Lecture, Discussion, Homework	[1] Chapter 17,18 [4] Chapter 9
7.	7	Analysis of Variance (ANOVA) (part 1)	2,4		Lecture, Discussion	[1] Chapter 24 [2] Chapter 6 [4] Chapter 13
8.	8	Analysis of Variance (ANOVA) (part 2)	2,4	HW3	Lecture, Discussion, Homework	[1] Chapter 25 [4] Chapter 13
9.	9	Midterm		A1		
10.	9	Time series analysis and forecasting (part 1)	2,4		Lecture, Discussion	[1] Chapter 53 [3] Chapter 5 [4] Chapter 17
11.	10	Time series analysis and forecasting (part 2)	2,4	HW4	Lecture, Discussion, Homework	[1] Chapter 53 [3] Chapter 5 [4] Chapter 17
		No class				
		Reserved week				
12.	17	Final exam		A2		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class Quiz and homework (HW) (30%)	HW1 Quiz1 60%Pass (R5.1)	HW3 Quiz2 60%Pass (R5.1)	HW2 60%Pass (R5.1)	HW4 60%Pass (R5.1)	Quiz1 60%Pass (R5.1)
Midterm exam (A1) (30%)	A1. Part I 60%Pass (R5.2)		A1. Part II 60%Pass (R5.2)		
Final exam (A2) (40%)		A2. Part I 60%Pass (R5.2)		A2. Part II 60%Pass (R5.2)	

Note: %Pass: Target that 60% of students having scores greater than 50 out of 100.

5. Rubrics

5.1 Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.2 Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.

Evidence Selecting and using information to investigate a point of view or conclusion	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

6. Date revised: August 14, 2023

Ho Chi Minh City, 14/8/2023

Dean of School of Chemical and Environmental Engineering



Huỳnh Kim Lâm

(*) Intended Learning Outcomes

No.	Intended Learning Outcomes
	<i>Knowledge and understanding</i>
1	Apply the knowledge of mathematics, sciences, and engineering to solve environmental engineering problems
2	Apply a broad knowledge to consider the impact of environmental engineering solutions in a global, economic, and social context
	<i>Skills</i>
3	Identify, formulate, and solve environmental engineering problems systematically
4	Design and conduct classical and modern experimentations, as well as analyze and interpret data
5	Design environmental systems, components, or processes to meet desired needs within realistic constraints such as economic, environment, occupational health, and safety
6	Apply the techniques, skills, and modern technical tools necessary for technical practice in environmental engineering
7	Display the ability to communicate effectively in English, writing reports, and presenting professional topics.
8	Work effectively on multidisciplinary teams to accomplish a common goal
	<i>Autonomy and responsibility</i>
9	Demonstrate professional and ethical responsibilities in the practice of environmental engineering
10	Recognize the need and continue the professional development and lifelong learning.

For administrative purposes

RECORD OF REVISIONS

No.	Session/Page	Content of revision	Date of revision	Revised by
1	General Information	Reduce the credit of course to 2 (theory only) due to the separating of Lab works to a new course	May 26th, 2023	Dr. Tran Thanh Tu
2	General Information	Add Parallel course: ENEE1020IU Applied Statistics Lab		
3	Assessment plan	Revise assessment plan according to the changes in CLOs.		
4	Rubrics	Add rubric for presentation assessment		
5	Course learning outcomes	Add detail of Bloom taxonomy	June 13th, 2023	Dr. Tran Thanh Tu
6	Learning Outcomes Matrix	Change Learning Outcomes Matrix		
7	Rubrics	Change rubrics		



**VIETNAM NATIONAL UNIVERSITY HCMC
- INTERNATIONAL UNIVERSITY**

School of Chemical and Environmental Engineering

- COURSE SYLLABUS

Course Name: Applied Statistics Lab (Thực hành Thống kê ứng dụng)

Course Code: MA041IU

1. General information

Course designation	This course is designed for students pursuing a degree in chemical/environmental engineering and provides knowledge and skills in using Python/R software for plotting data, descriptive statistics, hypothesis test, T-test, analysis of variance (ANOVA), time series analysis and forecasting.																																															
Semester(s) in which the course is taught	1,2																																															
Person responsible for the course	Dr. Tran Thanh Tu, ttu@hcmiu.edu.vn																																															
Language	English																																															
Relation to curriculum	☐ General ☒ Fundamental ☐ Specialization ☐ Project/Internship/Thesis			☒ Compulsory ☐ Elective																																												
Teaching methods	Lecture, lesson, lab works																																															
Workload	<table><tr><td></td><td></td><td>Lecture</td><td>Lab</td><td>Project</td><td>Internship</td><td>Thesis</td></tr><tr><td>Credit</td><td>1</td><td>0</td><td>1</td><td></td><td></td><td></td></tr><tr><td>ECTS</td><td>2.00</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Contact hours</td><td>25</td><td>0</td><td>25</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Self-Study hours</td><td>30</td><td>0</td><td>30</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Total workload</td><td>55</td><td>0</td><td>55</td><td>0</td><td>0</td><td>0</td></tr></table>								Lecture	Lab	Project	Internship	Thesis	Credit	1	0	1				ECTS	2.00						Contact hours	25	0	25	0	0	0	Self-Study hours	30	0	30	0	0	0	Total workload	55	0	55	0	0	0
		Lecture	Lab	Project	Internship	Thesis																																										
Credit	1	0	1																																													
ECTS	2.00																																															
Contact hours	25	0	25	0	0	0																																										
Self-Study hours	30	0	30	0	0	0																																										
Total workload	55	0	55	0	0	0																																										
Credits/ECTS	1 credits/ 2.00 ECTS																																															

Required and recommended prerequisites for joining the course	☐ None ☐ Prerequisite course ☒ Parallel course: ENEE1019IU Applied Statistics ☒ Previous course: Introduction to Computing (ENEE2017IU)									
								1	T, U	
Examination forms	☒ Multiple-choice questions ☐ Report ☐ Presentation ☒ Assignments					☐ Oral examination ☐ Written examination ☒ Others, please specify: Lab work (coding)				
Other requirements	Attendance: A minimum attendance of 80 percent is compulsory for the theory session and 100 percent is compulsory for the labwork session. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.									
Reading list	[1] Yosef Cohen and Jeremiah Y. Cohen, <i>Statistics and data with R - An applied approach through examples</i> . John Wiley & Sons, 2008. [2] C. Reimann, P. Filzmoser, R. G. Garrett, R. Dutter, <i>Statistical Data Analysis Explained: Applied Environmental Statistics with R</i> . John Wiley & Sons, 2008. [3] Thomas Haslwanter, <i>An Introduction to Statistics with Python with Applications in the Life Sciences</i> , Springer, 2016. Software: [1] The R Foundation for Statistical Computing (2019), <i>R 3.5.3</i> . (https://cran.r-project.org/) [2] https://www.python.org/									

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-5) and Intended Learning Outcomes (ILO) is shown in the following table:

CLOs		ILOs									
		Knowledge		Skills						Attitudes	
		1	2	3	4	5	6	7	8	9	10
Knowledge (Level: 1-6)	1	2									
	2	3									
Skill (Level: 1-7)	3			2							
	4				2						

Attitudes (Level: 1-5)	5									3	
Contribution of CLOs to ILOs											
Bloom's Taxonomy	AV E	2.5	0.0	2.0	2.0	0.0	0.0	0.0	0.0	3.0	0.0
L,M,H conversion *		L		L	L					M	

* L (Low); M (Medium); H (High)

3. Planned learning activities and teaching methods

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
1.	11	Data with Python/R	1,3		Discussion, Coding	[1] Chapter 1,2 [2] Chapter 2 [3] Chapter 3
2.	12	Graphics with Python/R	1,3	Quiz1	Discussion, Coding, Quiz	[1] Chapter 3 [2] Chapter 3 [3] Chapter 4
3.	13	Statistical analyses with Python/R (part 1)	1,3	CE1	Discussion, Coding, Quiz	[1] Chapter 4,5,6 [2] Chapter 4 [3] Chapter 6
4.	14	Statistical analyses with Python/R (part 2)	2,4	Quiz2	Discussion, Coding, Quiz	[1] Chapter 10 [2] Chapter 9 [3] Chapter 7
5.	15	Programming with Python/R in practice (Hypothesis tests)	2,4		Discussion, Coding	[1] Chapter 14,15 [2] Chapter 16 [3] Chapter 11
6.	16	Programming with Python/R in practice (Regression models)	2,4,5	CE2	Discussion, Coding	CE1,2
7.	17	Final exam		A		

3. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class Quiz (20%)	Quiz1 (R5.1) 60%Pass	Quiz2 (R5.1) 60%Pass	Quiz1 (R5.1) 60%Pass	Quiz2 (R5.1) 60%Pass	
Coding exercise (CE) (40%)	CE1 (R5.2) 60%Pass	CE2 (R5.2) 60%Pass	CE1 (R5.2) 60%Pass	CE2 (R5.2) 60%Pass	CE2 (R5.2) 60%Pass
Final exam (A) (40%)		A (R5.3) 60%Pass			A (R5.3) 60%Pass

Note: %Pass: Target that 60% of students having scores greater than 50 out of 100.

4. Rubrics

5.1. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.2. Rubric for lab work assessment

Criteria	% contribute	Level					
		Excellent	Very good	Good	Fair	Average	Weak
		$90 \leq \leq 100$	$80 \leq < 90$	$70 \leq < 80$	$60 \leq < 70$	$50 \leq < 60$	< 50
1. Attendance	10	Participate (100)					Be late ≥ 15 min
2. Preparation for the lab	5	Prepare well, answer all questions correctly					Not prepare well, could not answer correctly 50% questions
3. Follow the guide, be active	5	Strictly follow, active					Not follow, inactive
4. Coding skills during the classes (arrange the data, correct commands, fix bugs, etc.)	70	Correct in procedures for data input, write command, fix bugs					Incorrect in procedures for data input, write command, fix bugs
5. Code submission (after the classes)	10	On time					No submission
Total	100						

5.3. Critical thinking value rubric for evaluating questions in exams

	Capstone	Milestone		Benchmark
	4	3	2	1

Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence Selecting and using information to investigate a point of view or conclusion	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Ho Chi Minh City, / /2025

Dean of School of Chemical and Environmental Engineering

A handwritten signature in blue ink, appearing to read 'lam', with a horizontal line underneath.

Huỳnh Kim Lâm

(*) Intended Learning Outcomes

No.	Intended Learning Outcomes
	<i>Knowledge and understanding</i>
1	Apply the knowledge of mathematics, sciences, and engineering to solve environmental engineering problems
2	Apply a broad knowledge to consider the impact of environmental engineering solutions in a global, economic, and social context
	<i>Skills</i>
3	Identify, formulate, and solve environmental engineering problems systematically
4	Design and conduct classical and modern experimentations, as well as analyze and interpret data
5	Design environmental systems, components, or processes to meet desired needs within realistic constraints such as economic, environment, occupational health, and safety
6	Apply the techniques, skills, and modern technical tools necessary for technical practice in environmental engineering
7	Display the ability to communicate effectively in English, writing reports, and presenting professional topics.
8	Work effectively on multidisciplinary teams to accomplish a common goal
	<i>Autonomy and responsibility</i>
9	Demonstrate professional and ethical responsibilities in the practice of environmental engineering
10	Recognize the need and continue the professional development and lifelong learning.

For administrative purposes

RECORD OF REVISIONS

No.	Session/Page	Content of revision	Date of revision	Revised by
1	All	Create new course (due to the separating of Lab works from course: ENEE1019IU Applied Statistics)	May 26th, 2023	Dr. Tran Thanh Tu
2	Course learning outcomes	Add detail of Bloom taxonomy	June 13th, 2023	Dr. Tran Thanh Tu
3	Learning Outcomes Matrix	Change Learning Outcomes Matrix		
4	Rubrics	Change rubrics		



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Environmental Engineering**

COURSE SYLLABUS

Course Name: Environmental Science

Course Code: PE014IU

1. General information

Course designation	This course provides the basic knowledge about environmental science; population growth and utilization of natural resources and the environment; natural resources and current exploitation; pollution and its impacts, environmental economic and sustainable development. It also aims to raise students' awareness about possible impacts of human activities on the environment and natural resources in order to apply relevant economic practices.
Semester(s) in which the course is taught	1,2,3
Person responsible for the course	Dr. Tran Thanh Tu Dr. Nguyen Thi Hoang Hai MSc. Bui Xuan Anh Dao MSc. Nguyen Thi Hong Lan Assoc. Prof. Pham Thi Hoa Assoc. Prof. Pham Ngoc
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, homework, presentation
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 Private study including examination preparation, specified in hours ⁸ : 90
Credit points	3
Required and recommended prerequisites for joining the course	None

⁸ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	Students will be provided with the knowledge about environmental science; population growth and utilization of natural resources and the environment; natural resources and current exploitation; pollution and its impacts, environmental economic and sustainable development. Through this unit, students will be more aware of possible impacts of human activities on the environment and natural resources to apply relevant economic practices.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Recognize the current environmental issues and the roles of ecosystem and biodiversity. CLO2. Explain the growth of human population and its impacts to the ecosystem, biodiversity and the environment. CLO3. Describe the impacts of food, soil, and pest management, principles of water resources and water pollution, energy consumption and its impacts to the environment. CLO4. Identify the problems related to air pollution, climate disruption, and ozone depletion as well as environmental economics, politics, and environmental worldviews.	
	Skill	CLO5. Describes the issues related to ecosystem, biodiversity, human population growth, foot management, water and energy consumption, environmental pollution, climate change, etc. via in-class presentation.	
	Attitude	CLO6. Discuss the impacts of human activities to the ecosystem, biodiversity and the environment.	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Environmental Issues	1	I,T
	Ecosystem	1	I,T
	Biodiversity and Evolution Biodiversity: Species Interaction and Population Control	1	I,T
	Human Population	1	I,T
	Food, Soil, and Pest Management	1	I,T
	Water Resources and Water Pollution	2	I,T
	Energy	2	I,T
	Air Pollution, Climate Disruption, and Ozone Depletion	2	I,T
	Environmental Economics, Politics, and Worldviews	1	I,T
	Group presentations	3	T,U

Examination forms	Multiple-choice questions, presentation
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Miller T.G. and Spoolman S.E., <i>Environmental Science</i> , 15 th edition, Cengage Learning Publisher, USA, 2015.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-...) and Program/Student Learning Outcomes (SLO) (1 -...) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	...
1						
2						
3						
4						
5						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Environmental Issues	1,6		Lecture, Discussion	[1] Chapter 1
2	Ecosystem	1	Quiz1	Lecture, Discussion, Quiz	[1] Chapter 3
3	Biodiversity and Evolution Biodiversity: Species Interaction and Population Control	1	Quiz2	Lecture, Discussion, Quiz	[1] Chapter 4,5
4	Human Population	2,5	IP1 Quiz3	Lecture, Presentation, Discussion, Quiz	[1] Chapter 6
5	Food, Soil, and Pest Management	3,5	IP2	Lecture, Presentation, Discussion	[1] Chapter 10

6	Water Resources and Water Pollution: Part 1 – Water Resources	3,5	IP3	Lecture, Presentation, Discussion	[1] Chapter 11
7	Water Resources and Water Pollution: Part 2 – Water Pollution	3	Quiz4	Lecture, Discussion, Quiz	[1] Chapter 11
8	Energy: Part 1 – Nonrenewable energies	3,5	IP4	Lecture, Presentation, Discussion	[1] Chapter 13
	Midterm				
9	Energy: Part 2 – Renewable energies	3,5	IP5 Quiz5	Lecture, Presentation, Discussion, Quiz	[1] Chapter 13
10	Air Pollution, Climate Disruption, and Ozone Depletion – Part 1: Air Pollution	4,5	IP6	Lecture, Presentation, Discussion	[1] Chapter 15
11	Air Pollution, Climate Disruption, and Ozone Depletion – Part 2: Climate Disruption and Ozone Depletion	4	Quiz6	Lecture, Discussion, Quiz	[1] Chapter 15
12	Environmental Economics, Politics, and Worldviews	4,5	IP7	Lecture, Presentation, Discussion	[1] Chapter 17
13-15	Group presentation	5	IP8□10	Lecture, Presentation, Discussion	
	Reserved week				
	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
In-class presentation (IP) and	IP1,2 Quiz1,2	IP3□5 Quiz3	IP6□8 Quiz4,5	IP9,10 Quiz6	IP1□10 60%Pass	

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Quiz (30%)	60%Pass	60%Pass	60%Pass	60%Pass		
Midterm exam (30%)	Part I: Q3-16 PartII: Q1-8 PartIII: Q1-8 60%Pass	Part I: Q17-20 PartII: Q9,10 PartIII: Q9,10 60%Pass				Part I: Q1-2 60%Pass
Final exam (40%)			Part I: Q1-12 PartII: Q1-6 PartIII: Q1-6 60%Pass	Part I: Q13-20 PartII: Q6-10 PartIII: Q6-10 60%Pass		

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Rubric for assessment questions in assignment/HW and exam.

Criteria	Level				
	Excellent	Good	Average	Weak	
	100	75	50	25	0
Writing part	Totally correct in method with the differences (if any) in results is within 5%	Calculations mainly correct with 1-2 mistakes and the results are not strongly affected (within 10%)	Direction is correct, calculations with 50% steps having mistakes and the results are strongly affected	Calculation is done but mainly wrong or less relevant	No calculation; calculation is not relevant
MCQs part	Answer is totally correct	Answer is correct at 75%	Answer is correct at 50%	Answer is not clear and less relevant	No answer; answer is not relevant

5.2. Rubric for evaluating presentation tasks

Oral communication value rubric:

	Capstone 76-100	Milestone 51-75	26-50	Benchmark 0-25
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.



VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Computer Science and Engineering

COURSE SYLLABUS

Course Name: Introduction to Data Science

Course Code: IT135IU

1. General information

Course name	- (in English): Introduction to Data Science - (in Vietnamese): Nhập môn khoa học dữ liệu
Course designation	<i>This subject will provide a broad introduction to four key aspects of data science: data retrieval and manipulation, data visualization, statistical computation and machine learning, and presentation and communication.</i>
Course type	☐ General knowledge ☒ Fundamental Specialized knowledge Internship/Project/Thesis ☐ Others:
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Nguyen, Thi Thanh Sang
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self- study hours)	(Estimated) Total workload: 127.5 hours Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture: 37.5 hours Private study including examination preparation, specified in hours: 90 hours
Credit points	3 credits (Theory: 3 + Practice: 0) 4.64 ECTS
Number of periods	Theory: 45 Practice: 0

Required and recommended prerequisites for joining the course	None		
Course objectives	Students will be provided with skills of using data from a variety of sources, be introduced to contemporary computing and database environments, such as R/Python, and be exposed to case studies from outside the classroom. Through this unit, students will become acquainted with the challenges of contemporary data science and gain an appreciation of the foundational skills necessary to turn data into information.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Describe what Data Science is and the skill sets needed to be a data scientist. CLO2. Explain the role of a Data Science Process in data analytics.	
	Skill	CLO3. Carry out basic statistical modeling and analysis using open-source data analysis tools.	
	Attitude	CLO4. Reason around ethical and privacy issues in data science conduct and apply ethical practices.	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to Data Science	1	I
	Introduction to Descriptive Statistics	2	T, U
	Hypothesis Testing and Statistical Inference	1	T
	Exploratory Data Analysis and the Data Science Process	2	T, U
	Classification 1: Linear & Logistic Regression and K-Nearest Neighbors	2	T, U
	Classification 2: Decision trees and Support Vector Machine	2	T, U
	Clustering and Dimensionality Reduction	1	T, U
	Recommendation Systems	1	T, U
	Data Visualization	0.5	I
	Data Science and Ethical Issues	0.5	I
	Examination forms	Multiple-choice questions, short-answer questions	

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Jeffrey M.Stanton, <i>Introduction to Data Science</i> , Syracuse University, 2013. [2] Cathy O’Neil, Rachel Schutt, <i>Doing Data Science: Straight Talk from the Frontline</i> , O’Reilly Media, 2013. [3] Joel Grus, <i>Data Science from Scratch: First Principles with Python</i> , O’Reilly Media, 2015. [4] Jiawei Han, Micheline Kamber, <i>Data Mining: Concepts and Techniques</i> , 3 rd Edition, Morgan Kaufmann, 2011. [5] Matt Harrison, <i>Learning the Pandas Library: Python Tools for Data Munging, Analysis, and Visualization</i> , CreateSpace Independent Publishing Platform, 2016.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	x					
2	xx					
3						x
4				x		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Data Science	1, 4	Quiz1	Lecture, Discussion, Inclass-Quiz	[1].0. [2].1.
2-3	Introduction to Descriptive Statistics	3	HW1	Lecture, Inclass-Quiz, HW	[1].9.
4	Hypothesis Testing and Statistical Inference	3	Quiz4	Lecture, Group work	[2].2.
5-6	Exploratory Data Analysis and the Data Science Process	2	HW2, Quiz6	Lecture, Group work, HW	[1]. 2, 4 [2]. 2
7			HW2 presentation	Presentation	
8,10	Classification 1: Linear & Logistic Regression and K-Nearest Neighbors	3		Lecture, Group work	[2]. 3
9	Midterm				

11-12	Classification 2: Decision trees and Support Vector Machine	3	HW3	Lecture, Group work, HW	[2]. 4. [1]. 18.
13	Clustering and Dimensionality Reduction	3		Lecture, Group work	[3]. 10
14	Recommendation Systems	3	HW4	Lecture, Discussion, HW	[2]. 8
15	Data Visualization Data Science and Ethical Issues	3,4	Quiz 15	Lecture, Inclass-Quiz	[1]. 12, 13 [2]. 9, 16
16	Revision			Review-Test	
17	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (10%)	Qz1 60%Pass	Qz6 60%Pass		Qz15 60%Pass
Homework exercises (20%)	HW2 50%Pass		HW1, HW3, HW4 50%Pass	
Midterm exam (30%)		Q3 50%Pass	Q1, Q2 50%Pass	
Final exam (40%)	Part I 50%Pass		Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

a. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max.	Score	Comments
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		

Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

b. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

c. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but Description leaves some terms undefined, ambiguities unexplored, boundaries undetermined and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are Questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative,	Specific position (perspective, thesis/hypothesis) takes into account	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and

	taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).		obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/authority on the topic.

	authority on the topic.			
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

Ho Chi Minh City, / /2025

Dean of the School of Computer Science and Engineering

(Signature)



Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Industrial Engineering and Management

COURSE SYLLABUS

Course Name: Project Management

Course Code: IS026IU

1. General information

Course name	- <i>(in English)</i> Project Management - <i>(in Vietnamese)</i> Quản lý dự án
Course designation	This course is developed to provide the principal concept on project management which was characterized by the project management body of knowledge guide (PMBOK Guide). This guide emphasizes the five project process groups of initiating, planning, executing, controlling and closing, and the nine knowledge areas of project integration, scope, time, cost, quality, human resources, communication, risk, and procurement management.
Semester(s) in which the course is taught	4
Person responsible for the course	Tran Van Ly
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, homework.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 h Contact hours (please specify whether lecture, exercise, etc.): 37.5 h Private study including examination preparation, specified in hours ⁹ : 90 h
Credit points	3 credits (theory) ~ (4.6 ECTS)

⁹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None								
Course objectives	Students will be provided with knowledge and skills of constructing the network (AON & AOA), GANNT Chart, solving the network; Resource allocation, resource loading & levelling; Project budgeting & cost estimation, risk management; Project quality management; Project human resource management; Project procurement management; Project executing, monitoring & control to closing the project								
Course learning outcomes	Upon the successful completion of this course students will be able to: <table> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> <tr> <td>Knowledge</td><td>CLO1. Able to align the project to the organization's strategic plans and business justification throughout its lifecycle; to identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders. CLO2. Able to manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders Able to Implement general business concepts, practices, and tools to facilitate project success.</td></tr> <tr> <td>Skill</td><td>CLO3. Work effectively in group project in a specific context; combining the techniques to conduct practical cases. Respond to the needs of community and industrial sectors</td></tr> <tr> <td>Attitude</td><td>CLO4. Able to Apply appropriate legal and ethical standards. Adapt project management practices to meet the needs of stakeholders from multiple sectors of the economy (i.e. consulting, government, arts, media, and charity organizations); Identify and follow strictly ethical disciplines in project management</td></tr> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Able to align the project to the organization's strategic plans and business justification throughout its lifecycle; to identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders. CLO2. Able to manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders Able to Implement general business concepts, practices, and tools to facilitate project success.	Skill	CLO3. Work effectively in group project in a specific context; combining the techniques to conduct practical cases. Respond to the needs of community and industrial sectors	Attitude	CLO4. Able to Apply appropriate legal and ethical standards. Adapt project management practices to meet the needs of stakeholders from multiple sectors of the economy (i.e. consulting, government, arts, media, and charity organizations); Identify and follow strictly ethical disciplines in project management
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1. Able to align the project to the organization's strategic plans and business justification throughout its lifecycle; to identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders. CLO2. Able to manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders Able to Implement general business concepts, practices, and tools to facilitate project success.								
Skill	CLO3. Work effectively in group project in a specific context; combining the techniques to conduct practical cases. Respond to the needs of community and industrial sectors								
Attitude	CLO4. Able to Apply appropriate legal and ethical standards. Adapt project management practices to meet the needs of stakeholders from multiple sectors of the economy (i.e. consulting, government, arts, media, and charity organizations); Identify and follow strictly ethical disciplines in project management								

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Lecture 1: Introduction to Project Management	1	I, T
	Lecture 2: Project management processes for a project	1	I, T
	Lecture 3: Work breakdown structure	1	I, T
	Lecture 4: Project scheduling	1	I, T
	Lecture 5: Resource allocation	1	I, T
	Lecture 6: Logical Framework	2	I, T
	Lecture 7: Project cost management	1	I, T
	Lecture 8: Project risk management	1	I, T
	Lecture 9: Project quality management	1	I, T
	Lecture 10: Project human resource management	1	I, T
	Lecture 11: Project procurement management	1	I, T
	Lecture 12: Project executing, monitoring & control.	1	I, T
	Lecture 13: Project closing	1	I, T
Examination forms	Short-answer questions, exercises		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	[1] Book name: A Guide to the project management body of knowledge (PMBOK® Guide). 5th Edition, Newtown Square, Pa. : Project Management Institute, Inc. [2] Project management: A managerial approach / Jack R. Meredith, Samuel J. Mantel. 7th Edition, Hoboken, N.J. : Wiley ; Chichester : John Wiley [distributor], 2009. [3] The project management life cycle/ Jason West land. Kogan Page Limited, 2006		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-7) is shown in the following table:

	SLO						
CL O	1	2	3	4	5	6	7
1		x					
2		x					

3						x	
4				x			

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Lecture 1: Introduction to Project Management, project life cycle and organization	1		Lecture, Group work	[1].
2	Lecture 2: Project management processes for a project - Common project management process interactions. - Project management process groups. - Initiating process group - Planning process group	1	HW 1	Lecture, Group work	[1].
3	Lecture 3: Work breakdown structure	1,3,4	HW 2	Lecture, Group work	[1].
4	Lecture 4: Project scheduling. - Constructing the network: AON & AOA - Gantt chart - Solving the network - Using Microsoft Project software	1,3,4	HW 3	Lecture, Group work	[1].
5	Lecture 5: Resource allocation - Critical path method – Crashing a project - Resource allocation problem - Resource loading - Resource leveling - Constrained resource scheduling	1,3,4	HW 4	Lecture, Group work	[1].
6&7	Lecture 6: Logical Framework Approach (LFA)	3		Lecture, Group work	[1].
8	Review for Midterm				
	Midterm				
9	Lecture 7: Project cost management Project budgeting & Cost estimation - Top-Down budgeting - Bottom-Up budgeting - Improving the process of cost estimation	2,3,4	HW 5	Lecture, Group work	[1].
10	Lecture 8: Risk management. - Risk management planning - Risk identification		HW 6	Lecture, Group work	

	- Risk analysis - Risk monitoring and control - Using Crystal Ball software				
11	Lecture 9: Project quality management - Plan quality - Perform quality assurance - Perform quality control	2, 3, 4	HW 7	Lecture, Group work	[1].
12	Lecture 10: Project human resource management - Develop human resource plan - Acquire project team - Develop project team - Manage project team	2, 3, 4	HW 8	Lecture, Group work	[1].
13	Lecture 11: Project procurement management - Plan procurements - Conduct procurements - Administer procurements - Close procurements	2, 3, 4	HW 9	Lecture, Group work	[1].
14	Lecture 12: Project executing, monitoring & control.	2, 3, 4	HW 10	Lecture, Group work	[1].
15	Lecture 13: Project closing Project Presentation Review for Final Exam	2, 3, 4		Problems solving Group work	[1].
	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Homework exercises (30%)	HW1-2 50%Passes	HW4, HW5, HW6 50%Pass	HW7-8 50%Pass	HW9-10 50%Pass
Midterm exam (30%)	Q1 50%Passes	Q2 50%Pass	Q3, Q4 50%Pass	
Final exam (40%)	Q1 50%Passes	Q2 50%Pass	Q3, Q4 50%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

a. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max.	Score	Comments
Technical content (60%)			

Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

b. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

c. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone 4	Milestone 3 2		Benchmark 1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes	Identifies own and others' assumptions and several relevant	Questions some assumptions. Identifies several relevant	Shows an emerging awareness of present assumptions

	own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	contexts when presenting a position.	contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	(sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.

Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

COURSE SYLLABUS

Course Name: E-LOGISTICS IN SUPPLY CHAIN MANAGEMENT

Course Code: **IS062IU**

1. General information

Course name	- <i>(in English)</i> E-Logistics in Supply chain Management - <i>(in Vietnamese)</i> Quản lý hậu cần & chuỗi cung ứng
Course designation	This course introduces supply chain systems for e-commerce. Topics will cover all aspects of an e-supply chain system from different e-commerce models and e- supply chain structure, demand forecasting, e-procurement, customer segmentation and e-CRM, e-logistics system design, e-manufacturing. E- warehousing and e-fulfillment center, e-shipping and e-distribution system, and some OR applications in e-supply chain problems.
Semester(s) in which the course is taught	1
Person responsible for the course	Assoc. Prof. Nguyen Van Hop
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload:137.5 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 37.5 lecture hours Private study including examination preparation, specified in hours ¹ : 100
Credit points	3 (5 ECTS)
Required and recommended prerequisites for joining the course	
Course objectives	This course aims to provide for students: •To understand the components of an e-supply chain system and how to efficiently manage, coordinate, improve, or design/re-design the whole e-supply chain system or its components;

	•To discuss practical issues in e-supply chain management as well as the solutions for such issues; •To develop skill in applying a variety of techniques to solve e-logistics/supply chain problems.
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Course learning outcomes	Upon the successful completion of this course students will be able to:																																			
	Competen cy level		Course learning outcome (CLO)																																	
	Knowledg e		CLO1. Understanding the e-business models and the components of an e-supply chain system to support running smoothly these business processes. Comparing the differences between the traditional supply chain and the e-supply chain.																																	
	Skill		CLO2. Indentify various issues in e-supply chain systems. Apply diferent optimization and advanced advanced knowledge of natural sciences, mathematics and engineering to solve complex problems arisen in e- Business processes by collecting input data, analyzing parameters, doing literature review, conducting detailed research and experiments, and interpretation of data and solutions.																																	
	Attitude		CLO3. Develop teamworking (leadership, organize, plan, and manage the projects), soft and professional (communication, decision making) skills and apply ethical practices to handle issues in the working environment.																																	
Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weig ht</th><th>Level</th></tr><tr><td>Lecture 1: Introduction to supply chain management in e-Business</td><td>1</td><td>I, T, U</td></tr><tr><td>Lecture 2: e-Business models</td><td>1</td><td>I, T, U</td></tr><tr><td>Lecture 3: Forecasting demand with big data</td><td>1</td><td>I, T, U</td></tr><tr><td>Lecture 4: e-Procurement</td><td>1</td><td>I, T, U</td></tr><tr><td>Lecture 5: e-CRM</td><td>2</td><td>I, T, U</td></tr><tr><td>Lecture 6: Manufacturing in the age of e-Business</td><td>1</td><td>I, T, U</td></tr><tr><td>Lecture 7: e-Logistics</td><td>2</td><td>I, T, U</td></tr><tr><td>Lecture 8: e-Warehousing and e-fulfillment center</td><td>2</td><td>I, T, U</td></tr><tr><td>Lecture 9: e-Distribution and e-shipping</td><td>2</td><td>I, T, U</td></tr><tr><td>Lecture 10: OR applications in e-supply chain</td><td>1</td><td>I, T, U</td></tr></table>			Topic	Weig ht	Level	Lecture 1: Introduction to supply chain management in e-Business	1	I, T, U	Lecture 2: e-Business models	1	I, T, U	Lecture 3: Forecasting demand with big data	1	I, T, U	Lecture 4: e-Procurement	1	I, T, U	Lecture 5: e-CRM	2	I, T, U	Lecture 6: Manufacturing in the age of e-Business	1	I, T, U	Lecture 7: e-Logistics	2	I, T, U	Lecture 8: e-Warehousing and e-fulfillment center	2	I, T, U	Lecture 9: e-Distribution and e-shipping	2	I, T, U	Lecture 10: OR applications in e-supply chain	1	I, T, U
Topic	Weig ht	Level																																		
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Lecture 6: Manufacturing in the age of e-Business	1	I, T, U																																		
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Lecture 8: e-Warehousing and e-fulfillment center	2	I, T, U																																		
Lecture 9: e-Distribution and e-shipping	2	I, T, U																																		
Lecture 10: OR applications in e-supply chain	1	I, T, U																																		

Examination forms	Written Examination
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/ Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	Textbooks: - Chaffey D. and Hemphill T., Digital business and E-Commerce management, Pearson, 2019. - Ross D. F., Introduction to E-Supply Chain Management: Engaging Technology to Build Market – Winning Business Partnerships, St.Lucie Press, 2003. (e-book, https://www.scribd.com/document/51582619/e-supply-chain-book) - Wang Y. and Pettit S., E-logistics: Managing your digital supply chains for competitive advantage, KoganPage, 2016. References: - Simchi-Levi D., Chen X., and Bramel J., The Logic of Logistics: Theory, Algorithms, and Applications for Logistics Management. Springer Series in Operations Research and Financial Engineering: 2014. - Deborah L. Bayles, E-commerce Logistics and Fulfillment: Delivering the Goods, Prentice Hall, 2001. - Graham, D., Manikas, I., and Folinas, D., E-Logistics and E-Supply Chain Management: Applications for Evolving Business, 1st edition, IGI Global, 2013. - Adam Robinson, E-Commerce Logistics: Background & Considerations for Manufacturers & Distributors, Cerasis, 2016, (e-book, http://cerasis.com/category/e-books/) - Janice Reynolds, Logistics and Fulfillment for E-Business: A Practical Guide to Mastering Back Office Functions for Online Commerce.CMP Books, 2001 - Dave Chaffey, E-Business & E-Commerce Management: Strategy, implementation, and practice, 5th ed. Harlow: Pearson Education Limited, 2011. - Janice Reynolds, Logistics and Fulfillment for E-Business: A Practical Guide to Mastering Back Office Functions for Online Commerce.CMP Books, 2001

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-...) and Intended Learning Outcomes (ILO) (1 -7) is shown in the following table:

	ILO						
CLO	1	2	3	4	5	6	7
1	x						x
2	x	x				x	
3			x	x	x		

Intended Learning Outcomes (ILO)

Criteria for Accrediting Engineering Programs, 2020-2021

1. an ability to identify, formulate, and solve complex engineering problems by applying

principles of engineering, science, and mathematics

2. *an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors*

3. *an ability to communicate effectively with a range of audiences*

4. *an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts*

5. *an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives*
an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

6. *an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.*

The relationship between Course Learning Outcomes (CLO) (1-3) and ASIIN learning outcomes is shown in the following table:

CLO	ASIIN learning outcomes								
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	2.6
1	1.1a, 1.1b, 1.1c	1.2a, 1.2b	1.3c, 1.3d	2.1a, 2.1b	2.2a	2.3a	2.4c		
2		1.2a, 1.2b	1.3c, 1.3d	2.1a, 2.1b	2.2a, 2.2b		2.4a, 2.4b	2.5a	
3	1.1b, 1.1c		1.3a, 1.3b, 1.3c				2.4b	2.5a, 2.5b	2.6a, 2.6b

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Lecture 1: Introduction to supply chain management in e-Business	1	Quiz/HW	Lecture Group forming. Class discussion Read book & lecture 2.	
2	Lecture 2: e-Business models	1	Quiz/HW	Lecture Class discussion Read book & lecture 3.	
3	Lecture 3: Forecasting demand with big data	1	Quiz/HW	Lecture Class discussion Read book & lecture 4.	
4 & 5	Lecture 4: e-Procurement	1	Quiz/HW	Lecture Class discussion Read book & lecture 5.	
6 & 7	Lecture 5: e-CRM	1, 2	Quiz/HW	Lecture Class discussion.	

	Midterm		Written Exam		
8	Lecture 6: Manufacturing in the age of e-Business	1, 2	Quiz/HW	Lecture Class discussion Read book & lecture 7.	
9 & 10	Lecture 7: e-Logistics	1, 2	Quiz/HW	Lecture Class discussion Read book & lecture 8.	
11 & 12	Lecture 8: e-Warehousing and e- fulfillment center	1, 2	Quiz/HW	Lecture Class discussion Read book & lecture 9.	
13	Lecture 9: e-Distribution and e- shipping	1, 2	Quiz/HW	Lecture Class discussion Read book & lecture 10	
14	Lecture 10: OR applications in e-SCM	1,2	Quiz/HW	Lecture Class discussion	
15	Project report and presentation	2,3	Project	Group presentations Class discussion	
	Final exam		Written Exam		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Quizzes and homework (15%)	60%Pass	60%Pass	100% Pass
Project (15%)	60%Pass	60%Pass	100% Pass
Midterm Exam (30%)	60%Pass	60%Pass	90% Pass
Final Exam (40%)	60%Pass	60%Pass	90% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1.Grading checklist

Grading checklist for Semester Project Report			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max .	Score	Comments
Part 1. Problem (25%)			
Criterion 1: Problem Statement	10		
Criterion 2: Objectives of Study	5		

Criterion 3: Scope and Limitations	5		
Criterion 4: Literature Review	5		
Part 2. Proposed System Design and Solution (40%)			
Criterion 1: Proposed System	10		
Criterion 2: Proposed Solution	15		
Criterion 3: New Contribution	15		
Part 3. Results and Validation (35%)			
Criterion 1: Results	15		
Criterion 2: Validation	20		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis.	Information is taken from source(s) with enough interpretation/ evaluation to develop a	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a	Information is taken from source(s) without any interpretation/ evaluation.

<i>of view or conclusion</i>	Viewpoints of experts are questioned thoroughly.	coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.

Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

Ho Chi Minh City, / /2025

Dean of School of Industrial Engineering and Management



Dr. Nguyen Van Hop



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business**

COURSE SYLLABUS

Course Name: Principles of Marketing

Course Code: BA003IU

1. General information

Course name	- <i>(in English)</i> Principles of Marketing - <i>(in Vietnamese)</i> Nguyên lý Marketing
Course designation	The course named “Principles of Marketing” provides the students with necessary information on the basic concepts of marketing and its principles. It focuses on the understanding of Market Demand and Customers Behaviors as well as Marketing strategies developed by firms in terms of Pricing, Product, Place, Promotion, etc. The course also mentions various methods to market research and environmental factors that affect the marketing activities.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, projects, quizzes, examinations.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 128 Contact hours: 38 (15 classes, 1 class = 3 periods, 1 period = 50 minutes) Private study including examination preparation, specified in hours: 90
Credit points	03
Required and recommended prerequisites for joining the course	None

Course objectives	This course is an introduction to the field of marketing. In this course, the students will start to examine the most basic concepts in marketing – customer needs, wants, and demand to understand the marketplace. Next, main steps in designing a customer-driven marketing strategy are also explored. This course specially focuses on constructing an integrated marketing program that delivers superior value by using the marketing mix (the four Ps) – product/service design, pricing, distribution, and promotion. At last, other new contents of modern marketing, such as customer relationship management and partner relationship management are also briefly mentioned.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Describe marketing terminology and concepts and the principles used in developing marketing programs in a firm. CLO2. Identify wants, environmental factors and personal factors that shape marketing activities for certain target markets. CLO3. Explain the different types of goods, services, pricing, distribution and promotion in marketing strategies.
	Skill	CLO4. Describe different research methodologies in developing marketing plans. CLO5. Identify the components that help to organize and assign individuals or groups to work together in the planning, implementation and control of marketing activities
	Attitude	CLO6. State the ethical requirements of marketing activities

Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: lecture session (3 hours) Learning level: I (Introduced); R (Reinforced); M (Mastered)		
	Topic	Weight	Level
	Chapter 1: Creating and Capturing Customer Value	1	I, R
	Chapter 2: Company and Marketing Strategy- Partnering to Build Customer Engagement, Value, and Relationships	1	I, R
	Chapter 3: Analyzing the marketing environment	1	I, R
	Chapter 5: Understanding consumer buyer behavior	2	I, R
	Chapter 6: Business Markets and Business Buying Behavior	1	I, R
	Chapter 7: Customer-Driven Marketing Strategy: Creating Value for Target Customers	2	I, R
	Chapter 8: Product, Services, and Brands: Building Customer Value	2	I, R
	Chapter 10: Pricing: Understanding and Capturing Customer Value	1	I, R
	Chapter 12: Marketing Channels: Delivering Customer Value	1	I, R
	Chapter 14: Communicating Customer Value: Integrated Marketing Communications Strategy	1	I, R
	Chapter 15: Advertising and Public Relations	1	I, R
Examination forms	Multiple-choice questions, Short-answer questions, Case analysis		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	[1] Textbook: Philip Kotler and Gary Armstrong (2015), Principles of Marketing, 16th Edition, Prentice Hall, Upper Saddle River, New Jersey [2] Slides and other materials are provided in the Blackboard		

2. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
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1	Chapter 1: Creating and Capturing Customer Value	1	MCQs; Case analysis	Lecture, Discussion Group's project guidelines	[1], [2]
2	Chapter 2: Company and Marketing Strategy- Partnering to Build Customer Engagement, Value, and Relationships	1,2	MCQs; Case analysis	Lecture, Discussion	[1], [2]
3	Chapter 3: Analyzing the marketing environment	1,2	MCQs; Case analysis	Lecture, Discussion	[1], [2]
4, 5	Chapter 5: Understanding consumer buyer behavior	1,2,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
6	Chapter 6: Business Markets and Business Buying Behavior	1,2,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
7, 8	Chapter 7: Customer-Driven Marketing Strategy: Creating Value for Target Customers	1,2,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
9	Midterm	1,2,3, 6	Short-answer questions; MCQs; Case analysis 70%*		
10, 11	Chapter 8: Product, Services, and Brands: Building Customer Value	1,2,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
12	Chapter 10: Pricing: Understanding and Capturing Customer Value	1,2,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
13	Chapter 12: Marketing Channels: Delivering Customer Value	1,2,3	Quiz 70%*	Lecture, Discussion	[1], [2]
14	Chapter 14: Communicating Customer Value: Integrated Marketing Communications Strategy	1,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
15	Chapter 15: Advertising and Public Relations	1,3	MCQs; Case analysis	Lecture, Discussion	[1], [2]
16	Oral group project presentation	4,5	Oral Presentation 70%*	Q&A	
17	Final exam	1,2,3, 4,6	Short- answer questions; MCQs; Case analysis 70%*		

Note: * Target that 70% of students having scores greater than 70 out of 100.

Ho Chi Minh City, 10/4/2023

Dean of School of Business

GRADING RUBRIC FOR WRITTEN COURSEWORK

MIDTERM EXAMINATION – PRINCIPLES OF MARKETING (BA003IU)

Academic year: 2022 – 2023 (term I)

Criteria	INADEQUATE 10% – 49%	ADEQUATE 50% - 59%	ABOVE AVERAGE 60% - 74%	EXEMPLARY ≥ 75%
Organisation and clarification	Does not organise ideas logically and with clarification. Limited evidence of coherence Ideas lack consistence	Generally organised logically, with evidence of progression Occasionally, there may be a lack of focus or ideas may be tangential	Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped	Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic
Originality and usefulness of the analysis	Demonstrates an incomplete grasp of the task. There is no overall sense of creative coherence. Arguments are addressed incompletely.	Shows ability to identify marketing issues, gather the facts and develop claims. Argument are addressed well but no links with evidence	Shows strong ability to identify marketing issues, gather the facts and develop claims as well as link claims with evidence. Overall, an acceptable solution is offered and explained	Shows strong ability to identify marketing issues, gather the facts and develop claims as well as link claims with evidence. Satisfactory solutions are offered and supported
Use of data/information	Shows little information from sources. Poor handling of sources	Shows moderate amount of source information incorporated. Some key points supported by sources. Quotations may be poorly integrated into paragraphs. Some possible problems with source citations	Draws upon sources to support most points. Some evidence may not support arguments or may appear where inappropriate. Quotations integrated well into paragraphs. Sources cited correctly	Draws upon primary and secondary source information in useful and illuminating ways to support key points. Excellent integration of quoted material into paragraphs. Source cited correctly
Use of frameworks	Shows limited ability to structure problems in correspondence to theoretical frameworks	Shows effort to link problems with the theoretical frameworks. There are still some mistakes	Shows ability to structure problems in correspondence to theoretical frameworks correctly. Minor mistakes in resolving problems	Shows ability to structure problems in correspondence to theoretical frameworks correctly. The problems are well resolved
Quality of arguments	Shows little attempt to offer support for key claims or to relate evidence to analysis. Reasons offered are irrelevant.	Shows arguments of poor quality. Weak, undeveloped reasons are offered to support key claims	Shows clear, relevant and logical arguments.	Shows identifiable, reasonable, and sound arguments. Clear reasons are offered to support key claims.



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
 School of Computer Science and Engineering

COURSE SYLLABUS

Course Name: Entrepreneurship

Course Code: IT120IU

1. General information

Course name	- (in English): Entrepreneurship - (in Vietnamese): Khởi Nghiệp
Course designation	An introduction to the creative and innovative managerial practices of successful entrepreneurship.
Course type	☐ General knowledge ☐ Fundamental ☒ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the course is taught	7
Person responsible for the course	MSc. Dao Tran Hoang Chau
Language	English
Relation to curriculum	Compulsory (CS, NE, CE) Elective (DS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self- study hours)	(Estimated) Total workload: 127.5 hours Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture: 37.5 hours Private study including examination preparation, specified in hours: 90 hours
Credit points	3 credits (Theory: 3 + Practice: 0) 4.64 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	None

Course objectives	This course reviews the significant economic and social contributions entrepreneurs provide to society, the intense lifestyle commitment, and the skills necessary for entrepreneurial success. It explores how to identify and develop solutions to the most common leadership and personal challenges faced by entrepreneurs when starting new ventures or launching new products. It also promotes a deeper understanding of what is required to be a successful entrepreneur, highlights the skills and tools necessary to start a new business and explores alternatives to common pitfalls. This course applies entrepreneurial marketing approaches used by successful entrepreneurs. These include utilizing industry sector trends, identifying emerging customer niches, developing new products/services, using guerilla marketing strategies, and Internet and social marketing strategies. It emphasizes the importance of managing cash flows, ratio analysis, pro forma development, and the basics of deal structure and harvesting a business venture. Students will identify and interpret sources of information from company financial reports, financial publications, industry benchmarks, the media, and web sites. An introduction to the process of researching, writing, and presenting a business plan. Students identify and screen ideas using a business feasibility study that describes the product features, market opportunity, customer profile, sales forecast, competitive advantage, and profit potential. Following a successful feasibility study, students may use business plan software as each develops their own complete business plan.			
Course learning outcomes	CLO 1. Understand entrepreneurial processes; CLO 2. Apply new technology to boost business performance; CLO 3. Manage marketing strategy and financial statements in a enterprise;			
		Competency level	Course learning outcome (CLO)	
		Knowledge	1, 2, 3	
		Skill	1, 3	
		Attitude	3	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)			
	Topic	Weight	Level	
	Entrepreneurship, Creativity and Innovation;	3	I, T	
	Creative Problem Solving Model;	3	T, U	
	Develop a Product. Generate Ideas and Protect Inventions;	2	T	
	Marketing Strategies;	3	T, U	

	Finance and Accounting	4	T, U
Examination forms	Multiple-choice questions, short-answer questions		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	1. Duening & Hisrich & Lechter, Technology Entrepreneurship 2nd, 2014		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1			x			
2		x				
3				x		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Entrepreneurship, Creativity and Innovation;	1	Midterm exam	Lecture, In- class activities, Quiz	
2	Creative Problem Solving Model;	1	Midterm exam	Lecture, In- class activities, Quiz	
3	Develop a Product. Generate Ideas and Protect Inventions;	2	Midterm exam, Assignment	Lecture, In- class activities, Project	
4	Midterm				
5	Marketing Strategies;	3	Final exam, Assignment	Lecture, Project	
6	Finance and Accounting	3	Final exam, Assignment	Lecture, Project	
7	Final exam				

Note: %Pass: Target that % of students having scores greater than 50 out of 100

4. Assessment plan

Assessment Type	CLO 1	CLO 2	CLO 3
Midterm examination (25%)	50%	50%	

Projects/Presentations/ Report (25%)			60%
Final examination (40%)			40%
Exercises/ Quiz (10%)	50%	50%	

Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student:		HW/Assignment:	
Date:		Evaluator:	
	Max.	Score	Comments
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.

0	No response/task not attempted
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Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequence)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and

	to place evidence and perspectives discussed in priority order.	and implications) are identified clearly.	implications) are identified clearly.	implications) are oversimplified.
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Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is Compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

Ho Chi Minh City, 24/04/2024

Dean of the School of Computer Science and Engineering

(Signature)

A handwritten signature in blue ink, appearing to read 'N Sinh', with a long horizontal stroke underneath.

Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: ORGANIC CHEMISTRY

Course Code: CH009IU

1. General information

Course name	- <i>(in English)</i> Organic Chemistry - <i>(in Vietnamese)</i> Hóa hữu cơ
Course designation	This course is designed for non-chemistry majors, as it is intended for students pursuing a degree in biotechnology. The course is divided into two parts. The first part covers the basic fundamentals of general, organic chemistry and properties of organic compounds as needed to understand the organic chemistry of living cells, analytical chemistry, physiology and biochemistry. The second part focuses on organic chemistry of living cells, including the chemistry of carbohydrates, lipids, amino acids, proteins and nucleic acids. Some real applications as well as computational aspects will also be discussed.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Le, Quang Phong
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, homework, quiz.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (lecture lesson): 45 h Private study including examination preparation, specified in hours: 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None
Course objectives	Students will be provided with skills of recognizing different type of functional groups and reactions. Students will be provided with ability of analyzing and drawing reaction mechanism.

Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand the fundamental concepts of organic chemistry, organic compounds structures and reactions. CLO2. Understand structures, properties and application of biological macromolecules.	
	Skill	CLO3. Know how to draw organic compounds and biological molecular structures and their reactions.	
	Apply	CLO4. Able to predict and explain organic compounds structures, properties, and reactions	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	The structure of atoms, molecules, ions and ionic compounds The nature of chemical bonds in organic chemistry	1	T, U
	The chemistry of carbon and carbon-containing compounds	1	T, U
	Isomerism, stereochemistry, and biological activities of optical compounds	1	T, U
	Functional groups, alkanes, and cycloalkanes	2	T, I
	Alkene, alkyne, aromatic and heterocyclic compounds	2	T, I
	Chemistry of carbohydrates	2	T, I
	Chemistry of lipids	2	T, I
	Chemistry of amino acids and proteins	2	T, I
	Chemistry of nucleic acids	2	T, I
	Examination forms	Multiple-choice questions, short-answer questions	
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	[1] K. Timberlake <i>An introduction to general organic and biological chemistry</i> , Pearson/Benjamin Cummings Publishing, 9th Edition (2008). [2] Joseph J. Topping, Robert L. Caret, Katherine J. Denniston <i>Principles and applications of inorganic, organic, & biological chemistry</i> , William C. Brown; 2 nd Edition (1997).		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (PLO) (1 -7) is shown in the following table:

CL O	1	2	3	4	5	6	7
1	1						
2	1						
3	3						
4	2						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	<i>The structure of atoms, molecules, ions and ionic compounds</i> <i>The nature of chemical bonds in organic chemistry</i>	1	Quiz1, HW1	Lecture, Inclass-Quiz, HW	
2	<i>The chemistry of carbon and carbon-containing compounds</i>	1,3	Quiz2, HW2	Lecture, Inclass-Quiz, HW	
3	<i>Isomerism, stereochemistry, and biological activities of optical compounds</i>	1,3	Quiz3, HW3	Lecture, Inclass-Quiz, HW	
4-5	<i>Functional groups, alkanes and cycloalkanes</i>	1,3,4	Quiz4, HW4	Lecture, Inclass-Quiz, HW	
6-7	<i>Alkene, alkyne, aromatic and heterocyclic compounds</i>	1,3,4	Quiz5, HW5	Lecture, Inclass-Quiz, HW	
	Midterm				
8-9	<i>Chemistry of carbohydrates</i>	2,3,4	Quiz6, HW6	Lecture, Inclass-Quiz, HW	
10-11	<i>Chemistry of lipids</i>	2,3,4	Quiz7, HW7	Lecture, Inclass-Quiz, HW	
12-13	<i>Chemistry of amino acids and proteins</i>	2,3,4	Quiz8, HW6	Lecture, Inclass-Quiz, HW	
14-15	<i>Chemistry of nucleic acids</i>	2,3,4	Quiz9	Lecture, Inclass-Quiz, HW	
	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (15%)	70% Pass	70% Pass	70% Pass	70% Pass
Homework exercises (10%)	90% Pass	90% Pass	90% Pass	90% Pass
Midterm exam (35%)	70% Pass		70% Pass	70% Pass
Final exam (40%)		80% Pass	80% Pass	80% Pass

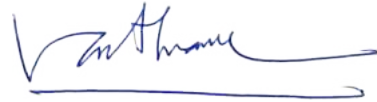
Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Le Quang Phong
- Email: lqphong@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

**Course Name: INTRODUCTION TO FOOD SCIENCE AND
TECHNOLOGY**

Course Code: **BTFT201IU**

1. General information

Course name	- <i>(in English)</i> Introduction to Food Science and Technology - <i>(in Vietnamese)</i> Nhập môn Khoa học và Công nghệ Thực phẩm
Course designation	The subject will provide knowledge on following: - Introduction to food science. Food production and composition. Nutrients, additives and ingredients. Food quality and sensory properties. Food safety, regulation, labeling. Introduction to food chemistry, biochemistry and physics. Water in foods. - Introduction to food microbiology. Microorganisms, taxonomy, growth conditions. Food-borne illness, poisoning, spoilage and fermentations. Health aspects, probiotics, bioactive peptides. - Food processing and preservation. Industrial and business aspects. Engineering, quality control, ecological aspects. Principles of food preservation. Drying, freezing, canning, chemical preservatives, irradiation, packaging. Food manufacturing, formulation, functionality. Regulatory aspects. Food laws, inspections, recalls. Food service and the hospitality industry. - Major food commodities and products. Cereals, oilseeds, flours, bread, fats and oils, vegetables, fruits, tea, beverages, milk and dairy products, eggs, meat, poultry and fish. - Current food issues. Functional foods and nutraceuticals, genetically modified foods, organic foods, minimal processing, non-thermal preservation technologies. Research and development. Careers in food science.
Semester(s) in which the module is taught	3,4,5
Person responsible for the module	Assoc. Prof. Nguyen, Vu Hong Ha
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ¹⁰ : 90 h	
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS	
Number of periods	Theory: 45 Practice: 0	
Required and recommended prerequisites for joining the module	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None	
Course objectives	After studying this course, the students will be able to: – Develop an understanding of food production from the farm gate to the consumer plate. – Generate an appreciation for the technologies, challenges and issues involved in modern day food production, processing, distribution and marketing for both the food industry and consumers. – Develop a scientific understanding of the complex current issues in the “world of food”. – Gain an appreciation of the interface between food science and nutrition. – Develop a working knowledge of the application of mathematics, biology, chemistry and biochemistry to food science.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understand technologies, challenges and issues involved in modern day food production, processing, distribution and marketing for both the food industry and consumers.
	Skill	CLO2. Efficiently communicate well with lecturers during teaching and presentation.
	Attitude	CLO3. Collaborate well with other students in homework and seminar sessions

¹⁰ When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (~3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to Food Science and Technology	1	I, T
	Introduction to food chemistry	2	I, T
	Introduction to food microbiology	2	I, T
	Sensory evaluation and labeling regulations	1	T
	Industrial food processing and preservation	2	T
	Cereal and oilseed products	1	T
	Fruit and vegetable products	1	T
	Milk and dairy products	1	T
	Meat, poultry and eggs, fish and seafood	1	T
	Food additives	1	T
	Product development in the food industry	1	T
	Seminar	1	T, U
Examination forms	Multiple-choice questions, short-answer questions tests		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: • Geoffrey Campbell-Platt. 2017. Food Science and Technology, 2nd Edition. Wiley-Blackwell. References: • Brown C.A. (2010). Understanding food: principles and preparation. (4th Eds). Cengage Learning. • Murano, P.S. 2003. Understanding Food Science and Technology. Thomson Wadsworth • Lectures and other documents will be on the Blackboard of the International University.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	1						
2			2				

3					3		
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3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to Food Science and Technology	1	Midterm exam	Lecture, discussion
2-3	Introduction to food chemistry	1	Midterm exam	Lecture, discussion
4-5	Introduction to food microbiology	1	Midterm exam	Lecture, discussion
6	Food quality	1	Midterm exam	Lecture, discussion
7-8	Industrial food processing and preservation	1	Midterm exam	Lecture, discussion
9-10	Midterm			
11	Cereal and oilseed products	1	Final exam	Lecture, discussion
12	Fruit and vegetable products	1	Final exam	Lecture, discussion
13	Milk and dairy products	1	Final exam	Lecture, discussion
14	Meat, poultry and eggs, fish and seafood	1	Final exam	Lecture, discussion
15	Food additives	1	Final exam	Lecture, discussion
16	Product development in the food industry	1	Final exam	Lecture, discussion
17-18	Seminar	2,3	Presentation, Q&A,	Presentation, Q&A
19-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Presentation, Q&A	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Presentation (30%)		Presentation 60%Pass	Presentation 60%Pass
Midterm exam (30%)	Midterm exam 60%Pass		

Final exam (40%)	Final exam 60%Pass		
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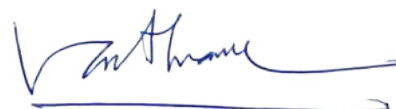
Note: %Pass (exam): % students have scores greater than 50 out of 100.

%Pass (Presentation): % students have scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025
Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD ENGINEERING PRINCIPLES

Course Code: BTFT203IU

1. General information

Course name	- <i>(in English)</i> Food Engineering Principles - <i>(in Vietnamese)</i> Các nguyên lý Kỹ thuật Thực phẩm
Course designation	This subject will provide knowledge on following: - Basic principles of food process engineering – mass and energy. Food composition, physical properties. Introduction to food processing. - Units and dimensions. SI, CGS, English systems. Conversion factors. Dimensional consistency. Problems - solving examples. - Material balances. Batch and continuous processes. General mass balance equations, algebraic unknowns, tie substance, basics for calculation. - Thermodynamics. Thermodynamic properties. Vapours and gases. Ideal gas law. Real gases. Sensible and latent heat. Enthalpy. Energy balances. - Fluid mechanics. Viscosity. Laminar and turbulent flow. Fluid flow in pipes, pressure drop, friction. Reynolds number. Bernoulli equation. - Heat transfer theory. Conduction, convection, radiation. Fourier's law. Heat transfer applications. Steady state. Forced and free convection equations. Dimensionless numbers. Heat exchangers. Heat transfer coefficients.
Semester(s) in which the module is taught	3,4,5
Person responsible for the module	Dr. Dang, Quoc Tuan
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 180 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 h for lecture Private study including examination preparation, specified in hours ¹¹ : 120 h	
Credit points	4 credits (Theory: 4 + Practice: 0) 6.2 ECTS	
Number of periods	Theory: 60 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): PH014IU – Physics 2	
Course objectives	After studying this course, the students will be able to: - Understand basic engineering concepts, principles and mathematical methods applicable to a wide range of food engineering and food processing situations - Get necessary background knowledge for advanced food processing and preservation courses	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understand fundamental concepts of food operation units
	Skill	CLO2. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
	Attitude	CLO3. Communicate effectively with class-mates and instructors; to develop a team-work capacity

¹¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (4 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Course overview. Basic variable of physics. Unit conversion. Ideal gas. Real gas	1	I
	Systems and processes. Thermodynamics. Steam table	1	T
	Mass balance	1	T, U
	Energy balance	1	T, U
	Fluid statics. Fluid dynamics	1	I, T
	Basic equation of fluid flow	1	T, U
	Fluid friction - MEB - Pump design	1	T, U
	Heat transfer-Conduction	1	T, U
	Heat transfer-Convection	1	T, U
	Heat transfer- heat exchanger	1	T, U
	Heat transfer – unsteady state	1	T, U
	Psychrometrics	1	T, U
	Refrigeration	1	T, U
	In-class presentation (current trends, new techniques in food engineering)	2	T, U
Examination forms	Multiple-choice questions, written test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: R. Paul Singh, Dennis R. Heldman. 2013. <i>Introduction to food engineering</i>. Academic Press. 5th Edition. References: - Toledo, R.T. 2018. <i>Fundamentals of Food Process Engineering</i>. 4th Edition. Springer, New York, NY.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	2						
2	3						
3			2				

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Course overview. Basic variable of physics. Unit conversion. Ideal gas. Real gas	1,2	Midterm exam	Lecture, discussion
2	Systems and processes. Thermodynamics. Steam table	1,2	Midterm exam	Lecture, discussion
3	Mass balance	1,2	Midterm exam	Lecture, discussion
4	Energy balance	1,2	Midterm exam	Lecture, discussion
5	Fluid statics. Fluid dynamics	1,2	Midterm exam	Lecture, discussion
6	Basic equation of fluid flow	1,2	Midterm exam	Lecture, discussion
7	Fluid friction - MEB - Pump design	1,2	Midterm exam	Lecture, discussion
8	Heat transfer-Conduction	1,2	Final exam	Lecture, discussion
9-10	Midterm			
11	Heat transfer-Convection	1,2	Final exam	Lecture, discussion
12	Heat transfer- heat exchanger	1,2	Final exam	Lecture, discussion
13	Heat transfer – unsteady state	1,2	Final exam	Lecture, discussion
14	Psychrometrics	1,2	Final exam	Lecture, discussion
15	Refrigeration	1,2	Final exam	Lecture, discussion
16-17	In-class presentation (current trends, new techniques in food engineering)	3	Presentation	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Presentation	1	20
Mid-term exam	1	40
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Presentation (25%)			Presentation 70%Pass

Midterm exam (35%)	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (40%)	Final exam 60%Pass	Final exam 60%Pass	

Note: %Pass (Quiz, exam): % students have scores greater than 50 out of 100.

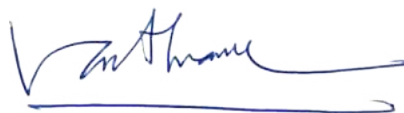
%Pass (Presentation): % students have scores greater than 70 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqtuan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD CHEMISTRY AND BIOCHEMISTRY

Course Code: BTFT156IU

1. General information

Course name	- <i>(in English)</i> Food Chemistry and Biochemistry - <i>(in Vietnamese)</i> Hóa học và hóa sinh thực phẩm
Course designation	This course introduces a biochemical approach in relation with food science and technology, especially the practical approaches to food production system.
Semester(s) in which the module is taught	3,4
Person responsible for the module	Dr. Nguyen, Van Toan
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ¹² : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None

¹² When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	After studying this course, the students will be able to: · Enrich the knowledge on how energy generates from the primary food components, namely carbohydrate, proteins, and fat molecules, in human body · Understand the basic biological and chemical processes of living cells and enzymes and how these are harnessed into industrial processes and technologies for the production, processing and preservation of food and related products. · Understand how molecules breakdown or rebuild in human body, what other molecules (like, enzymes, minerals, vitamins) needed for the utilization of these molecules.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understand the fundamental biochemical principles, structure/function of biomolecules, metabolic pathways, and the regulation of biochemical processes. CLO2. Understand how the properties of different food components and interactions among these components modulate the specific quality attributes of food systems.
	Skill	CLO3. Apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology that pays attention to and uses humanities values by their field of expertise
	Attitude	CLO4. Work on group for assigned works and presentation as well as effective communications

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	The constituents of foodstuffs	2	I
	Biochemistry of the principal foods	2	T, U
	General observations on the composition of foodstuffs	1	T, U
	Biochemistry of simple carbohydrates and derived products	2	T, U
	Polysaccharides Biochemistry	2	T
	Food Lipids Biochemistry	2	T
	Proteins Biochemistry	2	T
	Minerals	1	T, U
	Water	1	T, U
	Vitamins	1	T, U
	Pigments: Biochemistry and Biochemical aspects	2	T, U
	Biochemistry in Food System	2	T, U
Examination forms	Written tests		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed basing on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbooks: Alias, C. and Linden, G. 2002 Food Biochemistry. Springer-Science+Business Media, B.V N. A. Michael Eskin and Fereidoon Shahidi.2012. Biochemistry of foods, 3rd Edition, Elsevier Inc. Fatih Yildiz .2010. Advances in Food Biochemistry. Taylor and Francis Group, LLC References: Benjamin K. Simpson et al, 2012. Food Biochemistry and Food Processing, John Wiley & Sons, Inc. Michael I. Gurr John L. Harwood Keith N. Frayn Denis J. Murphy Robert H. Michell, 2016. Lipids- Biochemistry, Biotechnology and Health, John Wiley & Sons Ltd. Zdzisław E. Sikorski. 2007. Chemical and Functional Properties of Food Components. CRC Press-Taylor & Francis Group Reader's Digest 2013. Foods that Harm and Foods that Heal, The Reader's Digest Association, Inc.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7

1	2						
2	2						
3		1					
4			2				

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	The constituents of foodstuffs	1,2	Midterm exams	Lecture, discussion
2-3	Biochemistry of the principal foods	1,2,3,4	Homework 1	Lecture, presentation
4	General observations on the composition of foodstuffs	1,2	Midterm exams	Lecture, discussion
5-6	Biochemistry of simple carbohydrates and derived products	1,2	Quiz 1	Lecture, discussion
7	Polysaccharides Biochemistry	1,2	Midterm exams	Lecture, discussion
8	Lipids Biochemistry	1,2,3,4	Homework 2	Lecture, presentation
9-10	Midterm			
11-12	Proteins Biochemistry	1,2	Final exams	Lecture, discussion
13	Minerals	1,2	Final exams	Lecture, discussion
14	Water	1,2	Quiz 3	Lecture, discussion
15	Vitamins	1,2	Final exams	Lecture, discussion
16	Pigments: Biochemistry and Biochemical aspects	1,2,3,4	Homework 3	Lecture, presentation
17	Biochemistry in Food System	1,2,3,4	Final exams	Lecture, presentation
18-19	Reserve week and Final exams			

2. Assessment plan

Course assessment policy

Methods	Frequency	(%)
In-class quiz	3	10
Homework	3	20
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class quiz (10%)	Quiz 60%Pass	Quiz 60%Pass		
Homework (20%)			Report 70%Pass	Report 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass		
Final exam (40%)	Final exam 60%Pass	Final exam 60%Pass		

Note: %Pass (quiz): % students have scores greater than 65 out of 100.

%Pass (exam): % students have scores greater than 60 out of 100.

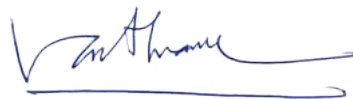
%Pass (homework): % students have scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Van Toan
- Email: nvtoan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

Course Name: FOOD SUSTAINABILITY

Course Code: **BTFT157IU**

1. General information

Course name	- <i>(in English)</i> Food Sustainability - <i>(in Vietnamese)</i> Phát triển bền vững thực phẩm
Course designation	This subject will provide knowledge on the principles and steps in assessment of food production and environmental sustainability, and on what to do to improve efficiency, protect environment and meet sustainability
Semester(s) in which the module is taught	3,4
Person responsible for the module	Assoc. Prof. Le, Ngoc Lieu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar, case study
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 20 h for lecture, 10 h for in-class group assignments Private study including examination preparation, specified in hours ¹³ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0

¹³ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None																																			
Course objectives	After studying this course, the students will be able to: - Understand the basics and the need of sustainability. - Assess the environmental impact of food supply chain. - Identify challenges in food processing toward environmental protection and sustainability and suggest the solution. - Develop critical thinking toward food sustainability.																																			
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Understand and recognize ethical and professional responsibilities toward environmental protection and global sustainability.</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Identify and solve the complex problems towards food sustainability with consideration other aspects.</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Acquire new knowledge and develop critical thinking through self-learning</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Understand and recognize ethical and professional responsibilities toward environmental protection and global sustainability.		Skill	CLO2. Identify and solve the complex problems towards food sustainability with consideration other aspects.		Attitude	CLO3. Acquire new knowledge and develop critical thinking through self-learning																						
Competency level	Course learning outcome (CLO)																																			
Knowledge	CLO1. Understand and recognize ethical and professional responsibilities toward environmental protection and global sustainability.																																			
Skill	CLO2. Identify and solve the complex problems towards food sustainability with consideration other aspects.																																			
Attitude	CLO3. Acquire new knowledge and develop critical thinking through self-learning																																			
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (~ 3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to sustainability</td><td>1</td><td>I, T</td></tr><tr><td>Sustainability and the Environment</td><td>1</td><td>T</td></tr><tr><td>The Environmental Impact of the Food Supply Chain</td><td>1</td><td>T</td></tr><tr><td>Impact Assessment and Intensity Metrics</td><td>1</td><td>T, U</td></tr><tr><td>Food Processing and Food Waste</td><td>1</td><td>T, U</td></tr><tr><td>Packaging, Energy and Distribution</td><td>1</td><td>T, U</td></tr><tr><td>Ecolabeling and Consumer Interest in Sustainable Products</td><td>1</td><td>T, U</td></tr><tr><td>Sustainability in Food Manufacturing Companies, Food Retailing and Food Service</td><td>1</td><td>T, U</td></tr><tr><td>Sustainability Principles and Sustainable Innovation for Food Products</td><td>1</td><td>T, U</td></tr><tr><td>Seminar presentation</td><td>1</td><td>U</td></tr></table>			Topic	Weight	Level	Introduction to sustainability	1	I, T	Sustainability and the Environment	1	T	The Environmental Impact of the Food Supply Chain	1	T	Impact Assessment and Intensity Metrics	1	T, U	Food Processing and Food Waste	1	T, U	Packaging, Energy and Distribution	1	T, U	Ecolabeling and Consumer Interest in Sustainable Products	1	T, U	Sustainability in Food Manufacturing Companies, Food Retailing and Food Service	1	T, U	Sustainability Principles and Sustainable Innovation for Food Products	1	T, U	Seminar presentation	1	U
Topic	Weight	Level																																		
Introduction to sustainability	1	I, T																																		
Sustainability and the Environment	1	T																																		
The Environmental Impact of the Food Supply Chain	1	T																																		
Impact Assessment and Intensity Metrics	1	T, U																																		
Food Processing and Food Waste	1	T, U																																		
Packaging, Energy and Distribution	1	T, U																																		
Ecolabeling and Consumer Interest in Sustainable Products	1	T, U																																		
Sustainability in Food Manufacturing Companies, Food Retailing and Food Service	1	T, U																																		
Sustainability Principles and Sustainable Innovation for Food Products	1	T, U																																		
Seminar presentation	1	U																																		
Examination forms	Multiple-choice questions, written test																																			

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: • Morawicki, R. O. (2011). Handbook of sustainability for the food sciences. John Wiley & Sons. • Baldwin, C. J. (Ed.). (2011). Sustainability in the food industry. Reference: • Kapoor, B., Singh, R., Kapoor, D., & Gautam, V. (Eds.). (2022). Environmental Sustainability in the Food Industry: A Green Perspective. CRC Press.

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CL O	1	2	3	4	5	6	7
1				3			
2		4					
3							1

3.Planned learning activities and teaching methods

Wee k	Topic	CLO	Assessments	Learning activities
1	Introduction to sustainability	1,2	Midterm/final examination	Lecture, discussion
2	Sustainability and the Environment	1,2	Midterm/final examination	Lecture, case studies
3	The Environmental Impact of the Food Supply Chain	1,2	Midterm/final examination	Lecture, case studies
4	Impact Assessment and Intensity Metrics	1,2	Midterm/final examination	Lecture, case studies
5	Food Processing and Food Waste	1,2	Midterm/final examination	Lecture, case studies
6	Packaging, Energy and Distribution	1,2	Midterm/final examination	Lecture, case studies
7	Ecolabeling and Consumer Interest in Sustainable Products	1,2	Midterm/final examination	Lecture, case studies
8	Sustainability in Food Manufacturing Companies, Food Retailing and Food Service	1,2	Midterm/final examination	Lecture, case studies
9-10	Midterm			

Week	Topic	CLO	Assessments	Learning activities
11	Sustainability Principles and Sustainable Innovation for Food Products	1,2	Midterm/final examination	Lecture, case studies
12	Seminar presentation	3	Presentation, Q&A	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar	1	30
Mid-term exam	1	35
Final exam	1	35

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Seminar presentation (30%)			Presentation 80%Pass
Midterm exam (35%)	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (35%)	Final exam 60%Pass	Final exam 60%Pass	

Note: %Pass (presentation): % students have scores greater than 80 out of 100.

%Pass (Midterm exam): % students have scores greater than 50 out of 100.

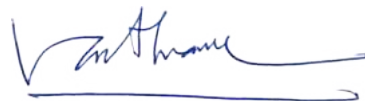
%Pass (Final exam): % students have scores greater than 50 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Ngoc Lieu
- Email: lnlieu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD MICROBIOLOGY

Course Code: BTFT234IU

1. General information

Course name	- <i>(in English)</i> Food Microbiology - <i>(in Vietnamese)</i> Vi sinh Thực phẩm
Course designation	This subject will provide knowledge on following: - Microorganisms and their occurrence in the foods - Intrinsic and extrinsic parameters of foods that affect microbial growth - Preservation techniques involving inhibit or inactivate microorganisms - Pathogens in foods and foodborne diseases - Application of microorganisms in food industry
Semester(s) in which the module is taught	4, 5
Person responsible for the module	Dr. Nguyen, Ngoc Thanh Tien
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ¹⁴ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology

¹⁴ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	After studying this course, the students will be able to: - Identify the groups of microorganisms in foods and their occurrence in some specific food groups. - Clarify the role of microorganisms in food processing and preservation. - Interpret relationship between microorganisms and food spoilage, food-borne illness and intoxication. - Interpret the growth of microorganisms in affecting by intrinsic and extrinsic factors of foods. - Report formally scientific aspect of food microbiology	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Recognize the important roles of microorganism and food industry and public health.
	Skill	CLO2. Identify the relationship between the presence, growth of microorganisms in food and apply appropriate solutions for keep foods have an acceptable shelf-life and safety.
	Attitude	CLO3. Collaborate well with other students and lecturer during discussion sessions

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to microbial world; history of food microbiology and significance of food microbiology	1	I
	Basics of bacteriology, presence of bacteria in foods	1	T
	Basics of fungi, virus and prions	1	T
	Factors affecting growth and survival of microorganisms: temperature (effects, calculation for heat treatment)	2	T
	Factors affecting growth and survival of microorganisms: redox potential and oxygen preferences	2	T
	Factors affecting growth and survival of microorganisms: acids and water activity	1	T
	Factors affecting growth and survival of microorganisms: antimicrobial content and nutrient content	1	T
	Food spoilage and preservation techniques to control food microorganism	2	T
	Foodborne diseases: classification and virulence factors	1	T
	Foodborne diseases: pathogens and mechanisms	1	T
	Application of food microbiology: fermentation and products	1	T, U
	Application of food microbiology: prebiotics, probiotics and synbiotics.	1	T, U
Examination forms	Multiple-choice, short answer written tests		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: • J.M. Jay. Modern Food Microbiology. 7th Edition, 2008. Chapman & Hall, NY. • B. Ray. Fundamental Food Microbiology. 5th Edition, 2013. CRC Press, NY. • Adams, M. R., & Moss, M. O. Food microbiology. 4th Edition, 2015. Cambridge, UK. RSC Pub.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO
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CL O	1	2	3	4	5	6	7
1		2					
2		4					
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to microbial world; history of food microbiology and significance of food microbiology	1, 2, 3	Midterm exam	Lecture, discussion
2	Basics of bacteriology, presence of bacteria in foods	1, 2, 3	Midterm exam	Lecture, discussion
3	Basics of fungi, virus and prions	1, 2, 3	Midterm exam	Lecture, discussion
4	Factors affecting growth and survival of microorganisms: temperature (effects, calculation for heat treatment)	1, 2, 3	Midterm exam	Lecture, discussion
5	Factors affecting growth and survival of microorganisms: redox potential and oxygen preferences	1, 2, 3	Midterm exam	Lecture, discussion
6	Factors affecting growth and survival of microorganisms: acids and water activity	1, 2, 3	Midterm exam	Lecture, discussion
7	Factors affecting growth and survival of microorganisms: nutrient content and naturally antimicrobial content of foods	1, 2, 3	Midterm exam	Lecture, discussion
8	Determination of microorganisms and indicator organisms	1, 2, 3	Final exam	Lecture, discussion
9-10	Midterm			
11	Food spoilage and preservation techniques to control food microorganism	1, 2, 3	Final exam	Lecture, discussion
12	Food Preservation techniques	1, 2, 3	Final exam	Lecture, discussion
13	Foodborne diseases: classification and virulence factors	1, 2, 3	Final exam	Lecture, discussion
14	Foodborne diseases: pathogens and mechanisms	1, 2, 3	Final exam	Lecture, discussion
15-16	Application of food microbiology: fermentation and products, prebiotics, probiotics and synbiotics	1, 2, 3	Final exam	Lecture, discussion
17	Seminar	2, 3, 4	Presentation, Q&A	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar	1-3	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Seminar (30%)			Assignment 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (40%)	Final exam 60%Pass	Final exam 60%Pass	

Note: %Pass (assignments): % students have scores greater than 65 out of 100.

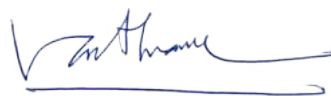
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: nntien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
School of Biotechnology

COURSE SYLLABUS

Course Name: PRACTICE IN FOOD MICROBIOLOGY

Course Code: BTFT254IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Microbiology - <i>(in Vietnamese)</i> Thực hành Vi sinh thực phẩm
Course designation	This subject will provide knowledge and skills on following: - Microorganisms and their occurrence in the foods. - Basic activities in a food microbiology laboratory. - Techniques for detection and enumeration of microbes in food.
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	4,5
Person responsible for the module	Msc. Nguyen Thi Huong Giang
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab works
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lab works Private study including examination preparation, specified in hours : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT234IU – Food Microbiology - Previous course (Course code – Course name): None

Course objectives	After studying this course, the students will be able to: - Understand more about the role of microorganism in food processing and preservation - Perform basic activities in a food microbiology laboratory - Apply general techniques to detect, isolate, culture and enumerate microorganism in food - Design & perform techniques to detect and enumerate total aerobic bacteria, coliform, <i>E.coli</i> , yeasts and moulds.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Get knowledge on how to determine, detect & enumerate different types of microbes in food	
	Skill	CLO2. Obtain analyzing techniques and interpreting the results	
	Attitude	CLO3. Work in group	
Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight (lab)	Level
	Introduction of basic activities in a food microbiology laboratory	1	I, T, U
	Detection and enumeration of total aerobic bacteria	1	T, U
	Detection and enumeration of total coliform	1	T, U
	Biochemical activity of <i>Salmonella</i>	1	T, U
	Detection and enumeration of total yeasts and moulds	1	T, U
	Making fermented food products and observing the morphology of MO used for fermentation	1	T, U
Examination forms	Labwork report, lab behavior and final exam		
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		

Reading list	<i>Textbooks:</i> - Robert, D., & Greenwood, M. 2003. Practical Food Microbiology (3rd ed.) UK: Blackwell Publishing. - Ray, D. 2000. Fundamental Food Microbiology (2nd ed.). New York: CRC Press. - Adams, M.R., & Ross., M.O. 2000. Food Microbiology (2nd ed.). Cambridge: Proposals Royal Society Chemistry. - Matthews, K. R., Kniel, K. E., & Montville, T. J. (2017). <i>Food microbiology: an introduction</i>. John Wiley & Sons. <i>References:</i> - ISO 7218:2007 Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations. D. Roberts & M. Greenwood. 2003. Practical Food Microbiology. Blackwell Publishing - ISO 7218:2007 Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations. - U.S. Food & Drug Administration. Bacteriological Analytical Manual. Chapter 3. Aerobic Plate Count. - ISO 4831. Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of coliforms – Most probable number technique. Third edition 2006-08-15. - BS ISO 7251:2005. Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> – Most probable number technique. British Standards Institution - ISO 21527-1: 2008. Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeasts and moulds– Part 1: Colony count technique in products with water activity greater than 0.95.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2						3	
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction of basic activities in a food microbiology laboratory	1, 2, 3	Lab report	Lecture, labwork
2	Detection and enumeration of total aerobic bacteria	1, 2, 3	Lab report	Lecture, labwork

3	Detection and enumeration of total coliform	1, 2, 3	Lab report	Lecture, labwork
4	Biochemical activity of <i>Salmonella</i>	1, 2, 3	Lab report	Lecture, labwork
5	Detection and enumeration of total yeasts and moulds	1, 2, 3	Lab report	Lecture, labwork
6	Making fermented food products and observing the morphology of MO used for fermentation	1, 2, 3	Lab report	Lecture, labwork
	Final exam			

4. Assessment plan

Course assessment policy

Methods	(%)
Lab report	50
Lab behavior	10
Final oral exam	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab report 50%	70%Pass	70%Pass	70%Pass
Lab behavior 10%	70%Pass	70%Pass	70%Pass
Final exam 40%	70%Pass	70%Pass	70%Pass

Note: %Pass (exam): % students have scores greater than 75 out of 100.

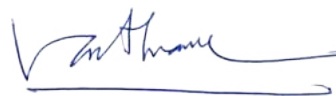
%Pass (lab report): % students have scores greater than 75 out of 100.

%Pass (lab behavior): % students have scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025
Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
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COURSE SYLLABUS

Course Name: NUTRITION AND FUNCTIONAL FOODS

Course Code: BTFT205IU

1. General information

Course name	- <i>(in English)</i> Nutrition and Functional Foods - <i>(in Vietnamese)</i> Dinh dưỡng và Thực phẩm chức năng
Course designation	This subject will provide knowledge on following: - Vitamins, minerals, micronutrients, and antioxidants including sources, metabolism, and functions in the human body. - Nutritive values of food. - Requirements for human health. - Nutraceuticals, and functional foods and their effects on human health beyond basic nutrition. - Food-related diseases.
Semester(s) in which the module is taught	4,5
Person responsible for the module	Dr. Nguyen, Van Toan
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, project, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ¹⁵ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology, BTFT156IU – Food Chemistry and Biochemistry

¹⁵

When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	After studying this course, the students will be able to: - Understand the roles of nutrients in the human body and know how to prevent nutrient deficiencies. - Evaluate dietary intake using food-based dietary guidelines - Understand the roles and importance of food labeling in regard to nutrition facts. - Understand the concepts of Functional Foods and Nutraceuticals, the newly emerged areas in nutritional sciences and develop an appreciation of the potential health benefits of these factors, especially in relation to age-associated chronic diseases.																							
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><td>Competency level</td><td colspan="2">Course learning outcome (CLO)</td></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Understand basic concepts of nutrition, roles of functional foods and application of functional foods in eating habits.</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Develop a healthy eating plan.</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Collaborate well with other students in seminar sessions.</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Understand basic concepts of nutrition, roles of functional foods and application of functional foods in eating habits.		Skill	CLO2. Develop a healthy eating plan.		Attitude	CLO3. Collaborate well with other students in seminar sessions.										
Competency level	Course learning outcome (CLO)																							
Knowledge	CLO1. Understand basic concepts of nutrition, roles of functional foods and application of functional foods in eating habits.																							
Skill	CLO2. Develop a healthy eating plan.																							
Attitude	CLO3. Collaborate well with other students in seminar sessions.																							
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><td>Topic</td><td>Weight</td><td>Level</td></tr><tr><td>Introduction to Nutrition</td><td>1</td><td>I</td></tr><tr><td>Food composition data system</td><td>3</td><td>T, U</td></tr><tr><td>Food and nutrition labeling</td><td>2</td><td>T</td></tr><tr><td>Dietary reference intake</td><td>3</td><td>T, U</td></tr><tr><td>Public health nutrition</td><td>3</td><td>T</td></tr><tr><td>Introduction to functional foods/nutraceuticals</td><td>3</td><td>T, U</td></tr></table>			Topic	Weight	Level	Introduction to Nutrition	1	I	Food composition data system	3	T, U	Food and nutrition labeling	2	T	Dietary reference intake	3	T, U	Public health nutrition	3	T	Introduction to functional foods/nutraceuticals	3	T, U
Topic	Weight	Level																						
Introduction to Nutrition	1	I																						
Food composition data system	3	T, U																						
Food and nutrition labeling	2	T																						
Dietary reference intake	3	T, U																						
Public health nutrition	3	T																						
Introduction to functional foods/nutraceuticals	3	T, U																						
Examination forms	Written tests																							
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.																							

Reading list	Textbook: ● Wardlaw, GM. Contemporary nutrition: issues and insights. New York, NY: McGraw-Hill Education, 2000. References: ●Sizer and Whitney. Nutrition Concepts and Controversies- Cengage Learning 14th Edition, 2017 ● Mann J, Truswell A. S. Essentials of Human Nutrition, 2nd ed, Oxford University Press. 2002 ● Joshua Rosenthal. Integrative Nutrition: A Whole-Life Approach to Health and Happiness, 4th ed, Integrative Nutrition, Inc., New York, NY, 2018 ● Michael J Gibney, Susan A Lanham-New, Aedin Cassidy, Hester H Vorster. Introduction to Human Nutrition 2nd Edition- John Wiley & Sons, Ltd., Publication, 2009
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1		3					
2		4					
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to Nutrition	1	Quiz 1	Lecture, discussion
2-4	Food composition data system	1,2, 3	Homework 1	Lecture, presentation
5-6	Food and nutrition labeling	1,2, 3	Midterm exam	Lecture, discussion
7-8	Dietary reference intake	1,2,3	Midterm exam	Lecture, discussion
9-10	Midterm			
11	Dietary reference intake	1,2,3	Final exam	Lecture, discussion
12-14	Public health nutrition	1,2,3	Final exam	Lecture, discussion
15-17	Introduction to functional foods/nutraceuticals	1,2,3	Quiz 2, Homework 2	Lecture, discussion, presentation
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
In-class quiz	2	10
Homework	2	20
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class quiz (10%)	Quiz 1 60%Pass	Quiz 2 60%Pass	
Homework (20%)			Report 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (40%)		Final exam 60%Pass	

Note: %Pass (quiz, homework): % students have scores greater than 70 out of 100.

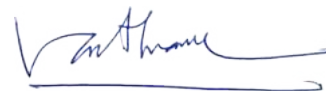
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer:

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Van Toan
- Email: nvtoan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD UNIT OPERATION 1

Course Code: BTFT331IU

1. General information

Course name	- <i>(in English)</i> Food Unit Operations 1 - <i>(in Vietnamese)</i> Quá trình và thiết bị Thực phẩm 1
Course designation	This subject will provide knowledge on following: - Review of heat transfer phenomena. - Structure and physical properties of water. - Psychrometry - Drying theory - Industrial food drying operations - Evaporation and concentration. Quality and stability of dried foods. - Theory of freezing effects in foods - Food freezing technology. Responses of foods to industrial freezing - Principles of heat preservation of foods - Thermal resistance of microorganisms and enzymes - Process lethality calculations - Industrial food sterilization processes - Non-thermal food preservation: principles of food irradiation.
Semester(s) in which the module is taught	5,6,7
Person responsible for the module	Assoc. Prof. Le, Ngoc Lieu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture, 15 h for exercise Private study including examination preparation, specified in hours ¹⁶ : 90 h	
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS	
Number of periods	Theory: 45 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology, BTFT203IU – Food Engineering Principles	
Course objectives	After studying this course, the students will be able to: - Integrate students' understanding of the principles of food engineering, chemistry and microbiology as applied in various industrial processes used in food preservation such as drying, freezing and application of heat. - Build the ability to understand and solve typical industrial problems using basic thermodynamic and engineering principles of heat and mass transfer. - Understand the effects of these unit operation processes on the food materials and their quality aspects.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Apply knowledge in mathematics, physics and statistics in solving problems related to food processing.
	Skill	CLO2. Communicate efficiently to present technical problems.
	Attitude	CLO3. Collaborate well with other students in team work

¹⁶ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to food unit operation, heat transfer	1	I, U
	Water in food	1	T, U
	Drying	3	T, U
	Evaporation	2	T, U
	Review	1	T, U
	Freezing	2	T, U
	Thermal preservation	2	T, U
	Food Irradiation	1	T
	Seminar	1	T, U
	Review	1	T, U
Examination forms	Multiple-choice questions, written test (problem solving)		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: • R. Paul Singh, Dennis R. Heldman. 2009. Introduction to food engineering. Academic Press. 4th Edition. References: • Ibarz, A., Barbosa-Cánovas, G.V. 2003. Unit operations in food engineering, Boca Raton, Fla., CRC Press, 889 p. • Evans J.A. 2008. Frozen Food Science and Technology. Wiley-blackwell Publishing.		

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CL O	1	2	3	4	5	6	7
1	3						
2			3				
3					3		

3.Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to food unit operation, heat transfer	1	in class exercise	Lecture, discussion
2	Water in food	1	in class exercise	Lecture, discussion
3-5	Drying	1	in class exercise	Lecture, discussion
6-7	Evaporation	1	in class exercise	Lecture, discussion
8	Review	1	in class exercise	Discussion
9-10	Midterm			
11-12	Freezing	1	in class exercise	Lecture, discussion
13-14	Thermal preservation	1	in class exercise	Lecture, discussion
15	Food Irradiation	1		Lecture, discussion
16	Seminar	2,3	Presentation, Q&A	Presentation, Q&A
17	Review	1	in class exercise	Discussion
18-20	Reserve week and Final exam			

4.Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar presentation	1	25
Mid-term exam	1	35
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Seminar presentation (25%)		70%Passes	70%Passes
Midterm exam (35%)	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass		

Note: %Pass (exam): % students have scores greater than 50 out of 100.

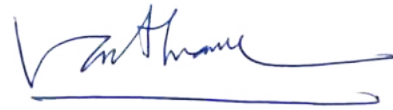
%Pass (seminar): % students have scores greater than 80 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Ngoc Lieu
- Email: lnlieu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

Course Name: PRACTICE IN FOOD UNIT OPERATION 1

Course Code: BTFT351IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Unit Operations 1 - <i>(in Vietnamese)</i> Thực hành Quá trình và thiết bị Thực phẩm 1
Course designation	<i>This subject will provide knowledge on following:</i> - <i>Practical experiments for students in the field of food processing, including moisture measurement, drying process and specific heat determination</i>
Course type	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the module is taught	5,6,7
Person responsible for the module	MSc. Trần Thị Yến Nhi
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lab
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 3 h for lecture and 27 h for lab Private study including examination preparation, specified in hours ¹⁷ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

¹⁷ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT331IU – Food Unit Operations 1 - Previous course (Course code – Course name): None														
Course objectives	After studying this course, the students will be able to: – Apply knowledge of heat and mass transfer and food processing in food-related problem solving. – Practice experiments in food unit operations. – Understand how to collect and analyze data, make conclusion and judgements in food unit operations.														
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Apply knowledge in mathematics, physics and statistics in solving problems related to food unit operation.</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Perform lab-work by applying techniques in food engineering, analyzing and interpreting the obtained data for report.</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Collaborate well with other students in lab-work and report writing to meet the established goals</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Apply knowledge in mathematics, physics and statistics in solving problems related to food unit operation.		Skill	CLO2. Perform lab-work by applying techniques in food engineering, analyzing and interpreting the obtained data for report.		Attitude	CLO3. Collaborate well with other students in lab-work and report writing to meet the established goals	
Competency level	Course learning outcome (CLO)														
Knowledge	CLO1. Apply knowledge in mathematics, physics and statistics in solving problems related to food unit operation.														
Skill	CLO2. Perform lab-work by applying techniques in food engineering, analyzing and interpreting the obtained data for report.														
Attitude	CLO3. Collaborate well with other students in lab-work and report writing to meet the established goals														
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lab session (5 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Determination of moisture in food</td><td>2</td><td>T, U</td></tr><tr><td>Convective drying</td><td>2</td><td>T, U</td></tr><tr><td>Determination of specific heat of food</td><td>2</td><td>T, U</td></tr></table>			Topic	Weight	Level	Determination of moisture in food	2	T, U	Convective drying	2	T, U	Determination of specific heat of food	2	T, U
Topic	Weight	Level													
Determination of moisture in food	2	T, U													
Convective drying	2	T, U													
Determination of specific heat of food	2	T, U													
Examination forms	Lab report, Q&A														
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.														
Reading list	Textbook: • R. Paul Singh, Dennis R. Heldman. 2014. Introduction to food engineering. Academic Press. 5th Edition. References: • Ibarz, A., Barbosa-Cánovas, G.V. 2003. Unit operations in food engineering, Boca Raton, Fla., CRC Press, 889 p. • Evans J.A. 2008. Frozen Food Science and Technology. Wiley-blackwell Publishing.														

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Determination of moisture in food	1, 2, 3	Lab report, Q&A	Lecture, labwork
2	Convective drying	1, 2, 3	Lab report, Q&A	Lecture, labwork
3	Determination of specific heat of food	1, 2, 3	Lab report, Q&A	Lecture, labwork

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Lab participation & behaviour	3	10%
Lab report (Data analysis)	3	45%
Lab report (Discussion)	3	45%

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab report	70%Pass	70%Pass	70%Pass
Lab participation & behaviour		Lab participation & behaviour 80%Pass	Lab participation & behaviour 80%Pass

Note: %Pass (lab report): % students have scores greater than 80 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc.Trần Thị Yến Nhi

- Email: ttynhi@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'Nguyễn Văn Thuận', with a long horizontal flourish extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD PHYSICS AND COLLOIDS

Course Code: BTFT461IU

1. General information

Course name	- <i>(in English)</i> Food Physics and Colloids - <i>(in Vietnamese)</i> Vật lý thực phẩm và hệ keo
Course designation	This course is designed to provide an understanding of the physical properties of foods and how they influence the design and operation of major food processing operations and also how they influence consumer perception and preferences for foods. The module covers physical, rheological and thermal properties of foods including the principles and design of measurement techniques. The course also gives an overview of the molecular and colloidal interactions found in food products, and discusses the effect of these interactions on stability of these products.
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	6, 7, 8
Person responsible for the module	Assoc. Prof. Le, Ngoc Lieu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 20 h for lecture, 10 h for in-class discussion Private study including examination preparation, specified in hours ¹⁸ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS

¹⁸

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 30 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT203IU – Food Engineering Principles	
Course objectives	After studying this course, the students will be able to: – Integrate students' understanding of the principles of food engineering, chemistry and microbiology as applied in various industrial processes used in food preservation such as drying, freezing and application of heat. – Build the ability to understand and solve typical industrial problems using basic thermodynamic and engineering principles of heat and mass transfer. – Understand the effects of these unit operation processes on the food materials and their quality aspects.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Apply knowledge in mathematics, physics and statistics in solving problems related to food processing.
	Skill	CLO2. Communicate efficiently to present technical problems.
	Attitude	CLO3. Acquire new knowledge through self-learning

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)																																	
	<table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Water activity (Sorption isotherm, water activity, surface adhesion, shelf-life related to water activity) Mass and density, geometric properties (Specific gravity, particle size, image analysis, surface area, sedimentation)</td><td>1</td><td>T, U</td></tr><tr><td>Rheological Properties (Elastic properties, modulus, rheological models, flow behavior, viscosity)</td><td>1</td><td>T, U</td></tr><tr><td>Interfacial Phenomena (Surface tension, interfaces, adsorption kinetics, dynamic measurement)</td><td>1</td><td>T, U</td></tr><tr><td>Permeability (Diffusion, transport phenomena, food packaging considerations, measurement of permeability)</td><td>1</td><td>T, U</td></tr><tr><td>Thermal Properties (Thermodynamics, phase transition, measurement of thermal properties, caloric value of food)</td><td>1</td><td>T, U</td></tr><tr><td>Optical Properties (Refraction, colorimetry, color measurement) Colloidal Properties and Sensory Perception (Emulsions, foams, gels, and dispersions)</td><td>1</td><td>T, U</td></tr><tr><td>Foams (Chemistry, interfaces, stability, antifoaming) Dispersions and micellar solutions (Chemistry, characteristics, measurement)</td><td>1</td><td>T, U</td></tr><tr><td>Emulsion (Chemistry, characteristics, interactions, thermodynamics, ingredients, interfaces, formation, stability, rheology)</td><td>1</td><td>T, U</td></tr><tr><td>Gels (Chemistry, characteristics, gelation technologies, ingredients, microscopy and rheology, stability)</td><td>1</td><td>T, U</td></tr><tr><td>Seminar session</td><td>1</td><td>U</td></tr></table>	Topic	Weight	Level	Water activity (Sorption isotherm, water activity, surface adhesion, shelf-life related to water activity) Mass and density, geometric properties (Specific gravity, particle size, image analysis, surface area, sedimentation)	1	T, U	Rheological Properties (Elastic properties, modulus, rheological models, flow behavior, viscosity)	1	T, U	Interfacial Phenomena (Surface tension, interfaces, adsorption kinetics, dynamic measurement)	1	T, U	Permeability (Diffusion, transport phenomena, food packaging considerations, measurement of permeability)	1	T, U	Thermal Properties (Thermodynamics, phase transition, measurement of thermal properties, caloric value of food)	1	T, U	Optical Properties (Refraction, colorimetry, color measurement) Colloidal Properties and Sensory Perception (Emulsions, foams, gels, and dispersions)	1	T, U	Foams (Chemistry, interfaces, stability, antifoaming) Dispersions and micellar solutions (Chemistry, characteristics, measurement)	1	T, U	Emulsion (Chemistry, characteristics, interactions, thermodynamics, ingredients, interfaces, formation, stability, rheology)	1	T, U	Gels (Chemistry, characteristics, gelation technologies, ingredients, microscopy and rheology, stability)	1	T, U	Seminar session	1	U
	Topic	Weight	Level																															
	Water activity (Sorption isotherm, water activity, surface adhesion, shelf-life related to water activity) Mass and density, geometric properties (Specific gravity, particle size, image analysis, surface area, sedimentation)	1	T, U																															
	Rheological Properties (Elastic properties, modulus, rheological models, flow behavior, viscosity)	1	T, U																															
	Interfacial Phenomena (Surface tension, interfaces, adsorption kinetics, dynamic measurement)	1	T, U																															
	Permeability (Diffusion, transport phenomena, food packaging considerations, measurement of permeability)	1	T, U																															
	Thermal Properties (Thermodynamics, phase transition, measurement of thermal properties, caloric value of food)	1	T, U																															
	Optical Properties (Refraction, colorimetry, color measurement) Colloidal Properties and Sensory Perception (Emulsions, foams, gels, and dispersions)	1	T, U																															
	Foams (Chemistry, interfaces, stability, antifoaming) Dispersions and micellar solutions (Chemistry, characteristics, measurement)	1	T, U																															
Emulsion (Chemistry, characteristics, interactions, thermodynamics, ingredients, interfaces, formation, stability, rheology)	1	T, U																																
Gels (Chemistry, characteristics, gelation technologies, ingredients, microscopy and rheology, stability)	1	T, U																																
Seminar session	1	U																																
Examination forms	Multiple-choice questions, written test																																	
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.																																	

Reading list	Textbook: - Figura, L., & Teixeira, A. A. (2007). Food physics: physical properties-measurement and applications. Springer Science & Business Media. - Dickinson, E., & Bergenstahl, B. (Eds.). (1997). Food colloids: proteins, lipids and polysaccharides. Elsevier. References: - McClements, D. J. (2015). Food emulsions: principles, practices, and techniques. CRC press. - Hiemenz, P. C., & Rajagopalan, R. (Eds.). (2016). Principles of Colloid and Surface Chemistry, revised and expanded. CRC press. - Birdi, K. A. S. (Ed.). (2015). Handbook of surface and colloid chemistry. CRC press.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2			3				
3							1

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Water activity, mass and density, geometric properties	1	Midterm exam	Lecture, case studies
2	Rheological Properties	1	Midterm exam	Lecture, case studies
3	Interfacial Phenomena	1	Midterm exam	Lecture, case studies
4	Permeability	1	Midterm exam	Lecture, case studies
5	Thermal Properties	1	Final exam	Lecture, case studies
6	Optical Properties; Colloidal Properties and Sensory Perception	1	Final exam	Lecture, case studies
7	Foams; Dispersions and micellar solutions	1	Final exam	Lecture, discussion
8	Emulsion	1	Final exam	Lecture, discussion
9-10	Midterm			
11	Gels	1	Final exam	Lecture, discussion
12	Seminar session	2,3	Presentation, Q&A	Presentation, Q&A

18-20	Reserve week and Final exam			
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4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar presentation	1	25
Mid-term exam	1	35
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Seminar presentation (25%)		70%Pass	70%Pass
Midterm exam (35%)	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass		

Note: %Pass (exam): % students have scores greater than 50 out of 100.

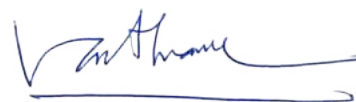
%Pass (seminar): % students have scores greater than 80 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Ngoc Lieu
- Email: lnlieu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

Course Name: FOOD ANALYSIS

Course Code: BTFT332IU

1. General information

Course name	- <i>(in English)</i> Food Analysis - <i>(in Vietnamese)</i> Phân tích Thực phẩm
Course designation	This subject will provide knowledge on following: - Principles and instruments in food analyses including the basic techniques in food analyses using for qualitative and quantitative analyses of moisture, protein, carbohydrate, lipid, dietary fiber, mineral and vitamins - Advanced methods in food analyses such as UV/Vis Spectroscopy, Atomic Absorption Spectroscopy, TLC, HPLC, and GC.
Semester(s) in which the course is taught	5,6
Person responsible for the course	Prof. Pham, Van Hung
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar, lab works.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ¹⁹ : 90
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0

¹⁹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): CH009IU – Organic Chemistry, BTFT201IU – Introduction to Food Science and Technology									
Course objectives	After studying this course, the students will be able to: - Get the basic knowledge on the principles of chemical analysis. - Get the basic knowledge on the advanced analysis methods using for food analysis. - Apply a suitable analysis technique for a certain food component.									
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Have the basic knowledge on the principles and the advanced analysis methods using for food analysis CLO2. Apply a suitable analysis process for a certain food component in consideration of constraints in public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors</td></tr><tr><td>Skill</td><td>CLO3. Communicate well with lecturers and other students</td></tr><tr><td>Attitude</td><td>CLO4. Work on group for presentation</td></tr></table>		Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Have the basic knowledge on the principles and the advanced analysis methods using for food analysis CLO2. Apply a suitable analysis process for a certain food component in consideration of constraints in public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	Skill	CLO3. Communicate well with lecturers and other students	Attitude	CLO4. Work on group for presentation
Competency level	Course learning outcome (CLO)									
Knowledge	CLO1. Have the basic knowledge on the principles and the advanced analysis methods using for food analysis CLO2. Apply a suitable analysis process for a certain food component in consideration of constraints in public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors									
Skill	CLO3. Communicate well with lecturers and other students									
Attitude	CLO4. Work on group for presentation									

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)			
	Wee k	Content	Weight	Level
	1	Introduction to food analysis	1	I
	2	Total dried basis and moisture Ash and mineral analyses	1	T, U
	3	Protein & Lipid analysis	1	T, U
	4	Spectroscopy: basic principles UV/Visible Spectroscopy	1	T, U
	5	- Spectroscopy: Quantitative analysis - Total protein analysis	1	T, U
	6	Total carbohydrate and total phenolic analysis	1	T, U
	7	Atomic absorption spectroscopy (AAS)	1	T, U
	8	Group presentation 1	1	I, U
	9	Principles of chromatography and Thin layer chromatography (TLC)	1	T, U
	10	HPLC: column, mobile phase, sample, detector, analysis techniques	1	T, U
	11	Gas Chromatography (GC): introduction, column, analysis theory, detector	1	T, U
	12	Amino acid composition analysis	1	T, U
	13	Fatty acid composition analysis	1	T, U
	14	Sugar composition analysis	1	T, U
	15	Vitamin & Mineral composition analysis	1	T, U
Examination forms	<i>Written test</i>			
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.			
Reading list	Textbook: • Food Analysis by S. Suzanne Nielsen, Fifth Edition, Kluwer Academic/Plenum Publishers, New York, NY, 2017 References: • Articles in peer-review journals in the field of Food Science			

2.Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2		4					
3			3				
4					3		

3.Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to food analysis	1	Midterm exam	Lecture, Discussion
2	Total dried basis and moisture Ash and mineral analyses	1,2	Assignment	Lecture, Discussion
3	Protein & Lipid analysis	1,2	Assignment	Lecture, Discussion
4	Spectroscopy: basic principles UV/Visible Spectroscopy	1	Midterm exam	Lecture, Discussion
5	- Spectroscopy: Quantitative analysis - Total protein analysis	1,2	Assignment	Lecture, Discussion
6	Total carbohydrate and total phenolic analysis	1,2	Assignment	Lecture, Discussion
7	Atomic absorption spectroscopy (AAS)	1,2	Assignment	Lecture, Discussion
8	Group presentation 1	2, 3, 4	Group presentation	Q&A
9-10	Midterm			
11	Principles of chromatography and Thin layer chromatography (TLC)	1,2	Final exam	Lecture, Discussion
12	HPLC: column, mobile phase, sample, detector, analysis techniques	1,2	Final exam	Lecture, Discussion
13	Gas Chromatography (GC): introduction, column, analysis theory, detector	1,2	Final exam	Lecture, Discussion
14	Amino acid composition analysis	1,2	Group presentation	Lecture, Discussion, Q&A
15	Fatty acid composition analysis	1,2	Group presentation	Lecture, Discussion, Q&A
16	Sugar composition analysis	1,2	Group presentation	Lecture, Discussion, Q&A
17	Vitamin & Mineral composition analysis	1,2	Group presentation	Lecture, Discussion, Q&A
18-20	Reserve week and Final exam			

4.Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignments, presentation	1-5	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Assignment, Presentation (30%)		Assignment 90%Pass	Presentation 90%Pass	Presentation 90%Pass
Midterm exam (30%)	Midterm exam 80%Pass	Midterm exam 90%Pass		
Final exam (40%)	Final exam 80%Pass	Final exam 80%Pass		

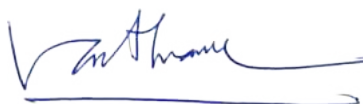
Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Prof. Pham Van Hung
- Email: pvhung@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
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School of Biotechnology

COURSE SYLLABUS

Course Name: PRACTICE IN FOOD ANALYSIS

Course Code: BTFT352IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Analysis - <i>(in Vietnamese)</i> Thực hành Phân tích Thực phẩm
Course designation	This subject will provide practical skills on following: - Compositional analysis of foods, including moisture, ash, fiber, total carbohydrates, protein, lipid, Vitamin C, and total flavonoid content. - Ability to apply specific methods and analytical techniques to determine chemical composition and characteristics, physical properties, and constituents of particular food products. - Advantages and disadvantages of using traditional and rapid methods in food analysis - A proficient implementation of lab safety practices
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the course is taught	5,6, 7
Person responsible for the course	MSc. Trần Thị Yến Nhi
Language	English
Relation to curriculum	Compulsory
Teaching methods	lab works
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lab work Private study including examination preparation, specified in hours ²⁰ : 30

²⁰

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS		
Number of periods	Theory: 0 Practice: 15		
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT332IU – Food Analysis - Previous course (Course code – Course name): None		
Course objectives	After studying this course, the students will be able to: - Get the basic knowledge on the principles of chemical analysis. - Get the basic knowledge on the advanced analysis methods used for food analysis. - Apply a suitable analysis technique for a certain food component. - Have good analysis technique in the field of food technology		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Have knowledge on how to determine different characteristics of food	
	Skill	CLO3. Know analyzing techniques and interpreting the results	
	Attitude	CLO4. Work in group	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lab session (10 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight (lab)	Level
	Determination of moisture content	0.5	T, U
	Determination of ash content	0.5	T, U
	Determination of lipid content	1	T, U
	Determination of protein content	1	T, U
	Determination of crude fiber content	1	T, U
	Determination of total carbohydrate content	1	T, U
	Determination of vitamin C content	0.5	T, U
	Determination of total flavonoid content	0.5	T, U
	Examination forms	Report	
Study and examination requirements	Attendance: A minimum attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: - Food Analysis by S. Suzanne Nielsen, Fifth Edition, Kluwer Academic/Plenum Publishers, New York, NY, 2017 References: - AACC International (2010) Approved methods of analysis, 11th edn. (On-line) AACC International, St. Paul, MN - AOAC International (2007) Official methods of analysis, 18th edn, 2005; Current through revision 2, 2007 (On-line).AOAC International, Gaithersburg, MD - Bradley RL Jr (2010) Moisture and total solids analysis, Ch.6.In: Nielsen SS (ed) Food Analysis, 4th edn. Springer, New York - Food Analysis, Theory and Practice, 3rd Edition; Yeshajahn Pomeranz, Clifton E. Meloan. Chapman and Hall. 1994. - Nielsen SS (2010) Determination of fat content, Ch.4.In: Nielsen SS, Food analysis laboratory manual, 2nd edn. Springer, New York - Pham, H. V. (n.d.). Food analysis lab manual (Vol. 2). Ho Chi Minh, International University. Vietnam National University HCMC - Wehr HM, Frank JF (eds) (2004) Standard methods for the examination of dairy products, 16th edn. American Public Health Association, Washington,
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2						4	
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Determination of moisture content Determination of ash content Determination of lipid content	1, 2, 3	Lab report, presentation	Lecture, labwork
2	Determination of protein content Determination of vitamin C content Determination of crude fiber content	1, 2, 3	Lab report, presentation	Lecture, labwork
3	Determination of total carbohydrate content Determination of total flavonoid content	1, 2, 3	Lab report, presentation	Lecture, labwork

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
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Lab participation and behavior	10	Lab participation and behavior
Lab report	90	Lab report

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab report (90%)	Lab report 70%Pass	Lab report 70%Pass	Lab report 70%Pass
Lab participation and behavior		Lab participation and behavior 70%Pass	Lab participation and behavior 70%Pass

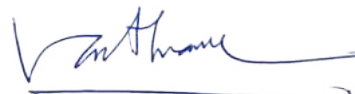
Note: %Pass: Target that % of students having scores greater than 80 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Trần Thị Yến Nhi
- Email: ttynhi@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: ENZYME AND FOOD FERMENTATION

Course Code: BTFT236IU

1. General information

Course name	- <i>(in English)</i> Enzyme and Food Fermentation - <i>(in Vietnamese)</i> Enzyme và Lên men Thực phẩm
Course designation	This subject will provide knowledge on following: - Basic concepts of enzyme, the production and application of enzymes in food industry - Important reactions of enzymes. - Technological processes and equipment in the production of different fermented foods.
Semester(s) in which the module is taught	4, 5, 6
Person responsible for the module	Assoc. Prof. Le, Hong Phu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ²¹ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology, BTFT156IU – Food Chemistry and Biochemistry

²¹

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	After studying this course, the students will be able to: - Understand enzyme reaction mechanism - Classify and apply enzymes in food processing - Understand classification, characteristics, and origin of microorganisms in food fermentation. - Understand the activities of microorganisms and their effects to the nature of the product - Understand Processing of fermented foods including growth, maintenance, and storage of microorganisms containing desired enzymes. - Solve the problems that arise in the fermentation process and settlement methods.																																			
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><td>Competency level</td><td colspan="2">Course learning outcome (CLO)</td></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Understand food enzymes, technological processes, and equipment in the production of different fermented foods</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Apply knowledge of isolated enzyme or enzymes from microbes in food processing</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Develop communication skill through presentation and assignment</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Understand food enzymes, technological processes, and equipment in the production of different fermented foods		Skill	CLO2. Apply knowledge of isolated enzyme or enzymes from microbes in food processing		Attitude	CLO3. Develop communication skill through presentation and assignment																						
Competency level	Course learning outcome (CLO)																																			
Knowledge	CLO1. Understand food enzymes, technological processes, and equipment in the production of different fermented foods																																			
Skill	CLO2. Apply knowledge of isolated enzyme or enzymes from microbes in food processing																																			
Attitude	CLO3. Develop communication skill through presentation and assignment																																			
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><td>Topic</td><td>Weight</td><td>Level</td></tr><tr><td>Introduction to Food enzymes</td><td>1</td><td>I</td></tr><tr><td>Enzyme reaction mechanism & applied in food processing</td><td>1</td><td>T</td></tr><tr><td>Microorganisms in fermented foods</td><td>1</td><td>T</td></tr><tr><td>Benefits and nutritional values of fermented foods, other forms of fermentation, the substrate for fermentation</td><td>2</td><td>T</td></tr><tr><td>Review</td><td>1</td><td>T, U</td></tr><tr><td>Production technology of traditional fermented food products. Production of breads and yeast breads, buttermilk, lassi, fermented pork roll</td><td>2</td><td>T</td></tr><tr><td>The traditional fermentation products: Chao, soy sauce, yogurt, tempeh, miso, sauerkraut & single cell protein</td><td>2</td><td>T</td></tr><tr><td>Production technology of modern fermented food products. Production of alcohol, wine, beer, vinegar, sausages</td><td>3</td><td>T</td></tr><tr><td>Seminar</td><td>1</td><td>T</td></tr><tr><td>●Review</td><td>1</td><td>T, U</td></tr></table>			Topic	Weight	Level	Introduction to Food enzymes	1	I	Enzyme reaction mechanism & applied in food processing	1	T	Microorganisms in fermented foods	1	T	Benefits and nutritional values of fermented foods, other forms of fermentation, the substrate for fermentation	2	T	Review	1	T, U	Production technology of traditional fermented food products. Production of breads and yeast breads, buttermilk, lassi, fermented pork roll	2	T	The traditional fermentation products: Chao, soy sauce, yogurt, tempeh, miso, sauerkraut & single cell protein	2	T	Production technology of modern fermented food products. Production of alcohol, wine, beer, vinegar, sausages	3	T	Seminar	1	T	●Review	1	T, U
Topic	Weight	Level																																		
Introduction to Food enzymes	1	I																																		
Enzyme reaction mechanism & applied in food processing	1	T																																		
Microorganisms in fermented foods	1	T																																		
Benefits and nutritional values of fermented foods, other forms of fermentation, the substrate for fermentation	2	T																																		
Review	1	T, U																																		
Production technology of traditional fermented food products. Production of breads and yeast breads, buttermilk, lassi, fermented pork roll	2	T																																		
The traditional fermentation products: Chao, soy sauce, yogurt, tempeh, miso, sauerkraut & single cell protein	2	T																																		
Production technology of modern fermented food products. Production of alcohol, wine, beer, vinegar, sausages	3	T																																		
Seminar	1	T																																		
●Review	1	T, U																																		
Examination forms	Written tests																																			

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: • Wood, J. B. 1985. Microbiology of fermented foods. Volumes I and II. Elsevier Applied Science Publishers. London, England References: • Biotechnology: Food Fermentation by VK Joshi and Ashok Pandey • J.M. Jay. Modern Food Microbiology. 6th Edition, 2000. Chapman & Hall, NY. • Robert J. Whitehurst and Maarten van Oort 2009. Enzymes in food technology. Volumes I. A John Wiley & Sons, Ltd., Publication.

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	2						
2	3						
3			3		3		

3.Planned learning

activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to Food enzymes	1,2	Midterm exam	Lecture, discussion
2	Enzyme reaction mechanism & applied in food processing	1,2	Midterm exam	Lecture, discussion
3	Microorganisms in fermented foods	1,2	Midterm exam	Lecture, discussion
4-5	Benefits and nutritional values of fermented foods, other forms of fermentation, the substrate for fermentation	1,2	Midterm exam	Lecture, discussion
6	Review	3	Homework 1	Lecture, discussion
7-8	Production technology of traditional fermented food products. Production of breads and yeast breads, butter milk, lassi, fermented pork roll	1,2	Midterm exam	Lecture, discussion
9-10	Midterm			
11-12	The traditional fermentation products: Chao, soy sauce, yogurt, tempeh, miso, sauerkraut & single cell protein	1,2	Final exam	Lecture, discussion

Week	Topic	CLO	Assessments	Learning activities
13-15	Production technology of modern fermented food products. Production of alcohol, wine, beer, vinegar, sausages	1,2	Final exam	Lecture, discussion
16	Seminar	3	Presentation	Presentation, Q&A
17	Review	3	Homework 2	Lecture, discussion
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Homework, presentation	1-3	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Homework/Presentation (30%)		Presentation 70%Pass	Presentation 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass		
Final exam (40%)	Final exam 60%Pass		

Note: %Pass (Presentation): % students have scores greater than 80 out of 100.

%Pass (exam): % students have scores greater than 60 out of 100.

6. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Hong Phu
- Email: lhphu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
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COURSE SYLLABUS

Course Name: PRACTICE IN ENZYME AND FOOD FERMENTATION

Course Code: BTFT256IU

1. General information

Course name	- <i>(in English)</i> Practice in Enzyme and Food Fermentation - <i>(in Vietnamese)</i> Thực hành Enzyme và Lên men Thực phẩm
Course designation	This subject will provide practical knowledge and skills on following: - Food enzyme applications. - Technological processes and equipment in the production of different fermented foods.
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	5,6
Person responsible for the module	Dr. Nguyen Ngoc Thanh Tien
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours : 30
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT236IU – Enzyme and Food Fermentation - Previous course (Course code – Course name): None		
Course objectives	After studying this course, the students will able to: – Understand classification and application of enzymes in food processing, enzyme reaction mechanism. – Understand classification, characteristics and origin of microorganisms in the food fermentation, metabolic activities of microorganisms and their effects to the nature of the product. – Understand processing of fermented foods. – Understand growth, maintenance and storage of microorganisms containing desired enzymes. – Identify the problems arise in the fermentation process and settlement methods.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Knowledge on how to produce pectinase, determine its activity and its use in juice production as well as to produce beer	
	Skill	CLO2. Perform experiments and analyze data CLO3. Present the results well	
	Attitude	CLO4. Work well in a group	
Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight (lab)	Level
	Medium preparation and microbial inoculation	2	T, U
	Determination of pectinase activity and its effect on juice production	2	T, U
	Sugar content determination of different types of beer	2	T, U
Examination forms	Labwork report		
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged.		
	Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		

Reading list	<i>Textbook:</i> • Wood, J. B. 1985. Microbiology of fermented foods. Volumes I and II. Elsevier Applied Science Publishers. London, England <i>References:</i> • Biotechnology: Food Fermentation by VK Joshi and Ashok Pandey • J.M. Jay. 2000. Modern Food Microbiology, 6th Edition. Chapman & Hall, NY. • Josie Ochsner Follow, H. (2015, September 12). Pectinase EEI. Retrieved July 08, 2020, from https://www.slideshare.net/JosieOchsner/pectinase-eei • Hutkins, R. W. (2006). Beer Fermentation. In R. W. Hutkins, <i>Microbiology and Technology of Fermented Foods</i> (pp. 301- 349). Oxford: Blackwell Publishing Ltd. • Lodolo, E. J., Kock, J. L., & Axcell, B. C. (2008). The yeast <i>Saccharomyces cerevisiae</i>- the main character in beer brewing. <i>FEMS Yeast Res</i> 8 , 1018- 1036. • Willaert, R. (2007). The Beer Brewing Process: Wort Production and Beer Fermentation. In Y. H. Hui, <i>Handbook of Food Products Manufacturing</i> (pp. 443- 507). New Jersey: John Wiley& Sons, Inc.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2						3	
3			2				
4					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	– Prepare medium for lab 1, 2 – Learn to use haemocytometer – Inoculate <i>Saccharomyces cerevisiae</i> – Inoculate <i>Aspergillus niger</i>	1, 2, 3, 4	Lab report	Lecture, labwork
2	– Determine microbial pectinase activity – Determine effect of pectinase on pineapple juice production	1, 2, 3, 4	Lab report	Lecture, labwork
3	– Determine some characteristics of beers + Reducing sugar + Alcohol degree + Brix + Microbial amount	1, 2, 3, 4	Lab report	Lecture, labwork

4. Assessment plan

Course assessment policy

Methods	(%)
Lab participation and behavior	10
Lab report	90

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Lab participation and behavior				
Lab report	70%Pass		70%Pass	70%Pass

Note: %Pass (Lab participation and behavior): % students have scores greater than 75 out of 100.

%Pass (lab report): % students have scores greater than 75 out of 100.

5. **Date revised:** April, 2024

6. **Course coordinator/Lecturer**

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: nnttien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: TOXICOLOGY AND FOOD SAFETY

Course Code: BTFT303IU

1. General information

Course name	- <i>(in English)</i> Toxicology and Food Safety - <i>(in Vietnamese)</i> Độc tố học và An toàn Thực phẩm
Course designation	This subject will provide knowledge on following: - Fundamental concepts and the principles of toxicology and major toxic modes of foodborne toxicants via chemical natures, phases of toxicological effects, metabolism and toxicity mechanisms. - A deep understanding of how food toxicology is relevant to food safety and critical steps to establish HACCP plans.
Semester(s) in which the module is taught	5, 6, 7
Person responsible for the module	Assoc. Prof. Nguyen, Vu Hong Ha
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ²² : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0

²²

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology, BTFT205IU – Nutrition and Functional Foods		
Course objectives	After studying this course, the students will be able to: - Recognize basic principles of toxicology, the main hazardous modes of foodborne contaminants through an understanding of their chemical makeup, metabolic processes, stages of toxicological impacts. - Recognize specific types of foodborne toxic agents including naturally occurring substances, microbial toxins, food additives and food processing-derived toxins. - Assess risks of toxic substances in the food chains and building up HACCP plans to prevent food hazards.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand basic concepts and application fields of toxicology and major toxic modes of foodborne toxicants.	
	Skill	CLO2. Build up and assess HACCP plans for food products.	
	Attitude	CLO3. Collaborate well with other students in seminar sessions	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction of food toxicology	2	I, T
	General principles of toxicology	3	I, T
	Factors affecting food toxicology	1	T
	Food hygiene and sanitation	1	T
	System for food surveillance and risk prevention	3	T, U
	Food safety operation in food supply chain	3	T, U
	In-class presentation (Toxins and hazardous substances found in foods)	2	T, U
Examination forms	Multiple choices and written tests		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: ● Shibamoto, T., & Bjeldanes, L.F. (2009). Introduction to Food Toxicology (2 ed.). USA: Elsevier Reference books: ● Byung-Mu Lee, Sam Kacew, Hyung Sik Kim. (2017). Lu's Basic Toxicology. Basic toxicology (7th ed.). CRC Press. ● Marriott, N. G., Schilling, M.W & Gravani, R.B. (2018). Principles of Food Sanitation (6th ed). New York: Springer. ● Mortimore S, & Wallace, C. (2013). HACCP: A Practical Approach (3rd ed). Springer Science & Business Media • Lectures and other study materials will be on Blackboard of the International University
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	2						
2		4					
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1-2	Introduction of food toxicology	1	Midterm exam	Lecture, discussion
3-5	General principles of toxicology	1,2	Midterm exam	Lecture, discussion
6	Factors affecting food toxicology	1,2	Midterm exam	Lecture, discussion
7	Food hygiene and sanitation	1,2,3	Final exam	Lecture, discussion
8	System for food surveillance and risk prevention	1,2,3	Final exam	Lecture, discussion
9-10	Midterm			
11-12	System for food surveillance and risk prevention (cont.)	1,2,3	Final exam	Lecture, discussion
13-15	Food safety operation in food supply chain	1,2,3	Final exam	Lecture, discussion
16-17	In-class presentation	1,2	Presentation	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Presentation	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Assignments (30%)			Report 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (40%)		Final exam 60%Pass	

Note: %Pass (assignments): % students have scores greater than 75 out of 100.

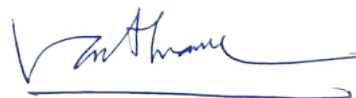
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD PACKAGING AND FOOD ADDITIVES

Course Code: BTFT306IU

1. General information

Course name	- <i>(in English)</i> Food Packaging and Food Additives - <i>(in Vietnamese)</i> Bao bì và Phụ gia Thực phẩm
Course designation	This subject will provide knowledge on following: - The introductory knowledge in function of food packaging, materials used for food packaging, production of food packaging, packaging systems and equipment and change in food quality during storage in packaging. - Classification of food additives allowed to use in food products. Application of food additives in food processing, food preservation and distribution of food products. Toxicity of the food additives. The food improvers are usually used in food processing.
Semester(s) in which the course is taught	5,6,7
Person responsible for the course	Prof. Pham, Van Hung
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ²³ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS

²³ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 45 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology	
Course objectives	After studying this course, the students will be able to: - Get the basic knowledge on food packaging as following contents: ○ Law of packaging and label record of food ○ Materials using for food packaging ○ Principal methods of packaging foods and criteria for selecting and testing packaging materials. ○ Recent advances in food packaging techniques and systems. - Get the basic knowledge on food additives and emulsions which are used in food processing to improve food quality.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understand function of food packaging, materials used for food packaging, production of food packaging, packaging systems and equipment and change in food quality during storage in packaging. CLO2. Understand chemistry and application of food additives in food processing, food preservation and distribution of food products. Toxicity of the food additives.
	Skill	CLO3. Have technique and skill in a development of new types of food products or packaging
	Attitude	CLO4. Have an ability to function effectively on a team.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to food packaging	1	I
	Metal packaging	1	T, U
	Glass packaging	1	T, U
	Plastic packaging	1	T, U
	Paper and paper-based packaging	1	T, U
	Packaging technology of foods: MAP and active packaging	1	T, U
	Food Biodeterioration and preservation	1	T, U
	Introduction and history of food additives	1	I
	Risks and benefits of food additives		
	Nutritional additives and Sweeteners	1	T, U
	Coloring agents	1	T, U
	Flavoring agents	1	T, U
	Antioxidants	1	T, U
	Preservatives	1	T, U
	Emulsifier	1	T, U
	Texturizing agents	1	T, U
Examination forms	Multiple-choice questions, written test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	Text book: G. L. Robertson (2016). Food Packaging: Principles and Practice. 3th edition. CRC Press, Taylor & Francis Group. References: - Smith, J.& Hong-shum, L. (2003). Food additives data book, Blackwell Publishing - International articles in the peer-review journals		

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CL O	1	2	3	4	5	6	7
1	3						
2	3						
3			3				
4					3		

3.Planned learning activities and teaching methods

Wee k	Topic	CLO	Assessment s	Learning activities
1	Introduction to food packaging	1		Lecture, Discussion,
2	Metal packaging	1,3,4	Assignment	Lecture, Discussion, Presentation
3	Glass packaging	1,3,4	Assignment	Lecture, Discussion, Presentation
4	Plastic packaging	1,3,4	Assignment	Lecture, Discussion, Presentation
5	Paper and paper-based packaging	1,3, 4	Assignment	Lecture, Discussion, Presentation
6	Packaging technology of foods: MAP and active packaging	1,3	Assignment	Lecture, Discussion, Presentation
7	Food Biodeterioration and preservation	1		Lecture, Discussion
8	Introduction and history of food additives Risks and benefits of food additives	1		Lecture, Discussion
9	Midterm			
10	Nutritional additives and Sweeteners	1,3,4	Assignment	Lecture, Discussion, Presentation
11	Coloring agents	1,3,4	Assignment	Lecture, Discussion, Presentation
12	Flavoring agents	1,3,4	Assignment	Lecture, Discussion, Presentation Group work
13	Antioxidants	1,3,4	Assignment	Lecture, Discussion, Presentation
14	Preservatives	1,3,4	Assignment	Lecture, Discussion, Presentation
15	Emulsifier	1,3,4	Assignment	Lecture, Discussion, Presentation
16	Texturizing agents	1,3,4	Assignment	Lecture, Discussion, Presentation
17	Final exam			

4.Assessment plan

Course assessment policy

Methods	Frequency	(%)
In-class discussion	1-3	10
Presentation	1-3	20
Mid-term exam	1	30

Final exam	1	40
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Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class discussion (10%)	60%Pass	60%Pass		60%Pass
Presentation (20%)	80%Pass		80%Pass	80%Pass
Midterm exam (30%)	80%Pass		80%Pass	
Final exam (40%)		80%Pass	80%Pass	

Note: %Pass (presentation): % students have scores greater than 80 out of 100.

%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Prof. Pham Van Hung
- Email: pvhung@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
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COURSE SYLLABUS

Course Name: FOOD UNIT OPERATIONS 2

Course Code: BTFT334IU

1. General information

Course name	- <i>(in English)</i> Food Unit Operations 2 - <i>(in Vietnamese)</i> Quá trình và thiết bị Thực phẩm 2
Course designation	This subject will provide knowledge on following: - Unit operations and unit processes involving momentum and mass transfer. - Fluids and Fluid Handling, Newtonian and Non-Newtonian Fluids, Laminar and Turbulent Flow - Fluid Mixing: Theory and Equipment, Homogenization and Emulsification - Mechanical separation processes: sedimentation, centrifugation, and filtration. - Principles and typical equipment for size adjustment: grinding; sieving, sorting, slicing, pulping, etc. - Operations for handling solid materials are discussed, including grinding, and mixing of solids. - Other topics in mass transfer: Diffusion and Diffusion Coefficient; Mass transfer equations; Steady State and Transient Mass Transfer. - Unit operations involving mass transfer: Hydro-distillation; Solvent extraction (leaching); Supercritical fluid extraction; Microfiltration and Ultrafiltration; Reverse Osmosis and Extrusion process.
Semester(s) in which the module is taught	5,6,7
Person responsible for the module	Dr. Dang, Quoc Tuan
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ²⁴ : 90 h	
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS	
Number of periods	Theory: 45 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology, BTFT203IU – Food Engineering Principles	
Course objectives	After studying this course, the students will be able to: - Understand principles of food engineering, chemistry and microbiology, which are applied in various industrial scale food processes such as mixing, grinding, filtration, centrifugation, membrane filtration, leaching and extrusion. - Understand and solve typical industrial problems using basic engineering principles, momentum, heat and mass transfer. - Understand the effects of these unit operation processes on the food materials and their quality aspects.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1: Apply knowledge in mathematics, physics and statistics in solving problems related to food processing.
	Skill	CLO2: Communicate efficiently to present technical problems.
	Attitude	CLO3: Collaborate well with other students in team work

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to Food Unit Operations. Engineering properties of food materials. Viscosity. Fluid classifications. Reynolds number. Flow patterns. Flow of Non-Newtonian fluids in pipe.	1	I
	Fluid mixing. Blending. Mixing of Non-Newtonian fluids; Homogenization; Emulsification.	1	T, U
	Filtration. Centrifugation. Sedimentation	2	T, U
	Size reduction: Grinding, Slicing, Shredding, Smashing.	1	I, T, U
	Sieving. Sorting; Particle Distribution; Solid mixing.	1	T, U
	Mass Transfer. Diffusion Theory. Diffusion coefficient.	1	I, T
	Mass transfer equations. Steady-state and transient mass transfer.	1	T, U
	Membrane separation: Microfiltration. Ultrafiltration. Reverse Osmosis	2	T, U
	Extraction-Leaching: principles and equipment.	2	T, U
	Extrusion: theory and equipment	1	T, U
	In-class presentation (current trends, new techniques in food engineering)	2	T, U
Examination forms	Multiple-choice questions, written test (problem solving)		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook and References ● R. Paul Singh, Dennis R. Heldman. 2009. <i>Introduction to food engineering</i>. Academic Press. 4th Edition. References: ● P.J. Fellow. 2016. <i>Food processing technology: Principles and practice</i>. CRC Press. Woodhead Publishing Limited. 3rd Edition. ● Earle, R. L. & Earle, M.D. <i>Unit operations in food processing</i>. Pergamon Press, Toronto, Canada. Web Edition. 2012.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO
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CLO	1	2	3	4	5	6	7
1	3						
2			3				
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to Food Unit Operations. Engineering properties of food materials. Viscosity. Fluid classifications. Reynolds number. Flow patterns. Flow of Non-Newtonian fluids in pipe.	1	Midterm exam	Lecture In-class exercise
2	Fluid mixing. Blending. Mixing of Non-Newtonian fluids. Homogenization. Emulsification.	1	Midterm exam	Lecture In-class exercise
3	Centrifugation. Sedimentation	1	Midterm exam	Lecture In-class exercise
4	Filtration	1	Midterm exam	Lecture In-class exercise
5	Size reduction: Grinding, Slicing, Shredding, Smashing.	1	Midterm exam	Lecture In-class exercise
6	Sieving. Sorting. Particle Distribution.	1		Lecture In-class exercise
7	Solid mixing	1	Midterm exam	Lecture In-class exercise
8	Mass Transfer. Diffusion Theory. Diffusion coefficient.	1	Midterm exam	Lecture In-class exercise
9-10	Midterm			
11	Mass transfer equations. Steady-state and transient mass transfer.	1	Final exam	Lecture In-class exercise
12	Membrane separation: Microfiltration. Ultrafiltration. Reverse Osmosis	1	Final exam	Lecture In-class exercise
13	Extraction. Principles and equipment.	1	Final exam	Lecture In-class exercise
14	Liquid-solid extraction (leaching)	1	Final exam	Lecture, discussion
15	Extrusion: theory and equipment	1	Final exam	Lecture In-class exercise
16-17	In-class presentation (typical food processes: equipment and design)	2,3	Presentation	Presentation, Q&A

Week	Topic	CLO	Assessments	Learning activities
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Presentation	1	20
Midterm exam	1	40
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class presentation (20%)		70%Pass	70%Pass
Midterm exam (40%)	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass		

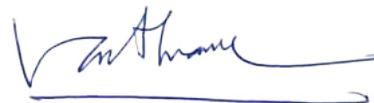
*Note: %Pass (Quiz, exam): % students have scores greater than 50 out of 100.
 %Pass (Presentation): % students have scores greater than 80 out of 100.*

5. Course coordinator/Lecturer:

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqtuan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
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COURSE SYLLABUS

Course Name: PRACTICE IN FOOD UNIT OPERATIONS 2

Course Code: BTFT354IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Unit Operations 2 - <i>(in Vietnamese)</i> Thực hành Quá trình và thiết bị Thực phẩm 2
Course designation	This subject will provide practice on following: - Fluid rheology determination. - Particle size measurement - Mass transfer understanding
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	5,6,7
Person responsible for the module	Dr. Nguyen Ngoc Thanh Tien
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab works
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lab works Private study including examination preparation, specified in hours ²⁵ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

²⁵ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT334IU – Food Unit Operations 2 - Previous course (Course code – Course name): None		
Course objectives	After studying this course, the students will be able to: - Basically understand some important unit operations used in the food processing industry - Gain examples of food processing operations, which requires the use of various unit operations, and - Understand basic engineering principles of unit operations and some mathematical solutions to their applications.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1: Apply knowledge in mathematics, physics and statistics in solving problems related to food unit operation.	
	Skill	CLO2: Perform lab-work by applying techniques in food engineering, analyzing and interpreting the obtained data for report.	
	Attitude	CLO3: Collaborate well with other students in lab-work and report writing to meet the established goals	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>		
	Weight: lab session (5 hours)		
	Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Rheology of liquid and semisolid foods	2	I, T, U
	Sieving and particle size distribution	2	I, T, U
Mass transfer coefficient	2	I, T, U	
Examination forms	Labwork report, presentation and final exam		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbooks: • R. Paul Singh, Dennis R. Heldman. 2009. Introduction to food engineering. Academic Press. 4th Edition. • P.J. Fellow. 2000. Food processing technology: Principles and practice. CRC Press. Woodhead Publishing Limited. 2nd Edition • Toledo, R.T. 1999. Fundamentals of Food Process Engineering, Aspen Publ. MD., USA. References: • Academic Press, Inc. San Diego, CA. <i>More solutions to sticky problems</i>. Brookfield Engineering Labs., Inc. • Barbosa-Cánovas, G.V.; Ma, L., and Barletta, B., 1997. <i>Engineering Laboratory Manual</i>. Technomic Pub. • Heldman, DR; and Paul Singh, R (1981) Food Process Engineering. Second edition, AVI Pub. • Sharma, SK, Mulvaney, SJ, and Rizzvi, SSH (2000) <i>Food Process Engineering: Theory and Laboratory Experiments</i>. John Wiley & Sons, Inc.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Rheology of liquid and semisolid foods	1, 2, 3	Lab report	Lecture, labwork
2	Sieving and particle size distribution	1, 2, 3	Lab report	Lecture, labwork
3	Mass transfer coefficient	1, 2, 3	Lab report	Lecture, labwork

4. Assessment plan

Course assessment policy

Methods	(%)
Lab participation and behavior	10
Lab report	90

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab participation and behavior	70%Pass		
Lab report	70%Pass	70%Pass	70%Pass

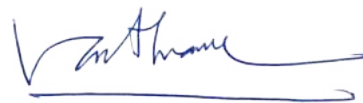
Note: %Pass: % students have scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: nnttien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD QUALITY ASSURANCE SYSTEMS

Course Code: BTFT305IU

1. General information

Course name	- <i>(in English)</i> Food Quality Assurance System - <i>(in Vietnamese)</i> Các hệ thống đảm bảo chất lượng thực phẩm
Course designation	This subject will provide knowledge on following: - Principles of quality control, quality assurance in the food industry including determination of key quality characteristics, sampling, measurement and test procedure, specification and standard. - Control of raw materials, process and finished products; evaluation of sensory properties and other factors are topics of discussion. - Essential quality management tools such as tools for understanding the process (flow chart, cause and effect diagram), tools for collecting, organizing, analyzing and understanding data (check sheet, pareto chart, histogram) and statistical process control (SPC) will be covered. - Quality assurance systems (GMP, SSOP, HACCP, ISO9000) and their certification for an organization as well as concepts of total quality management.
Semester(s) in which the module is taught	5,6,7
Person responsible for the module	Dr. Dang, Quoc Tuan
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ²⁶ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0

²⁶ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): MA040IU – Applied Statistics									
Course objectives	After successful completion of this course the student should be able to: – Understand the principles of management systems directed towards the control of food quality. Apply statistical principles in the food quality assurance system. – Apply the principles of quality assurance system to control and assure the quality and safe of food products – Be aware of the importance of the food assurance system to the food industry. – Identify the wide variety of parameters affecting food quality. – Develop procedures and approaches to identify food safety hazards in food processing. – Apply preventive measures and control methods to minimize microbiological hazards and maintain quality of foods. – Understand government regulations related to the quality assurance system required for the manufacture and sale of food products.									
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Apply knowledge in statistics and probability in presenting food quality and solving problems. CLO2. Understand the consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors in producing solutions for food quality</td></tr><tr><td>Skill</td><td>CLO3. Efficiently communicate well with lecturers during presentation</td></tr><tr><td>Attitude</td><td>CLO4. Understand the ethical and professional responsibilities related to food quality assurance</td></tr></table>		Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Apply knowledge in statistics and probability in presenting food quality and solving problems. CLO2. Understand the consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors in producing solutions for food quality	Skill	CLO3. Efficiently communicate well with lecturers during presentation	Attitude	CLO4. Understand the ethical and professional responsibilities related to food quality assurance
Competency level	Course learning outcome (CLO)									
Knowledge	CLO1. Apply knowledge in statistics and probability in presenting food quality and solving problems. CLO2. Understand the consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors in producing solutions for food quality									
Skill	CLO3. Efficiently communicate well with lecturers during presentation									
Attitude	CLO4. Understand the ethical and professional responsibilities related to food quality assurance									

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Principles and concepts of Quality and Food Quality Food quality specifications and standards	2	I, T
	Quality programs and Quality system for the food industry	1	I, T
	Statistical tools and techniques for Food Quality Control and Food Process Control	3	T, U
	Physico-chemical analysis of food	1	T, U
	Food color and texture	1	
	HACCP systems	2	T, U
	Prerequisite programs	1	T, U
	TQM, Kaizen, Six-Sigma, ISO 9000 Standards	2	T, U
	In-class presentation (Food laws, quality improvement, HACCP case study)	2	T, U
Examination forms	Multiple-choice questions, written test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: • Alli, I. 2004. Food Quality Assurance: Principles and Practices. Boca Raton: CRC Press. References: • Gould, W.A. & Gould, R.W. 2001. Total Quality Assurance for the Food Industries. 3 rd Ed. CTI Publications. • Hubbard, M. R. 2003. Statistical Quality Control for the Food Industry, 3 rd Ed. New York: Kluwer Academic/Plenum Publishers. • Vasconcellos, J.A. 2004. Quality Assurance for the Food Industry: A Practical Approach. CRC Press.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-5) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4				2			

3. Planned learning activities and teaching methods

Wee k	Topic	CLO	Assessment s	Learning activities
1-2	Principles and concepts of Quality and Food Quality Food quality specifications and standards	2	Midterm Exam	Lecture, discussion
3	Quality programs and Quality system for the food industry	2	Midterm Exam	Lecture, discussion
4-6	Statistical tools and techniques for Food Quality Control and Food Process Control	1	Midterm Exam	Lecture, discussion
7	Physico-chemical analysis of food	2	Final Exam	Lecture, discussion
8	Food color and texture	2	Final Exam	Lecture, discussion
9-10	MIDTERM EXAM			
11-12	HACCP systems	1,2	Final Exam	Lecture, discussion
13	Prerequisite programs	2	Final Exam	Lecture, discussion
14-15	TQM, Kaizen, Six-Sigma, ISO 9000 Standards	2,3	Final Exam	Lecture, discussion
16-17	Seminar	3,4	Presentation	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Presentation	1	20
Mid-term exam	1	40
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar, Presentation (25%)			70%Pass	70%Pass
Midterm exam (35%)	Midterm exam 60%Pass	Midterm exam 60%Pass		
Final exam (40%)	Final exam 60%Pass	Final exam 60%Pass		

Note: %Pass (Quiz, exam): % students have scores greater than 50 out of 100.

%Pass (Presentation): % students have scores greater than 70 out of 100.

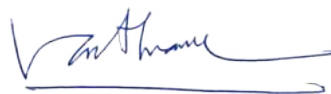
5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan

- Email: dqtuan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'N. Thuận', with a long horizontal stroke extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD LAWS AND FOOD STANDARDS

Course Code: BTFT312IU

1. General information

Course name	- <i>(in English)</i> Food Laws and Food Standards - <i>(in Vietnamese)</i> Luật thực phẩm và tiêu chuẩn thực phẩm
Course designation	This subject will provide knowledge on following: - Introduction to Food Law and Food Standard including challenges for food control authorities, important food issues, elements of a national food control system, strengthening national food control systems, and specific issues of developing countries. - Vietnam Food Law: Law No. 55/2010/QH12 on Food Safety. - International Food Laws and Regulations: International Food Regulation and International Food Regulatory Agencies. Food Laws and Regulations in some other countries. - Regulations in relation to food safety and quality standards in specific sectors: GMO foods, organic foods, food additives, functional foods, dairy products, fruit and vegetable products, meat and egg products, aquatic products, food retailing and restaurants, food labeling and advertising. - Regulation of food enterprises in the digital environment
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	6, 7
Person responsible for the module	MSc. Nguyen, Thi Huong Giang
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture. Private study including examination preparation, specified in hours ²⁷ : 60 h	
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS	
Number of periods	Theory: 30 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None	
Course objectives	After studying this course, the students will be able to: - Become familiar with statutes and regulations that contribute to a safe, nutritious, and wholesome food supply. - Be able to identify major food laws, their authoritative departments and enforcement agencies. - Understand more about the law and legal system in Vietnam and several countries /regions such as the US, EU, Japan, China, Thailand... - Understand the differences and similarities between international and domestic food law and regulations. - Understand critical domestic and international regulatory issues related to food standards. - Be able to recognize current topics of importance to the food industry that have the potential to generate new or refine existing regulations; select controversial legislative issues. - Interpret implications of local food laws and food standards on the manufacture and sale of food.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understand food laws and food standards in Vietnam and some other countries and related professional responsibilities, regulation of food enterprises
	Skill	CLO2. Interpreting implications of food laws and regulation, recognizing major food laws, and current issues.
	Attitude	CLO3. Be able to efficiently communicate and teamwork through group presentations.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>																		
	Weight: lecture session (3 hours)																		
	Teaching levels: I (Introduce); T (teach); U (Utilize)																		
	<table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to Food Law and Food Standards</td><td>3</td><td>T</td></tr><tr><td>Vietnam Food Law</td><td>2</td><td>T</td></tr><tr><td>International Food Laws and Regulations</td><td>2</td><td>T, U</td></tr><tr><td>Regulation of food enterprises in the digital environment</td><td>1</td><td>T, U</td></tr><tr><td>Regulations in relations to food standards in specific sectors</td><td>2</td><td>T, U</td></tr></table>	Topic	Weight	Level	Introduction to Food Law and Food Standards	3	T	Vietnam Food Law	2	T	International Food Laws and Regulations	2	T, U	Regulation of food enterprises in the digital environment	1	T, U	Regulations in relations to food standards in specific sectors	2	T, U
	Topic	Weight	Level																
	Introduction to Food Law and Food Standards	3	T																
	Vietnam Food Law	2	T																
International Food Laws and Regulations	2	T, U																	
Regulation of food enterprises in the digital environment	1	T, U																	
Regulations in relations to food standards in specific sectors	2	T, U																	
Examination forms	Multiple choices or written short-answer tests																		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.																		
Reading list	Textbook: ● Vietnam Food Law: Law No. 55/2010/QH12 on Food Safety. 2012. ● Marc C. Sanchez, 2018. Food Law and Regulation for Non-Lawyers, A US Perspective. Springer. References: ● Fortin, N.D. 2009. Food Regulation – Law, Science, Policy and Practice. John Wiley & Sons, Inc., Publication. 2009. ● Curtis PA, 2005. Guide to Food Laws and Regulations. Blackwell Publishing. ● Vietnam Food Safety Authority (VFA) website: https://vfa.gov.vn ● Codex Alimentarius website: http://www.codexalimentarius.net/ ● FAO website: Food laws & regulations Food safety and quality Food and Agriculture Organization of the United Nations (fao.org) ● USDA website: http://www.fsis.usda.gov/ ● FDA website: http://www.fda.gov ● EU Food Law: http://www.europa.eu.int/ ● Lectures and other documents will be on the Blackboard of the International University.																		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1		2		1			
2		3		2			
3			2		3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1-3	Introduction to Food Law and Food Standards	1, 2	Quiz, Midterm exam	Lecture, Discussion
4-5	Vietnam Food Law	1, 2	Quiz, Midterm exam	Lecture, Discussion
6-7	International Food Laws and Regulations	1, 2, 3	Quiz, Presentation Final exam	Lecture, Q&A Presentation,
8	Regulation of food enterprises in the digital environment	1, 2, 3	Quiz, Presentation Final exam	Lecture, Q&A Presentation,
9-10	Midterm			
11-12	Food laws and food standards in specific sectors	1, 2	Quiz, Final exam	Lecture, Q&A

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Quiz	4	20
Presentation	1	10
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Quiz (20%)	Quiz 60%Pass	Quiz 60%Pass	
Presentation (10%)			Presentation 60%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass	

Final exam (40%)		Final exam 60%Pass	
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*Note: %Pass (assignments): % students have scores greater than 65 out of 100.
 %Pass (exam): % students have scores greater than 60 out of 100.*

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Minh Xuan Hong
- Email: nmXHong@hcmuaf.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Food Microbiology Analysis

Course Code: BTFT337IU

1. General information

Course name	- <i>(in English)</i> Food Microbiology Analysis - <i>(in Vietnamese)</i> Phân tích vi sinh Thực phẩm
Course designation	This subject will provide knowledge on following: - Basic knowledge on the sources of microorganisms in food. - Factors affecting the growth of microorganisms in food; effects of microorganisms on certain food and food products; - Basic principles in testing industrial microorganisms, advantages and disadvantages of using traditional and rapid methods for microbial examination in the lab and in the food industry.
Semester(s) in which the module is taught	6, 7, 8
Person responsible for the module	Assoc. Prof. Nguyen Vu Hong Ha
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (lecture, seminar.): 30 hours Private study including self-study, examination preparation, specified in hours ²⁸ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT234IU – Food Microbiology

²⁸ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	The course is intended to demonstrate: - Knowledge to identify microbial sources of food products and factors related to microbial growth. - Microbiological concepts through laboratory procedures focus on the practical application of microbiological principles to food and food products. - Knowledge for identification of the microbial groups associated with the food spoilage, food-borne disease. - Basic steps and technical requirements in industrial microbiological testing.		
Course learning outcomes	The students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Recognize and explain features involving with food changes due to impact of microorganisms	
	Skill	CLO2. Apply appropriate methods for detection and controlling foodborne, food spoilage and useful microorganisms in the food industry.	
	Attitude	CLO3. Collaborate well with other students in seminar	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Microbial sources of food products	3	I, T, U
	Factors affecting microbial growth.	2	T, U
	Testing methods for food microorganisms	1	T, U
	Basic principles in microbiological testing in the food industry	3	T, U
	Group presentation	1	T, U
Examination forms	Multiple choices and written tests		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: ● Shen. C & Zhang. Y. (2023). Food microbiology laboratory for the food science student: a practical approach (2nd ed.). Switzerland: Springer Nature. References: ● Robert, D., & Greenwood, M. (2003). Practical Food Microbiology (3rd ed.) UK: Blackwell Publishing. ● Ray, B and Bhunia. A. (2025). Fundamental Food Microbiology (6th ed.). New York: CRC Press. ● Ahmed E.Y, Joy G.W, Jennifer J. P. (2022). Analytical Food Microbiology: A Laboratory Manual. (2nd ed.). Willey.
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2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	2						
2	3						
3					3		

3.Planned learning activities and teaching methods

Wee k	Topic	CLO	Assessments	Learning activities
1-3	Microbial sources in food products	1	Midterm exam	Lecture, discussion
4-5	Factors affecting microbial growth	1,2,3	Midterm exam	Lecture, discussion,
6	Testing methods of food microorganisms	1,2	Final exam	Lecture, discussion
7-8	Basic principles in microbiological testing in the food industry	1,2	Final exam	Lecture, discussion
9-10	Midterm			
11	Basic principles in microbiological testing in the food industry	1,2	Final exam	Lecture, discussion
12	Seminar		Presentation	Presentation, Q&A
18-20	Reserve week and Final exam			

4.Assessment plan

Course assessment policy

Methods	Frequency	(%)
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Group presentation	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Group presentation (30%)			Report 70%Pass
Midterm exam (30%)	Midterm exam 70%Pass	Midterm exam 70%Pass	
Final exam (40%)		Final exam 70%Pass	

Note: %Pass (Seminar): % students have scores greater than 80 out of 100.

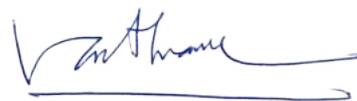
%Pass (exam): % students have scores greater than 50 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
School of Biotechnology

COURSE SYLLABUS

Course Name: PRACTICE IN FOOD MICROBIOLOGY ANALYSIS

Course Code: BTFT358IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Microbiology Analysis - <i>(in Vietnamese)</i> Thực hành Phân tích vi sinh thực phẩm
Course designation	This subject will provide knowledge and skills on following: - Source of food microorganism and factors affecting the food microorganism development, effects of microorganisms on certain food and food products - Advantages and disadvantages of using traditional and rapid methods that have been used for the microbiology examination in the lab and in the food industry, basic principles in testing industrial microorganism - Critical laboratory techniques used in food microbiology analysis including development of proficiency in using selected microbiological techniques currently employed in regulatory, quality control and research laboratories, performance of specific microbiological analyses of foods to assess numbers and kinds of spoilage organisms or food-borne pathogens - Ability to recognize and explain features involving food changes due to impact of microorganisms.
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	6, 7, 8
Person responsible for the module	MSc. Tran, Thị Yen Nhi
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab works

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lab works Private study including examination preparation, specified in hours : 30 h		
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS		
Number of periods	Theory: 0 Practice: 15		
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT337IU – Food Microbiology Analysis - Previous course (Course code – Course name): BTFT254IU – Practice in Food Microbiology		
Course objectives	After studying this course, the students will be able to: - Demonstrate microbiological concepts through laboratory procedures focusing on practical application of microbiological principles to food products - Design media and methods for identification of the microbiology groups associated with the food spoilage, food-borne disease - Understand and evaluate the methods that have been used for the microbiology examination in the lab and in the food industry		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Get knowledge on how to determine different types of food-borne and spoilage bacteria in food	
	Skill	CLO2. Obtain analyzing techniques and interpreting the results to evaluate the causation and prevention	
	Attitude	CLO3. Work in group	
Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight (lab)	Level
	Determination of <i>Salmonella</i> spp. In food products	2	T, U
	Determination of coagulase-positive <i>Staphylococci</i>	1	T, U
	Determination of <i>Clostridium perfringens</i>	1	T, U
	Determination of <i>Vibrio</i> spp. in food	2	T, U
Examination forms	Labwork report and final exam		

Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	<i>Textbooks:</i> - Robert, D., & Greenwood, M. 2003. Practical Food Microbiology (3rd ed.) UK: Blackwell Publishing. - Ray, D. 2000. Fundamental Food Microbiology (2nd ed.). New York: CRC Press. - Adams, M.R., & Ross., M.O. 2000. Food Microbiology (2nd ed.). Cambridge: Proposals Royal Society Chemistry. - Matthews, K. R., Kniel, K. E., & Montville, T. J. (2017). Food microbiology: an introduction. John Wiley & Sons. <i>References:</i> - ISO 7218:2007 Microbiology of food and animal feeding stuff — General requirements and guidance for microbiological examinations. D. Roberts & M. Greenwood. 2003. Practical Food Microbiology. Blackwell Publishing - Dr. Ciira Kiiyukia. 2003. Laboratory manual of Food Microbiology for Ethiopian Health and Nutrition Research Institute. - Bell C. & Kyriakides. A. 2002. Salmonella – A Practical approach to the organism and its control in food. - BS EN ISO 6888-1:1999. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) - Part 1: Technique using Baird-Parker agar medium. British Standard Institution. - BS EN ISO 7937:2004. Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of <i>Clostridium perfringens</i> – Colony – count technique. British Standards Institution.

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

CLO	PLO						
	1	2	3	4	5	6	7
1	3						
2						3	
3					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
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1	Determination of <i>Salmonella</i> spp. In food products	1, 2, 3	Lab report, presentation	Lecture, labwork
2	Determination of coagulase-positive <i>Staphylococci</i>	1, 2, 3	Lab report, presentation	Lecture, labwork
3	Determination of <i>Clostridium perfringens</i>	1, 2, 3	Lab report, presentation	Lecture, labwork
4	Determination of <i>Vibrio</i> spp. in food	1, 2, 3	Lab report, presentation	Lecture, labwork
	Final exam			

4. Assessment plan

Course assessment policy

Methods	(%)
Lab report	70
Final exam (oral)	30

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab report (70%)	70%Pass	70%Pass	70%Pass
Final exam (30%)	70%Pass	70%Pass	70%Pass

Note: %Pass (exam): % students have scores greater than 75 out of 100.

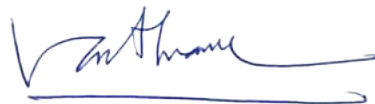
%Pass (lab report): % students have scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Tran Thi Yen Nhi
- Email: ttynhi@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD SENSORY ANALYSIS

Course Code: BTFT437IU

1. General information

Course name	- <i>(in English)</i> Food Sensory Analysis - <i>(in Vietnamese)</i> Phân tích cảm quan Thực phẩm
Course designation	This subject will provide knowledge on following: - Basic concepts of human senses, application of sensory evaluation, principle of sensory judgment. - principle and general procedure to conduct sensory evaluation test including discrimination test, descriptive test and consumer research methods
Semester(s) in which the module is taught	7, 8
Person responsible for the module	Assoc. Prof. Hoang, Kim Anh
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ²⁹ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): MA040IU – Applied Statistics

²⁹

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	After studying this course, the students will be able to: - Understand the basic techniques of sensory testing, from simple discrimination tests to home use placements for consumers. - Understand fundamental theories, psychological and statistical, that form the basis and rationale for sensory test design. - Use statistics in sensory evaluation both as stand-alone material presented in appendices and as integrated applications in the context of appropriate sensory methods.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand the fundamental theories, requirements and procedures for conducting food sensory evaluation. CLO2. Understand the sensory test types and application of these tests.	
	Skill	CLO3. Apply statistical principles to food sensory evaluation.	
	Attitude	CLO4. Collaborate well with other students in groups	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction and Overview	1	I
	Physiological and Psychological Foundations of Sensory Function	1	T
	Principles of Good Practice	1	T
	Discrimination Testing	2	T
	Descriptive Analysis	2	T
	Consumer Research Methods. Sensory Evaluation in Quality Control	1	T
	Data Relationships and Multivariate Applications	1	T, U
	Seminar presentation	1	U
	Examination forms	Written tests	
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: ● Lawless H. T. & Heymann, H. 2010. Sensory Evaluation of Food: Principles and Practices, Springer, second edition. References: ● Richard L. Mason and S. M. Nottingham, Sensory evaluation manual, The University of Queensland, 2002 ● Gacula, M.C. 1997. Descriptive Sensory Analysis in Practice. Food & Nutrition Press, Inc. CT ● O'Mahony M. 1985. Sensory Evaluation of Food: Statistical methods and procedures, New York, Marcel Dekker, Inc.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	2						
2	2						
3	3						
4					3		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction and Overview	1	Midterm exam	Lecture, discussion
2	Physiological and Psychological Foundations of Sensory Function	1,2,3	Midterm exam	Lecture, discussion
3	Principles of Good Practice	1,2,3	Midterm exam	Lecture, discussion
4-5	Discrimination Testing	1,2,3	Midterm exam	Lecture, discussion
6-7	Descriptive Analysis	1,2,3	Midterm exam	Lecture, discussion
8	Consumer Research Methods. Sensory Evaluation in Quality Control	1,2,3	Midterm exam	Lecture, discussion
9-10	Midterm			
11	Data Relationships and Multivariate Applications	1,2,3	Final exam	Lecture, discussion
12	Seminar presentation	1,2,4	presentation	Presentation, Q&A
19-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar	70% pass	70% pass		70% pass
Midterm exam (40%)	Midterm exam 60%Pass	Midterm exam 60%Pass	Midterm exam 60%Pass	
Final exam (60%)	Final exam 60%Pass	Final exam 60%Pass	Final exam 60%Pass	

Note: %Pass (seminar): % students have scores greater than 80 out of 100.

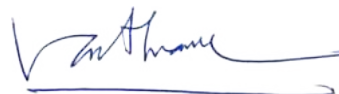
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Hoang Kim Anh
- Email: kimanhh@gmail.com

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Practice in Food Sensory Analysis

Course Code: BTFT457IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Sensory Analysis - <i>(in Vietnamese)</i> Thực hành Phân tích cảm quan Thực phẩm
Course designation	<i>This subject will provide knowledge and skills on following:</i> - <i>Basic techniques of sensory testing, nerves function in food sensory testing, sensory design, the practical aspects of conducting sensory test using TCVN</i>
Course type	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the module is taught	7,8
Person responsible for the module	MSc. Nguyen, Thi Huong Giang
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lab works Private study including examination preparation, specified in hours ³⁰ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

³⁰

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT437IU – Food Sensory Analysis - Previous course (Course code – Course name): MA041IU – Applied Statistics Lab		
Course objectives	After studying this course, the students will be able to: - Understand the basic techniques of sensory testing, from simple discrimination tests to home use placements for consumers - Understand fundamental theories, psychological and statistical, that form the basis and rationale for sensory test design - Use statistics in sensory evaluation both as stand-alone material presented in appendices and as integrated applications in the context of appropriate sensory methods		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand sensory test types which is best for meeting project objectives	
	Skill	CLO2. Lead and participate in groups in developing hypotheses, planning and conducting experimentation to test that hypothesis	
	Attitude	CLO3. Strengthening communication skills and teamwork	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (5 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Basic principles of sensory experimental design and sample preparation	1	I,T,U
	- Panelist selection & screening	2	I,T,U
	Sensory analysis by using difference tests	1	I,T,U
	Sensory analysis by using ranking test and rating test	1	I,T,U
	- Oral presentation	1	U
Examination forms	Presentation		
Study and examination requirements	Attendance: A minimum attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: ● Meilgaard, M., Civille, G. V., & Carr, B. T. (2006). <i>Sensory evaluation techniques</i>. Boca Raton, FL: CRC Press References: ● Lawless, H. T., & Hildegarde, (2016). <i>Sensory Evaluation Of Food: principles and practices</i> (2nd ed.). Springer-Verlag New York. References: ● ISO 4120 - 2004. Sensory analysis — Methodology — Triangle test. ● ISO 5495 - 2005. Sensory analysis — Methodology — Paired comparison test. - ISO 10399 - 2004. Sensory analysis — Methodology — Duo-Trio test.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1			3				
2						4	2
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Basic principles of sensory experimental design and sample preparation	1,2,3	Presentation	Lecture, labwork
2	- Panelist selection & screening	1,2,3	Presentation	Lecture, labwork
3	Panelist selection & screening (cont.)	1,2,3	Presentation	Lecture, labwork
4	Sensory analysis by using difference tests	1,2,3	Presentation	Lecture, labwork
5	- Sensory analysis by using ranking test and rating test	1,2,3	Presentation	Lecture, labwork
6	Presentation	3		Oral presentation

4. Assessment plan

Course assessment policy

Methods	(%)
Lab behavior	10
Oral presentation	90

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab behavior (10%)			100%Pass

Presentation (90%)	70%Pass	70%Pass	70%Pass
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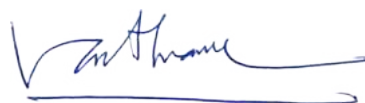
Note: %Pass: % students have scores greater than 80 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
School of Biotechnology

COURSE SYLLABUS

Course Name: FOOD PRODUCT DEVELOPMENT AND MARKETING

Course Code: BTFT438IU

1. General information

Course name	- <i>(in English)</i> Food Product Development and Marketing - <i>(in Vietnamese)</i> Phát triển sản phẩm và tiếp thị
Course designation	This subject will provide knowledge on the principles and steps in the process of developing a new product, create formulas, production testing, quality control, research, commercial feasibility.
Semester(s) in which the module is taught	7,8
Person responsible for the module	Assoc. Prof. Le, Ngoc Lieu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar, case study
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 15 h for lecture, 15 h for in-class group assignments Private study including examination preparation, specified in hours ³¹ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT437IU – Food Sensory Analysis, BTFT312IU – Food Laws and Standards

³¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	After studying this course, the students will be able to: – Understand and have experience in the development of food products. – Get knowledge of food ingredients. – Create templates for a new product (prototype). – Identify challenges in developing products and schemes to overcome. – Understand ethical and professional responsibilities in food product development. – Understand the techniques and knowledge related to the consumer. – Develop logical thinking related to food products.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand the development process of various food products in the global, economic, environmental, and societal context CLO2. Understand the ethical and professional responsibilities in food product development	
	Skill	CLO3. Formulate and solve engineering problems through new product development CLO4. Design the product concept, process, testing and marketing	
	Attitude	CLO5. Communicate well among teammates to create an inclusive environment	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (~ 4 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to food product development	1	T, U
	Drivers of food product development	1	T, U
	Idea generation and screening	1	T, U
	Product design specification	1	T, U
	Product design and process development	1	T, U
	Product commercialization	1	T, U
	Innovative food ingredients and food additives	1	T, U
	Seminar	1	T, U
Examination forms	Multiple-choice questions, written test		

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: • Earle, M., Earle, R., and Anderson, A. 2001. Food Product Development. CRC Press. References: • Gordon W. Fuller, New Food Product Development - From Concept to Marketplace, Third Edition-CRC Press (2011). • Grap, E., Saguy, and Graf, E. 1991. Food Product Development: From Concept to the Marketplace. Kluwer Academic Publishers

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-5) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CL O	1	2	3	4	5	6	7
1		3					1
2				4			
3	4						
4		5					
5					4		

3.Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to food product development	1,2	Group assignment	Lecture, discussion
2	Drivers of food product development	1,2	Group assignment	Lecture, discussion
3	Idea generation and screening	1,2	Group assignment	Lecture, discussion
4	Product design specification	3,4	Group assignment	Lecture, discussion
5	Product design and process development	3,4	Group assignment	Lecture, discussion
6	Product commercialization	3,4	Group assignment	Lecture, discussion
7	Innovative food ingredients and food additives	1,2	Group assignment	Lecture, discussion
8	Presentation on food product development and marketing of food companies in Vietnam	1, 5	Presentation, Q&A	Presentation, Q&A
	Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignment/Seminar	13/1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Seminar presentation (10%)					Presentation 80%Pass
Assignment (20%)	Assignment 80%Pass	Assignment 80%Pass	Assignment 80%Pass	Assignment 80%Pass	
Midterm exam (30%)			Midterm exam 80%Pass	Midterm exam 80%Pass	
Final exam (40%)	Final exam 60%Pass	Final exam 60%Pass			

Note: %Pass (Assignment): % students have scores greater than 80 out of 100.

%Pass (Midterm exam): % students have scores greater than 70 out of 100.

%Pass (Final exam): % students have scores greater than 50 out of 100.

%Pass (presentation): % students have scores greater than 80 out of 100.

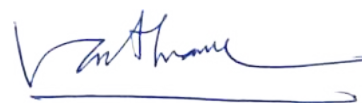
5. **Date revised:** April, 2024

6. **Course coordinator/Lecturer**

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Lê Ngọc Liễu
- Email: lnlieu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

Course Name: Practice in Food product development and marketing

Course Code: BTFT458IU

1. General information

Course name	- <i>(in English)</i> Practice in Food Product Development and Marketing - <i>(in Vietnamese)</i> Thực hành phát triển sản phẩm và tiếp thị
Course designation	The principles and steps in the process of developing a new product, create formulas, production testing, quality control, research, commercial feasibility
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the course is taught	7, 8
Person responsible for the course	<i>MSc. Nguyen Thi Huong Giang</i>
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Labwork time: 5 weeks (half day -5 periods per week) Market survey: 1 week Private study including examination preparation, specified in hours ³² : 30 h

³²

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS																				
Number of periods	Theory: 0 Practice: 15																				
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT438IU – Food Product Development and Marketing - Previous course (Course code – Course name): BTFT457IU – Practice in Food Sensory Analysis																				
Course objectives	– Understand and have experience in the development of food products. – Have knowledge of food ingredients. – Create templates for a new product (prototype). – Identify challenges in developing products and schemes to overcome. – Understand the techniques and knowledge related to the consumer. – Develop logical thinking related to food products.																				
Course learning outcomes	Upon the successful completion of this course students will be able to:																				
	Competency level	Course learning outcome (CLO)																			
	Knowledge	CLO1. Demonstrate problem solving applying principles of engineering and science, and using emerging tools CLO2. Demonstrate the understanding of specific needs of global, cultural, social, environmental and economic factors in new food product development in the context of the digital environment																			
	Skill	CLO3. Produce reports, presentations, and digital contents of technical breadth and depth for the product CLO4. Develop new knowledge and skills in food product development through self-learning																			
	Attitude	CLO5. Demonstrate ethical and professional responsibilities in designing new food products																			
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>- Work in group: brainstorming ideas</td><td>1</td><td>I,T,U</td></tr><tr><td>- Market survey (digital platform)</td><td>1</td><td>U</td></tr><tr><td>- Presentation of proposal for the development of a new food product (Evaluated by IU instructors and industry partners)</td><td>1</td><td>U</td></tr><tr><td>- Product design and process development</td><td>1</td><td>U</td></tr><tr><td>- Cross-team to improve the other group's product in terms of cost saving (Group 1 does</td><td>1</td><td>U</td></tr></table>			Topic	Weight	Level	- Work in group: brainstorming ideas	1	I,T,U	- Market survey (digital platform)	1	U	- Presentation of proposal for the development of a new food product (Evaluated by IU instructors and industry partners)	1	U	- Product design and process development	1	U	- Cross-team to improve the other group's product in terms of cost saving (Group 1 does	1	U
Topic	Weight	Level																			
- Work in group: brainstorming ideas	1	I,T,U																			
- Market survey (digital platform)	1	U																			
- Presentation of proposal for the development of a new food product (Evaluated by IU instructors and industry partners)	1	U																			
- Product design and process development	1	U																			
- Cross-team to improve the other group's product in terms of cost saving (Group 1 does	1	U																			

	cost savings of group 2's product and vice versa). (Evaluated by IU instructors and industry partners)		
	- Product presentation and digital content (New product and improved product) (Evaluated by IU instructors and industry partners)	1	U
Examination forms	Presentation		
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	References 1. Grap, E., Saguy, and Graf, E. 1991. Food Product Development: From Concept to the Marketplace. Kluwer Academic Publishers 2. Gilbert, K. & Prusa, K. (2021). Food product development. Ames, IA: Iowa State University Digital Press. DOI: https://doi.org/10.31274/isudp.2021.66		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-5) and Program Learning Outcomes (1-7) is shown in the following table

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		5					
3			3				
4							2
5				4			

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Work in group: brainstorming ideas	1,2,3,4,5	Presentation	Lecture, labwork
2	Market survey (digital platform)	1,2,3,4,5	Presentation	Survey
3	Presentation of proposal for the development of a new food product (Evaluated by IU instructors and industry partners)	1,2,3,4,5	Presentation	Presentation
4	Product design and process development	1,2,3,4,5	Presentation	Labwork
	Cross-team to improve the other group's product in term of cost saving (Group 1 does	1,2,3,4,5		

5	cost savings of group 2's product and vice versa). (Evaluated by IU instructors and industry partners)		Presentation	Labwork
6	Product presentation and digital content (New product and improved product) (Evaluated by IU instructors and industry partners)	1,2,3,4,5		Presentation

4. Assessment plan

Course assessment policy

Methods	(%)
Lab behavior	10
Presentation	60
Digital content (Short clip, infographic, etc.)	30
Total	100

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Lab behavior (10%)					80%Pass
Presentation (60%)	70%Pass	70%Pass	70%Pass	70%Pass	
Digital content (30%)	70%Pass	70%Pass	70%Pass	70%Pass	

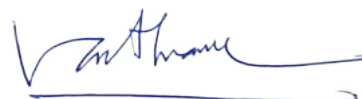
Note: %Pass: Target that % of students having scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

**Course Name: SCIENTIFIC WRITING AND DESIGN OF
EXPERIMENTS FOR FOOD SCIENCE**

Course Code: **BTFT316IU**

1. General information

Course name	- <i>(in English)</i> Scientific Writing and Design of Experiment for Food Science - <i>(in Vietnamese)</i> Viết báo cáo khoa học và thiết kế thí nghiệm trong khoa học thực phẩm
Course designation	This subject will provide knowledge on following: - Introduction to scientific research, hypothesis testing and experimental design in food science and technology. - Structure of a research paper and how to complete a research writing. - Course projects that are used to evaluate how theory is applied in practice as well as to develop inter-personal skills.
Semester(s) in which the module is taught	6,7,8
Person responsible for the module	Assoc. Prof. Le, Ngoc Lieu and Prof. Pham, Van Hung
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, case studies
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture, 15 h for case studies Private study including examination preparation, specified in hours ³³ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): MA040IU – Applied Statistics		
Course objectives	After studying this course, the students will be able to: - Understand scientific research process, research requirements and principles of experimental design in food science and technology. - Apply common designs in research. - Obtain practical experience in research implementation, data collection and analysis, oral presentation. - Complete scientific writing. - Enhance teamwork and problem-solving skills.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Solve engineering problems by applying principles of engineering, science and mathematics CLO2. Apply engineering design to produce solutions that meet specified needs in the food area with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	
	Skill	CLO3. Analyze and interpret data, and use engineering judgment to draw conclusions CLO4. Write a scientific report.	
	Attitude	CLO5. Self-acquire new knowledge and skills to generate new ideas for food solutions CLO6. Practice ethical and professional responsibilities and develop critical thinking	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction and Basics	2	T, U
	Comparative experiments	1	T, U
	Screening experiments	1	T, U
	Optimization	1	T, U
	Modeling	1	T, U
	Design of experimental flowchart	1	T, U
	Tutorials	1	T, U
	Introduction to Scientific Writing & Editing	1	I, T
	Guidelines for writing a scientific paper	5	T, U
	Guidelines for oral presentations & poster presentations	1	T, U
	Examination forms	Written test (experimental design, data analysis, discussion)	

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: • Gary W. Oehlert, A First Course in Design and Analysis of Experiments, University of Minnesota, 2010 References • Ruxton G.D. & Colegrave N. (2016) Experimental Design for the Life Sciences. Fourth Edition. Oxford University Press, UK. • Quinn G.P. & Keough M.J. (2004) Experimental Design and Data Analysis for Biologist. Cambridge University Press, UK. • Fowler, J., Cohen, L. & Jarvis, P. (2002) Practical statistics for field biology. 2nd edition. Wiley, England. 259 p. • Day, R.A. (1995) How to write and publish a scientific paper. 4th edition, Cambridge University Press, USA.

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-5) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	3						
2		4					
3						4	
4			3				
5							2
6				3			

3.Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1-2	Introduction and Basics	1,2,3	Case studies	Lecture, discussion
3	Comparative experiments	1,2,3	Case studies	Lecture, discussion
4	Screening experiments	1,2,3	Case studies	Lecture, discussion
5	Optimization	1,2,3	Case studies	Lecture, discussion
6	Modeling	1,2,3	Case studies	Lecture, discussion
7	Design of experimental flowchart	1,2,3	Group assignment	Lecture, discussion

8	Tutorials	5,6	Group assignment	Lecture, discussion
9-10	Midterm			
11	Introduction to Scientific Writing & Editing	4	Case studies	Lecture, discussion
12	Guidelines for writing a scientific paper I (Introduction & References)	4	Case studies	Lecture, discussion
13	Guidelines for writing a scientific paper II (Materials and Methods)	4	Case studies	Lecture, discussion
14	Guidelines for writing a scientific paper III (Results and Discussion)	4	Case studies	Lecture, discussion
15	Guidelines for writing a scientific paper IV (Abstract & Title)	4	Case studies	Lecture, discussion
16	Guidelines for writing a scientific paper V - Review	4	Case studies	Lecture, discussion
17	Guidelines for oral presentations & poster presentations	4,5,6	Case studies Group assignment	Lecture, discussion
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignment	2	30
Mid-term exam	1	35
Final exam	1	35

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Assignment 1 (15%)	Report 70%Pass	Report 70%Pass			Report 70%Pass	Report 70%Pass
Assignment 2 (15%)		Report (writing) 70%Pass		Group Presentation 90%Pass		Report (writing) 70%Pass
Midterm exam (35%)	Midterm exam 70%Pass		Midterm exam 70%Pass			
Final exam (35%)		Final exam 70%Pass		Final exam 70%Pass		

*Note: %Pass (exam): % students have scores greater than 50 out of 100.
 %Pass (report): % students have scores greater than 80 out of 100.*

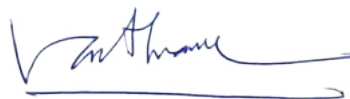
5. Date revised: April, 2024

6. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Ngoc Lieu; Prof. Pham Van Hung
- Email: lnlieu@hcmiu.edu.vn; pvhung@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: POSTHARVEST TECHNOLOGY

Course Code: BTFT411IU

1. General information

Course name	- <i>(in English)</i> Postharvest Technology - <i>(in Vietnamese)</i> Công nghệ sau thu hoạch
Course designation	This subject will provide knowledge on following: - General principles of postharvest changes in animal and plant materials. - Postharvest handlings and preservation methods of raw materials.
Semester(s) in which the module is taught	5, 6, 7
Person responsible for the module	Assoc.Prof. Nguyen, Vu Hong Ha
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 h for lecture Private study including examination preparation, specified in hours ³⁴ : 90 h
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT201IU – Introduction to Food Science and Technology, BTFT156IU – Food Chemistry and Biochemistry

Course objectives	After studying this course, the students will be able to: - Understand fundamental concepts and principles of postharvest technology. - Recognize and control factors impacting postharvest losses of raw materials. - Evaluate postharvest handlings and preservation methods for prolonging shelf- life and maintaining postharvest qualities of raw materials.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand fundamental concepts and principles of postharvest technology	
	Skill	CLO2. Recognize and control factors causing postharvest losses. CLO3. Evaluate postharvest handlings and preservation methods for prolonging shelf- life and maintaining postharvest qualities of raw materials.	
	Attitude	CLO4. Collaborate well with other students in seminar sessions	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction of post-harvest technologies	1	I
	Postharvest physiology of plant materials	2	T
	Postharvest handlings of plant materials	2	T
	Preservation techniques for plant materials	3	T, U
	General principles of postharvest changes in animal materials	2	T
	Postharvest handlings of animal materials	2	T
	Preservation of animal-derived raw materials	3	T, U
	Examination forms	Multiple choices and written tests	
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbooks: ● Florkowski, W., Banks, N., Shewfelt, R., Prussia, S. (2014). Postharvest Handling: A Systems Approach. Academic Press ● Sunil Pareek. (2017). Novel Postharvest Treatments of Fresh Produce. CRC Press. ● M. Shafiur Rahman. (2020). Handbook of Food Preservation. CRC Press. Reference books: ● Chakraverty, A., Mujumdar. A.S., Ramaswamy. M.V.R.H.S. (2003). Handbook of Postharvest Technology Cereals, Fruits, Vegetables, Tea, and Spices. Marcel Dekker, INC. ● Siddiqui. M.W. (2016). Eco-Friendly Technology for Postharvest Produce Quality. Academic Press. ● Lectures and other study materials will be on Blackboard of the International University.
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2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

CLO	PLO						
	1	2	3	4	5	6	7
1	1						
2	2						
3							1
4					3		

3.Planned learning activities and teaching methods

Wee k	Topic	CLO	Assessments	Learning activities
1	Introduction of post-harvest technologies	1	Midterm exam	Lecture, discussion
2	Postharvest Physiology of Fruits and Vegetables	1,2	Midterm exam	Lecture, discussion
3	Postharvest Handling and Treatments of Fruits and Vegetables	1,2,3	Midterm exam	Lecture, discussion
4	Minimal Processing of Fruit and Vegetables	1,2,3	Midterm exam	Lecture, discussion
5	Structure, Composition, and Harvesting of Grains and Pulses	1,2,3	Midterm exam	Lecture, discussion
6	Postharvest Handling of Grains and Pulses	1,2,3	Midterm exam	Lecture, discussion
7	Postharvest Handling and Preservation of Fresh Fish and Seafood	1,2,3	Midterm exam	Lecture, discussion
8	Postharvest Storage and Safety of Meat	1,2,3	Midterm exam	Lecture, discussion
9-10	Midterm exam			

Week	Topic	CLO	Assessments	Learning activities
11	Quality Assessment Methods and Postharvest Handling of Fresh Poultry Eggs	1,2,3	Final exam	Lecture, discussion
12	Postharvest Handling of Milk	1,2,3	Final exam	Lecture, discussion
13	Hurdle Technology for Food Preservation	2,3	Final exam	Lecture, discussion
14	Preservation Using Chemicals and Microbes	2,3	Final exam	Lecture, discussion
15	Preservation by Controlling Water, Structure, and Atmosphere	2,3	Final exam	Lecture, discussion
16	Preservation Using Heat and Energy Enhancing Food Preservation by Indirect Approach	2,3	Final exam	Lecture, discussion
17	Seminar	4		Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignments	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Assignments (30%)				Report 70%Pass
Midterm exam (30%)	Midterm exam 60%Pass	Midterm exam 60%Pass		
Final exam (40%)	Final exam 60%Pass	Final exam 60%Pass	Final exam 60%Pass	

Note: %Pass (assignments): % students have scores greater than 65 out of 100.

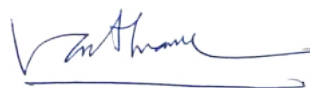
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'Van Thuan', with a long horizontal flourish extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: FOOD PLANT DESIGN

Course Code: BTFT355IU

1. General information

Course name	- (in English) Food Plant Design - (in Vietnamese) Thiết kế nhà máy thực phẩm
Course designation	<i>This course is essential for students to have a thorough understanding of the philosophy, tools and techniques of food factory design. This course is aimed at providing the background and skills necessary for effective design of the food process and sanitary system using a systems approach. This course will cover the following contents: design of food factory processes and sanitary system.</i>
Course type	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the module is taught	6,7,8
Person responsible for the module	Assoc. Prof. Nguyen, Vu Hong Ha
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture, Private study including examination preparation, specified in hours ³⁵ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0

³⁵

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT305IU – Food Quality Assurance System		
Course objectives	After studying this course, the students will be able to: - Have knowledge on types and salient features of different plant layouts such as rice, maize, horticultural pulses, oil seeds, milk and milk products, poultry, meat & fish. - Have an understanding of site selection, layout procedures and project design concepts and considerations. - Have knowledge on principles and types, requirements of food processing industries including machinery. - Have an understanding on environmental protection from food plant sanitation and economic aspects, record & report maintenance of food plants		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Apply knowledge in mathematics, physics and engineering in food plant design. CLO2. Demonstrate the consideration of global, social, cultural, environmental and economic factors in food plant design	
	Skill	CLO3. Provide reports with technical breadth and depth.	
	Attitude	CLO4. Self-acquire knowledge and skills in food plant design	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to plant design, sanitation, situations, difference and considerations	1	I, U
	Plant layout, Types of plant layout, and lay out design principles	1	T, U
	Location and site selection for food plants	1	T, U
	Food plant size, utilities and services	1	T, U
	Food plant layout introduction, planning and experimentation	1	T, U
	Food Processing and operations	1	T, U
	Building materials and construction	1	T
	Food plant sanitation and Regulatory Requirements	1	T, U
	Microorganisms of Food Manufacturing Concerns	1	T, U
	Sanitary Facility Design	1	T, U
	Examination forms	written test	

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: - Sharma, A. K., & Kumbhar, B. K. (2020). Food Processing Plant and Design Layout. - Cramer, M. M. (2013). Food plant sanitation: design, maintenance, and good manufacturing practices. CRC Press. References: - Marriott, N. G., Gravani, R. B., & Schilling, M. W. (2006). Principles of food sanitation (Vol. 22). New York: Springer.

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

CLO	PLO						
	1	2	3	4	5	6	7
1	3						
2		4					
3			3				
4							2

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to plant design, sanitation, situations, difference and considerations	1,2,3,4	Assignments or Quiz	Lecture, discussion
2	Plant layout, Types of plant layout, and layout design principles	1,2,3,4	Assignments or Quiz	Lecture, discussion
3	Location and site selection for food plants	1,2,3,4	Assignments or Quiz	Lecture, discussion
4	Food plant size, utilities and services	1,2,3,4	Assignments or Quiz	Lecture, discussion
5	Food plant layout introduction, planning and experimentation	1,2,3,4	Assignments or Quiz	Lecture, discussion
6	Food Processing and operations	1,2,3,4	Assignments or Quiz	Lecture, discussion
7	Building materials and construction	1,2,3,4	Assignments or Quiz	Lecture, discussion
8	Food plant sanitation and Regulatory Requirements	1,2,3,4	Assignments or Quiz	Lecture, discussion
9-10	Midterm			

Week	Topic	CLO	Assessments	Learning activities
11	Microorganisms of Food Manufacturing Concerns and Control	1,2,3,4	Assignments or Quiz	Lecture, discussion
12	Sanitary Facility Design	1,2,3,4	Assignments or Quiz	Lecture, discussion
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Quiz/Assignment	1-5	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Quiz/Assignment (30%)	70%Pass	70%Pass	70%Pass	70%Pass
Midterm exam (30%)	Midterm exam 70%Pass	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass	Final exam 70%Pass		

Note: %Pass (exam): % students have scores greater than 50 out of 100.

%Pass (quiz, project): % students have scores greater than 70 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
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COURSE SYLLABUS

Course Name: FOOD PROCESSING

Course Code: BTFT412IU

1. General information

Course name	- <i>(in English)</i> Food Processing - <i>(in Vietnamese)</i> Chế biến thực phẩm
Course designation	This subject will provide knowledge on following: - Wide range of processing techniques that are used to process foods. - Overview of most unit operations, details of the processing methods and equipment, operation conditions and the effects of processing on the quality of food - How knowledge on the properties of foods and the required changes are used to design equipment and to control processing conditions on an industrial scale. - Food quality, safety, spoilage and shelf-life
Course type	☐ <i>General knowledge</i> ☒ <i>Fundamental</i> ☐ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	5,6,7
Person responsible for the module	Assoc. Prof. Le Ngoc Lieu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ³⁶ : 60 h	
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS	
Number of periods	Theory: 30 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT203IU – Food Engineering Principles	
Course objectives	After studying this course, the students will be able to: – Understand fundamental principles of food processing and concepts underlying food processing methods. – Understand applications of food unit operation procedures in food processing. – Propose a plan and method for shelf-life assessment of a certain food.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Have knowledge on the whole processing of a food CLO2. Design a processing for a certain food and formulate a solution for shelf-life testing.
	Skill	CLO3. Communicate efficiently to present technical problems.
	Attitude	CLO4. Demonstrate the ability to access and use information from external sources to describe a food processing

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>		
	Weight: lecture session (2 hours)		
	Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Introduction Ambient temperature processing - Raw material preparation - Extraction and separation of food components - Size reduction - Mixing, forming and coating - Food biotechnology - Minimal processing methods	3	I, U
	Processing by application of heat - Overview of heat processing - Heating processing using steam or hot water (blanching, industrial cooking, pasteurization, heat sterilization, evaporation and distillation, crystallization, canning) - Processing using hot air or heated surface (drying, smoking, baking and roasting, extrusion) - Heat processing using hot oils (frying)	3	T, U
	Processing by direct and radiated energy (dielectric heating, ohmic heating, infrared heating)	1	T, U
	Processing by removal of heat - Refrigeration - Chilling - Freezing - Freeze drying and freeze concentration	1	T, U
	Post-processing operation - Packaging - Filling and sealing of containers - Materials handling, storage and distribution	2	T, U
	Food quality, safety, spoilage and shelf-life - Quality attributes - Food safety - Hurdle concepts - Spoilage - Shelf-life assessment - Date marking - Food traceability and authenticity	2	T, U
Process monitoring and hygienic design	1	I, T	
Seminar on processing of various food products	2	T, U	
Examination forms	Multiple-choice questions, written test (problem solving)		

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: • Fellows, P. J. (2022). Food processing technology: principles and practice. Woodhead publishing. References: • Barbosa-Cánovas, G. V., Tapia, M. S., & Cano, M. P. (Eds.). (2004). Novel food processing technologies. CRC press. • Journal articles

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	1						
2		4					
3			3				
4							1

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1-2	Introduction Ambient temperature processing	1,2	examination	Lecture, discussion
3-4	Processing by Application of Heat	1,2	examination	Lecture, discussion
5	Processing by direct and radiated energy	1,2	examination	Lecture, discussion
5	Processing by removal of heat	1,2	examination	Lecture, discussion
6	Post-processing operation	1,2	examination	Lecture, discussion
6	Food quality, safety, spoilage and shelf-life	2	examination	Lecture, discussion
7	Process monitoring and hygienic design	1,2	examination	Lecture, discussion
8	Seminar on processing of various food products	3,4	Presentation, Q&A	Presentation , Q&A
9-10	Midterm			
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar presentation	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar presentation			70%Pass	70%Pass
Midterm exam	Midterm exam 70%Pass			
Final exam		Final exam 70%Pass		

Note: %Pass (exam): % students have scores greater than 50 out of 100.

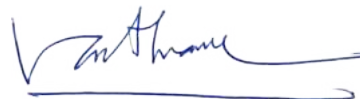
%Pass (seminar): % students have scores greater than 80 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Ngoc Lieu
- Email: lnlieu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology

COURSE SYLLABUS

Course Name: DAIRY PRODUCT TECHNOLOGY

Course Code: **BTFT441IU**

1. General information

Course name	- <i>(in English)</i> Dairy Product Technology - <i>(in Vietnamese)</i> Công nghệ chế biến sữa và các sản phẩm sữa
Course designation	Students taking this course will be provided with integrated concepts in dairy chemistry, microbiology, processing and products. Course materials cover major operations in milk processing from raw materials to finished products. Important industrial practices such as plant sanitation and HACCP are also included.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	6,7,8
Person responsible for the module	Dr. Nguyen Ngoc Thanh Tien
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ³⁷ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0

³⁷ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1																							
Course objectives	After studying this course, the students will be able to: – Describe composition, chemical, physical properties of milk and understand their roles in milk processing – Understand the influences of processing conditions on properties of milk and dairy products – Explain unit operations and steps involved in production of dairy products. – Understand sanitation of dairy plant and implementation of HACCP in milk processing – Gain the ability to think critically about problems and issues in dairy processing.																							
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Understand the basic principles of producing healthy and safe dairy products</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Design appropriate processing procedures or formula for dairy products CLO3: Communicate well with technical depth</td></tr><tr><td>Attitude</td><td colspan="2">CLO4. Collaborate well with other students in team work</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Understand the basic principles of producing healthy and safe dairy products		Skill	CLO2. Design appropriate processing procedures or formula for dairy products CLO3: Communicate well with technical depth		Attitude	CLO4. Collaborate well with other students in team work										
Competency level	Course learning outcome (CLO)																							
Knowledge	CLO1. Understand the basic principles of producing healthy and safe dairy products																							
Skill	CLO2. Design appropriate processing procedures or formula for dairy products CLO3: Communicate well with technical depth																							
Attitude	CLO4. Collaborate well with other students in team work																							
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><th>Topic</th><th>Weight (theory)</th><th>Level</th></tr><tr><td>Milk source, production, and consumption Main characteristics of milk</td><td>1</td><td>I, T, U</td></tr><tr><td>Milk components</td><td>1</td><td>T, U</td></tr><tr><td>Milk and Dairy processes</td><td>3</td><td>T, U</td></tr><tr><td>Dairy Products</td><td>3</td><td>T, U</td></tr><tr><td>Microbiology of milk Dairy plant sanitation, HACCP</td><td>1</td><td>T</td></tr><tr><td>Seminar</td><td>1</td><td>T, U</td></tr></table>			Topic	Weight (theory)	Level	Milk source, production, and consumption Main characteristics of milk	1	I, T, U	Milk components	1	T, U	Milk and Dairy processes	3	T, U	Dairy Products	3	T, U	Microbiology of milk Dairy plant sanitation, HACCP	1	T	Seminar	1	T, U
Topic	Weight (theory)	Level																						
Milk source, production, and consumption Main characteristics of milk	1	I, T, U																						
Milk components	1	T, U																						
Milk and Dairy processes	3	T, U																						
Dairy Products	3	T, U																						
Microbiology of milk Dairy plant sanitation, HACCP	1	T																						
Seminar	1	T, U																						
Examination forms	Short-answer questions, multiple-choice																							
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.																							

Reading list	Textbook: • P. Walstra, J. T. M. Wouters and T. J Geurts. 2005. Dairy Science and Technology, 2nd Edition. Taylor & Francis. References: • Dewettinck K., Huyghebaert A., & Rombaut R. Milk and Dairy Technology – Ghent university course 2008-2009 • Bylund, G. 1995. Tetra-Pak Dairy Processing Handbook. Tetra-Pak Processing Systems, Lund, Sweden • Early, R. 1998. The Technology of Dairy Products. Blackie Academic & Professional, London
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Milk source, production, consumption, and characteristics	1,2	Quiz exam &	Lecture, discussion
2	Milk components	1,2	Quiz exam &	Lecture, discussion
3-5	Milk and dairy processes: - Collection, centrifugation, standardization, homogenization, concentration - Heat treatment, clarification - Evaporation, freezing, aseptic packaging, membrane processing	1,2	Quiz exam &	Lecture, discussion
6-8	Dairy products: - Fermented products - Cream and butter - Cheese and condensed milk	1,2	Quiz exam &	Lecture, discussion
9-10	Midterm			
11	Microbiology of milk Dairy plant sanitation HACCP	1,2	Quiz exam &	Lecture, discussion
12	Seminar	2,3,4	Presentation, Q&A	Presentation, Q&A

18-20	Reserve week and Final exam			
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4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar presentation	1-3	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar presentation (30%)		Presentation 70%Pass	Presentation 70%Pass	Presentation 70%Pass
Midterm exam (30%)	Midterm exam 70%Pass	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass	Final exam 70%Pass		

Note: %Pass (seminar): % students have scores greater than 80 out of 100.

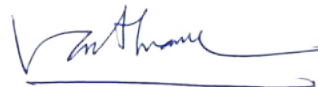
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: nnttien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: PRACTICE IN DAIRY PRODUCT TECHNOLOGY

Course Code: BTFT451IU

1. General information

Course name	- <i>(in English)</i> Practice in Dairy Product Technology - <i>(in Vietnamese)</i> Thực hành Công nghệ chế biến sữa và các sản phẩm sữa
Course designation	This project will provide knowledge on following: - Integrated concepts in dairy chemistry, microbiology, processing and products. - Major operations in milk processing from raw materials to finished products - Important industrial practices such as plant sanitation and HACCP are also included.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the course is taught	7, 8
Person responsible for the course	<i>MSc. Nguyen Thi Huong Giang</i>
Language	English
Relation to curriculum	Compulsory
Teaching methods	lab work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours: 15hrs for labwork, 15 hrs for field trip Private study including examination preparation, specified in hours ¹ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT441IU – Dairy Product Technology - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1																	
Course objectives	After studying this course, the students will be able to: ● Understand how to control raw milk quality using simple and basic methods like Alcohol Precipitation Test (APT), Clot-on-boiling (COB) test, acidity test, pH test, etc. ● Understand how to check whether milk is heated sufficiently and helps students know how to classify different heat-treated milk products. Learn how to make some dairy products																	
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Have knowledge on how to detect adulteration as well as defects in milk and dairy products</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Analyze techniques and interpreting the results</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Work in group</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Have knowledge on how to detect adulteration as well as defects in milk and dairy products		Skill	CLO2. Analyze techniques and interpreting the results		Attitude	CLO3. Work in group				
Competency level	Course learning outcome (CLO)																	
Knowledge	CLO1. Have knowledge on how to detect adulteration as well as defects in milk and dairy products																	
Skill	CLO2. Analyze techniques and interpreting the results																	
Attitude	CLO3. Work in group																	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Raw Milk Quality Control</td><td>1</td><td>I,T,U</td></tr><tr><td>Heat Treated Product Quality Control And Coagulation Of Caseins</td><td>1</td><td>I,T,U</td></tr><tr><td>Making Dairy Products</td><td>1</td><td>T,U</td></tr><tr><td>Fieldtrip</td><td>3</td><td>U</td></tr></table>			Topic	Weight	Level	Raw Milk Quality Control	1	I,T,U	Heat Treated Product Quality Control And Coagulation Of Caseins	1	I,T,U	Making Dairy Products	1	T,U	Fieldtrip	3	U
Topic	Weight	Level																
Raw Milk Quality Control	1	I,T,U																
Heat Treated Product Quality Control And Coagulation Of Caseins	1	I,T,U																
Making Dairy Products	1	T,U																
Fieldtrip	3	U																
Examination forms	Labwork report and fieldtrip report																	
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.																	
Reading list	Textbook: ● Egan, H., Kirk, R., Sawyer, R., (1981). Pearson's Chemical Analysis of Foods. 8th edition, Churchill Livingstone, Edinburgh. References ● Draaiyer, J., Dugdill, B., Bennett, A., & Mounsey, J. (2009). <i>Milk Testing and Payment Systems</i>. ROME: FAO. - Fredrick, E., Lewille, B., (2008). Practical exercises: tests on the primary quality of raw milk.																	

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Learning Outcomes (PLO) (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Raw Milk Quality Control	1,2,3	Lab report	Lecture, labwork
2	Heat Treated Product Quality Control And Coagulation Of Caseins	1,2,3	Lab report	Lecture, labwork
3	Making Dairy Products P1	2,3	Lab report	Lecture, labwork
4	Making Dairy Products P2	2,3	Lab report	Lecture, labwork
5	Fieldtrip	2,3	Fieldtrip report	Fieldtrip
6	Fieldtrip	2,3	Fieldtrip report	Fieldtrip

4. Assessment plan

Course assessment policy

Methods	(%)
Lab/Fieldtrip behavior	10
Lab report	50
Fieldtrip report	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab participation and behavior (10%)			100%Pass
Lab report (50%)	60%Pass	60%Pass	60%Pass
Fieldtrip report (40%)	80%Pass	80%Pass	80%Pass

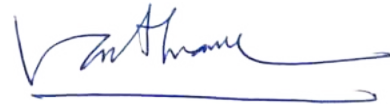
Note: %Pass: Target that % of students having scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'Van Thuan', with a long horizontal stroke extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Beverage Product Technology

Course Code: BTFT442IU

1. General information

Course name	- <i>(in English)</i> Beverage Product Technology - <i>(in Vietnamese)</i> Công nghệ đồ uống
Course designation	This subject will provide knowledge on following: - Introduction of alcoholic and non-alcoholic beverages. - The basic principles and producing processes of fruit juice, fruit-like juice, carbonated soft drinks, beer, wine and traditional Vietnamese alcohols. - Hygiene and sterilization in beverage technology.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	6,7,8
Person responsible for the module	A/Prof. Nguyen, Vu Hong Ha
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture. Private study including examination preparation, specified in hours ³⁸ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS

³⁸ When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 30 Practice: 0																																
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1																																
Course objectives	After studying this course, the students will be able to: – Understand the basic principles to produce both fermentation and non-fermentation beverage types. – Know processing techniques, methods on the product quality inspection and operate the processing line to produce popular beverage products. – Apply clean in place systems in the beverage industry																																
Course learning outcomes	Upon the successful completion of this course students will be able to:																																
	Competency level	Course learning outcome (CLO)																															
	Knowledge	CLO1. Understand the basic principles of producing both alcoholic and alcoholic and non-alcoholic beverages, the processing techniques, methods on the product quality inspection and operating the processing chains to produce popular beverage products																															
	Skill	CLO2. Design appropriate processing procedures for alcoholic and non-alcoholic beverages. CLO3. Communicate well with technical depth																															
	Attitude	CLO4. Collaborate well with other students in seminar																															
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to beverage</td><td>1</td><td>I</td></tr><tr><td>Fruit juice</td><td>2</td><td>T, U</td></tr><tr><td>Fruit nectar</td><td>1</td><td>T</td></tr><tr><td>Carbonated soft drinks</td><td>1</td><td>T</td></tr><tr><td>Hygiene and sterilization in beverage technology</td><td>1</td><td>T</td></tr><tr><td>Brewing-Beer production</td><td>1</td><td>T, U</td></tr><tr><td>Grape-Wine making</td><td>1</td><td>T, U</td></tr><tr><td>Rice wine making</td><td>1</td><td>T</td></tr><tr><td>Seminar</td><td>1</td><td>T, U</td></tr></table>			Topic	Weight	Level	Introduction to beverage	1	I	Fruit juice	2	T, U	Fruit nectar	1	T	Carbonated soft drinks	1	T	Hygiene and sterilization in beverage technology	1	T	Brewing-Beer production	1	T, U	Grape-Wine making	1	T, U	Rice wine making	1	T	Seminar	1	T, U
Topic	Weight	Level																															
Introduction to beverage	1	I																															
Fruit juice	2	T, U																															
Fruit nectar	1	T																															
Carbonated soft drinks	1	T																															
Hygiene and sterilization in beverage technology	1	T																															
Brewing-Beer production	1	T, U																															
Grape-Wine making	1	T, U																															
Rice wine making	1	T																															
Seminar	1	T, U																															
Examination forms	Written test																																
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.																																

Reading list	Textbook: • Hans Michael Eßlinger. Handbook of Brewing: Processes, Technology, Markets. 2009. Wiley. References: • Jasson. R. S. (2014). Wine Science: principle and application. (4 nd Eds). Academic Press. • Philip R. Ashurst. (2016). Chemistry and Technology of Soft Drinks and Fruit Juices. (3 rd Eds). John Wiley & Sons, Ltd. • Lectures and other documents will be on Blackboard of the International University
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

CLO	PLO						
	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4					4		

3. Planned learning activities and teaching methods.

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to beverage	1	Midterm exam	Lecture, discussion
2-3	Fruit juice	1,2	Midterm exam	Lecture, discussion
4	Fruit nectar	1,2	Midterm exam	Lecture, discussion
5	Carbonated soft drinks	1,2	Midterm exam	Lecture, discussion
6	Hygiene and sterilization in beverage technology	1,2	Midterm exam	Lecture, discussion
7	Brewing-Beer production	1,2	Final exam	Lecture, discussion
8	Grape-Wine making	1,2	Final exam	Lecture, discussion
9-10	Midterm			
11	Rice wine	1,2	Final exam	Lecture, discussion
12	Seminar	2,3,4	Reports	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar (30%)		70%Pass	70%Pass	70%Pass
Midterm exam (30%)	Midterm exam 70%Pass	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass	Final exam 70%Pass		

Note: %Pass (seminar): % students have scores greater than 80 out of 100.

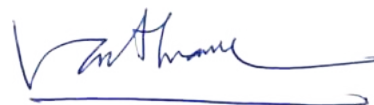
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Practice in Beverage Product Technology

Course Code: BTFT452IU

1. General information

Course name	- <i>(in English)</i> Practice in Beverage Product Technology - <i>(in Vietnamese)</i> Thực hành Công nghệ đồ uống
Course designation	This subject will provide knowledge on following: - Introduction of alcoholic and non-alcoholic beverages. - The basic principles and producing processes of fruit juice, fruit-like juice, beer, wine and traditional Vietnamese alcohols.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	6,7,8
Person responsible for the module	Msc. Tran, Thi Yen Nhi
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab works
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 15 h for lab works, 15 h for field trip Private study including examination preparation, specified in hours ³⁹ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

³⁹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT442IU – Beverage Technology - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1																				
Course objectives	After studying this course, the students will be able to: - Understand the basic principles to produce both fermentation and non-fermentation beverage types. - Understand the processing techniques, methods on the product quality inspection and operate the processing chains to produce popular beverage products.																				
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Obtain knowledge on how to produce different types of beverages</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Conduct analyzing techniques and interpreting the results</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Work in group</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Obtain knowledge on how to produce different types of beverages		Skill	CLO2. Conduct analyzing techniques and interpreting the results		Attitude	CLO3. Work in group							
Competency level	Course learning outcome (CLO)																				
Knowledge	CLO1. Obtain knowledge on how to produce different types of beverages																				
Skill	CLO2. Conduct analyzing techniques and interpreting the results																				
Attitude	CLO3. Work in group																				
Content	The description of the contents should clearly indicate the weighting of the content and the level. Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight (lab)</th><th>Level</th></tr><tr><td>Fruit juice production</td><td>1</td><td>T, U</td></tr><tr><td>Dragon fruit wine production</td><td>0.5</td><td>T, U</td></tr><tr><td>Production of spray-dried fruit juice powder</td><td>1</td><td>T, U</td></tr><tr><td>Traditional Vietnamese rice wine fermentation</td><td>0.5</td><td>T, U</td></tr><tr><td>Visiting beverage manufacturers</td><td>3</td><td>T, U</td></tr></table>			Topic	Weight (lab)	Level	Fruit juice production	1	T, U	Dragon fruit wine production	0.5	T, U	Production of spray-dried fruit juice powder	1	T, U	Traditional Vietnamese rice wine fermentation	0.5	T, U	Visiting beverage manufacturers	3	T, U
Topic	Weight (lab)	Level																			
Fruit juice production	1	T, U																			
Dragon fruit wine production	0.5	T, U																			
Production of spray-dried fruit juice powder	1	T, U																			
Traditional Vietnamese rice wine fermentation	0.5	T, U																			
Visiting beverage manufacturers	3	T, U																			
Examination forms	Labwork report and fieldtrip report																				
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork and fieltrips. Students will be assessed on the basis of their labwork and fieldtrip participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.																				

Reading list	<i>Textbooks:</i> ● Jackson, R. S. (2008). <i>Wine science: principles and applications</i>. Academic press. ● Cantarelli, C. (Ed.). (2012). <i>Biotechnology applications in beverage production</i>. Springer Science & Business Media. ● Farber, M., & Barth, R. (2019). <i>Mastering brewing science: Quality and production</i>. John Wiley & Sons. <i>References:</i> ● Esslinger, H. M. (Ed.). (2009). <i>Handbook of brewing: processes, technology, markets</i>. John Wiley & Sons. ● Ashurst, P. R. (2016). <i>Chemistry and technology of soft drinks and fruit juices</i>. John Wiley & Sons. ● Vine, R. P. (2012). <i>Commercial winemaking: Processing and controls</i>. Springer Science & Business Media. ● Jiang, X., Lu, Y., & Liu, S. Q. (2020). Effects of Different Yeasts on Physicochemical and Oenological Properties of Red Dragon Fruit Wine Fermented with <i>Saccharomyces cerevisiae</i>, <i>Torulaspora delbrueckii</i> and <i>Lachancea thermotolerans</i>. <i>Microorganisms</i>, 8(3), 315. ● Menke, S. (2012) Wine and Must Analysis Standard [Laboratory manual]. Retrieved from http://webdoc.agsci.colostate.edu/aes/werc/publications/winerylaboratorymanual%20rev2012.pdf ● Jacobson, J. L. (2006). <i>Introduction to wine laboratory practices and procedures</i>. Springer Science & Business Media. ● Bamforth, C. W. (2023). <i>Beer: tap into the art and science of brewing</i>. Oxford University Press. ● Bisson, L. F. (2002). <i>An Introduction to Wine Production</i> [Laboratory manual]. Retrieved from http://lfbisson.ucdavis.edu/PDF/VEN124%20lab%20manual%202002.pdf
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Dragon fruit wine production	1, 2, 3	Lab report	Lecture, labwork

1	Traditional Vietnamese rice wine fermentation	1, 2, 3	Lab report	Lecture, labwork
2	Fruit juice production	1, 2, 3	Lab report	Lecture, labwork
3	Production of spray-dried fruit juice powder	1, 2, 3	Lab report	Lecture, labwork
4,5,6	Visiting beverage manufacturers	1, 2, 3	Fieldtrip report	Lecture, Fieldtrip

4. Assessment plan

Course assessment policy

Methods	(%)
Lab report	50
Fieldtrip report	40
Lab/fieldtrip participation and behavior	10

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab report (50%)	Lab report 70%Pass	Lab report 70%Pass	Lab report 70 %Pass
Fieldtrip report (40%)	Fieldtrip report 70%Pass	Fieldtrip report 70%Pass	Fieldtrip report 70%Pass
Lab participation and behavior (10%)			100%Pass

Note: %Pass (lab report): % students have scores greater than 70 out of 100.

%Pass (fieldtrip report): % students have scores greater than 70 out of 100.

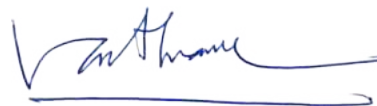
%Pass (lab participation and behavior): % students have scores 100 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Tran Thi Yen Nhi
- Email: ttynhi@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: CEREAL PRODUCT TECHNOLOGY

Course Code: BTFT443IU

1. General information

Course name	- <i>(in English)</i> Cereal Product Technology - <i>(in Vietnamese)</i> Công nghệ chế biến lương thực
Course designation	This subject will provide knowledge on following: - Structure, composition and functional properties of rice, wheat, barley and other cereal grains used to produce starches, flours, milling by-products, cereal-based food - Cereal processing technology such as wet and dry processing, extrusion technology, noodle making technology, etc.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:.....</i>
Semester(s) in which the course is taught	7,8
Person responsible for the course	Prof. Pham, Van Hung
Language	English
Relation to curriculum	Professional
Teaching methods	Lecture, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ⁴⁰ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS

⁴⁰

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 30 Practice: 0	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1	
Course objectives	After studying this course, the students will be able to: - Know how to classify the cereals produced and used as staple foods over the world, especially the cereals popularly used in Vietnam and Asia. - Know how to determine the chemical composition, nutritional and functional qualities of the cereals. - Understand the principle of the storage and the relationship between the storage process and grain quality and economic benefit. - Understand the principle of wet and dry processing and apply these products for food processing. - Have knowledge on noodle processing from cereal grains	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understand the chemistry, processing and preservation techniques of the cereal product and the operation of the processing chains to produce noodles.
	Skill	CLO2. Design and develop a new formula or processing line for cereal-related products CLO3. Communicate well with technical depth
	Attitude	CLO4. Collaborate well with other students in seminar

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to Cereal Science; updated information in production and utility of cereals in the world.	1	I
	Post-harvest technology of wheat Wheat grains: structure and composition	1	T, U
	Wheat milling technology Wheat flour composition	1	T, U
	Pasta and noodle processing technology	1	T, U
	Post-harvest technology of rice Rice grain and milling technology	1	T, U
	Rice-based product processing technology	1	T, U
	Post-harvest of legumes Legumes-based product processing technology	1	T, U
	Post-harvest technology of roots and tubers Starch processing technology	1	T, U
	Midterm exam		
	Modified starch processing technology	1	T, U
	Starch-based food products processing technology	1	T, U
	Final exam		
Examination forms	Written test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	[1] Hosney, R. Carl. 2010. Principles of Cereal Science and Technology. 3rd Edition, American Association of Cereal Chemists. [2] Gopal Kumar Sharma, Anil Dutt Semwal, Dev Kumar Yadav (2021). Advances In Cereals Processing Technologies. 1st edition, New India Publishing Agency- Nipa		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Learning Outcomes (PLO) (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to Cereal Science; updated information in production and utility of cereals in the world.	1	Group presentation	Lecture, Discussion,
2	Post-harvest technology of wheat Wheat grains: structure and composition	1,2,3,4	Group presentation	Lecture, Discussion, Group work
3	Wheat milling technology Wheat flour composition	1,2,3,4	Group presentation	Lecture, Discussion, Group work
4	Pasta and noodle processing technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
5	Post-harvest technology of rice Rice grain and milling technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
6	Rice-based product processing technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
7	Post-harvest of legumes Legumes-based product processing technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
8	Post-harvest technology of roots and tubers Starch processing technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
9-10	Midterm			
11	Modified starch processing technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
12	Starch-based food products processing technology	1,2,3,4	Group presentation	Lecture, Discussion, Group work
18-19	Final exam			

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Assignment/ Group presentation (30%)		70%Pass	70%Pass	70%Pass
Midterm exam (30%)	80%Pass	80%Pass		
Final exam (40%)	80%Pass	80%Pass		

Note: %Pass (exam): Target that % of students having scores greater than 50 out of 100.

%Pass (assignment/presentation): Target that % of students having scores greater than 80 out of 100.

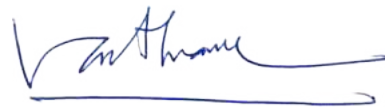
5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Prof. Pham Van Hung

- Email: pvhung@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'Van Thuan', with a long horizontal stroke extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: PRACTICE IN CEREAL PRODUCT TECHNOLOGY

Course Code: BTFT453IU

1. General information

Course name	- <i>(in English)</i> Practice in Cereal Product Technology - <i>(in Vietnamese)</i> Thực hành Công nghệ chế biến lương thực
Course designation	This subject will provide knowledge on following: - Structure, composition and functional properties of rice, wheat, barley and other cereal grains used to produce starches, flours, milling by-products, cereal- based foods; cereal processing technology such as wet and dry processing, bread-making technology, extrusion technology, noodle-making technology, etc. - Quality control and assurance in food processing.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the course is taught	7, 8
Person responsible for the course	Msc. Nguyen, Thi Huong Giang
Language	English
Relation to curriculum	Compulsory
Teaching methods	lab work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours: 15hrs for labwork and 15hrs for fieldtrip Private study including examination preparation, specified in hours ¹ : 30
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT443IU – Cereal Product Technology - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1																	
Course objectives	After studying this course, the students will be able to: - Understand the chemical composition, nutritional and functional qualities of the cereals. - Understand the principle of the storage and the relationship between the storage process and grain quality and economic benefit. - Understand the principle of wet and dry processing and apply these products for food processing. - Have knowledge on bread-making: materials and process - Have knowledge on processing other products from cereal grains (beside bread) such as noodle, spaghetti, cake, popcorn, etc.																	
Course learning outcomes	Upon the successful completion of this course students will be able to:																	
	Competency level	Course learning outcome (CLO)																
	Knowledge	CLO1.Design a processing line to produce the cereal food products																
	Skill	CLO2. Identify, formulate, and solve engineering problems in cereal processing line																
	Attitude	CLO3. Work in group																
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Quality assessment of cereal products – Flour</td><td>1</td><td>I,T,U</td></tr><tr><td>Production of Yeast-Leavened Bakery Products (Bread) and Chemical-Leavened Products (Biscuit)</td><td>1</td><td>I,T,U</td></tr><tr><td>Production of noodle from wheat flour Production of rice noodle</td><td>1</td><td>I,T,U</td></tr><tr><td>Fieldtrip</td><td>3</td><td>U</td></tr></table>			Topic	Weight	Level	Quality assessment of cereal products – Flour	1	I,T,U	Production of Yeast-Leavened Bakery Products (Bread) and Chemical-Leavened Products (Biscuit)	1	I,T,U	Production of noodle from wheat flour Production of rice noodle	1	I,T,U	Fieldtrip	3	U
Topic	Weight	Level																
Quality assessment of cereal products – Flour	1	I,T,U																
Production of Yeast-Leavened Bakery Products (Bread) and Chemical-Leavened Products (Biscuit)	1	I,T,U																
Production of noodle from wheat flour Production of rice noodle	1	I,T,U																
Fieldtrip	3	U																
Examination forms	Labwork Report and fieldtrip report																	
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labworks. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.																	
Reading list	<i>Textbook:</i> - Edwards, W. P. (2015). <i>The Science of Bakery Products</i>. Royal Society of Chemistry. <i>References</i> 1. Serna-Saldivar, S. O., & Serna-Saldivar, S. O. (2012). <i>Cereal grains: Laboratory Reference and Procedures Manual</i>. Boca Raton, FL: CRC																	

	Press. 2. H.J. Meijer (2007) Starch Dictionary. Agro by nature Wadsworth, P. K., & Larsen, N. G. (1986). <i>Falling number interlaboratory study, December 1985</i> . Wheat Research Institute, Dept. of Scientific and Industrial Research.
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (PLO) (1 -7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Quality assessment of cereal products – Flour	1,2,3	Lab report	Lecture, labwork
2	Production of Yeast-Leavened Bakery Products (Bread) Production of Chemical-Leavened Products (Biscuit)	1,2,3	Lab report	Lecture, labwork
3	Production of noodle from wheat flour	1,2,3	Lab report	Lecture, labwork
4	Development of cereal products	1,2,3	Lab report	Labwork
5,6	Fieldtrip	2,3	Fieldtrip report	Fieldtrip

4. Assessment plan

Course assessment policy

Methods	(%)
Lab behavior	10
Lab report	50
Fieldtrip report	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab participation and behavior (10%)			100%Pass
Lab report (50%)	60%Pass	60%Pass	60%Pass
Fieldtrip report (40%)	80%Pass	80%Pass	80%Pass

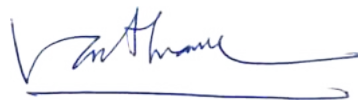
Note: %Pass: Target that % of students having scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'N. Van Thuan', with a long horizontal flourish extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: MEAT PRODUCT TECHNOLOGY

Course Code: BTFT445IU

1. General information

Course name	- <i>(in English)</i> Meat Product Technology - <i>(in Vietnamese)</i> Công nghệ chế biến các sản phẩm thịt
Course designation	<i>This subject will provide knowledge on following:</i> - <i>Basic concepts of meat science and technology including chemical and structural properties of meat, microbiology of meat, and technologies in meat product processing</i> - <i>General situation of meat production and consumption in the World and in Vietnam</i> - <i>Application of HACCP plan in meat processing</i>
Course type	☐ General knowledge ☐ Fundamental ☒ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the module is taught	7,8
Person responsible for the module	Dr. Nguyen Ngoc Thanh Tien
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ⁴¹ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS

⁴¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 30 Practice: 0		
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1		
Course objectives	After studying this course, the students will be able to: - Understanding about biochemistry of muscles and microbiology of meat and meat products - Understand principles of processes in meat industry - Understand procedures for typical meat products. - Increase their awareness of hygiene, food safety, additives and other legal issues and practices in meat		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Understand composition and structure of meat, slaughter of animals, post-mortem changes occurring in animal tissue and meat, principles of processing treatments for typical meat products.	
	Skill	CLO2. Design appropriate processing procedures for meat products. CLO3. Communicate well with technical depth.	
	Attitude	CLO4. Collaborate well with other students in presentation assignment session	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight	Level
	Meat production and consumption Composition and structure of meat	1	I, T, U
	The slaughter of animals Post-mortem changes	1	T, U
	Meat process	3	T, U
	Meat products	3	T, U
	Meat microbiology HACCP in meat processing	1	T, U
	Seminar	1	T, U
Examination forms	Multiple choices and short-answer written tests		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		

Reading list	Textbook: • Ranken, M. D. Handbook Of Meat Product Technology, Blackwell Science, 2000 Reference books: • Feiner, Meat products handbook: Practical science and technology, CRC 2006. • Warriss, P.D. Meat science: An introductory text, CABI Publishing, 2000 • Toldrá, Handbook of Meat Processing, Wiley 2010 • FAO. Guidelines for slaughtering, meat cutting and further processing, 1991 • FAO. Guidelines for Humane Handling, Transport and Slaughter of Livestock, 2001 • H.V. Alan, J.P. Sutherland. Meat and Meat Products: Technology, Chemistry and Microbiology. 1995. Chapman & Hall. • J.B. Girard. Technology of Meat and Meat Products. 1992. Ellis Horwood Ltd.
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2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Meat production and consumption Composition and structure of meat	1,2	Quiz & exam	Lecture, discussion
2	The slaughter of animals Post-mortem changes	1,2	Quiz & exam	Lecture, discussion
3-5	Meat process: - Chilling, freezing-thawing, and curing - Grinding, emulsification, and fermentation - Thermal processing, smoking, drying, and packaging	1,2	Quiz & exam	Lecture, discussion
6-8	Meat products: - Cooked Ham/ Canned Ham/ Dry - Cured Ham - Emulsified products: Cooked Sausages, Pâté - Canned Products and cured meat products: Bacon	1,2	Quiz & exam	Lecture, discussion
9-10	Midterm			

11	Microbiology of meat HACCP in meat processing	1,2	Quiz & exam	Lecture, discussion
12	Seminar	2,3, 4	Presentation, Q&A	Presentation, discussion
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignments	1	20
Mid-term exam	1	30
Final exam	1	50

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar presentation (30%)		Presentation 70% Pass	Presentation 70% Pass	Presentation 70% Pass
Midterm exam (30%)	Midterm exam 70% Pass	Midterm exam 70% Pass		
Final exam (40%)	Final exam 70% Pass	Final exam 70% Pass		

Note: %Pass (assignments): % students have scores greater than 80 out of 100.

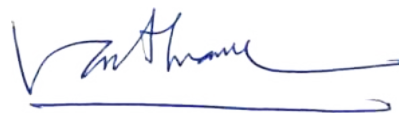
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: nnttien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: PRACTICE IN MEAT PRODUCT TECHNOLOGY

Course Code: BTFT455IU

1. General information

Course name	- <i>(in English)</i> Practice in Meat Product Technology - <i>(in Vietnamese)</i> Thực hành công nghệ chế biến các sản phẩm thịt
Course designation	<i>This subject will provide knowledge on following:</i> - Topics relating to meat science and technology such as chemical and structural properties of meat, microbiology of meat, and technologies in meat product processing. - The situation of meat production and consumption in the World and in Vietnam. Another part of the course discusses the application of HACCP in meat processing.
Course type	☐ General knowledge ☐ Fundamental ☒ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the course is taught	7, 8
Person responsible for the course	MSc. Trần Thị Yến Nhi
Language	English
Relation to curriculum	Compulsory
Teaching methods	lab works
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours: 15hrs for lab work, 10hrs for field trip Private study including examination preparation, specified in hours ¹ : 30
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT445IU – Meat Product Technology - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1															
Course objectives	After studying this course, the students will be able to: – Understand principles of processes in meat processing – Have basic knowledge of traditional meat processing methods – Have basic knowledge about recent trends in meat technology – Understand issues can arise in foods of meat and the settlement – Aware about hygiene, food safety, additives and other legal issues and practices in meat – Process and realize other current issues related to meat science.															
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Understand principles of meat technology processes</td></tr><tr><td>Skill</td><td>CLO2. Analyze techniques and interpret the results</td></tr><tr><td>Attitude</td><td>CLO3. Work in group</td></tr></table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Understand principles of meat technology processes	Skill	CLO2. Analyze techniques and interpret the results	Attitude	CLO3. Work in group							
Competency level	Course learning outcome (CLO)															
Knowledge	CLO1. Understand principles of meat technology processes															
Skill	CLO2. Analyze techniques and interpret the results															
Attitude	CLO3. Work in group															
Content	<i>The description of the contents should clearly indicate content and the the weighting of the level.</i> Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Physical measurement of meat</td><td>1</td><td>I,T,U</td></tr><tr><td>Making Meat Product</td><td>1</td><td>I,T,U</td></tr><tr><td>Meat Product Evaluation</td><td>1</td><td>T,U</td></tr><tr><td>Fieldtrip</td><td>3</td><td>U</td></tr></table>	Topic	Weight	Level	Physical measurement of meat	1	I,T,U	Making Meat Product	1	I,T,U	Meat Product Evaluation	1	T,U	Fieldtrip	3	U
Topic	Weight	Level														
Physical measurement of meat	1	I,T,U														
Making Meat Product	1	I,T,U														
Meat Product Evaluation	1	T,U														
Fieldtrip	3	U														
Examination forms	Labwork report and fieldtrip report															
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labworks. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.															
Reading list	<i>Textbooks:</i> Girard, J. P. (1992). <i>Technology of meat and meat products</i>. Ellis Horwood. Hui, Y. H. (2012). <i>Shelf-stable processed meat products. Handbook of meat and meat processing, second edition</i> (ed. Hui, YH). CRC Press, Boca Raton, FL, USA, 769-789. Toldrá, F. (Ed.). (2010). <i>Handbook of meat processing</i>. John Wiley & Sons. <i>References:</i>															

	Chambers, P. G., Grandin, T., Heinz, G., & Srisuvan, T. (2001). <i>Guidelines for humane handling, transport and slaughter of livestock</i>. Le, T. T., Nguyen, H. T., & Pham, M. A. (2020). Rigor mortis development and effects of filleting conditions on the quality of Tra catfish (<i>Pangasius hypophthalmus</i>) fillets. <i>Journal of food science and technology</i>, 57, 1320-1330. Sheridan, J. J., Allen, P., Ziegler, J. H., Marinkov, M., Suvakov, M. D., & Heinz, G. (1994). <i>Guidelines for slaughtering, meat cutting and further processing</i>. FAO. USDA, N. (2015). <i>Complete guide to home canning</i>. Agriculture Information Bulletin, 539. Varnam, A., & Sutherland, J. P. (1995). <i>Meat and meat products: technology, chemistry and microbiology</i> (Vol. 3). Springer Science & Business Media.
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¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Learning Outcomes (PLO) (1 -7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Physical measurement of meat	1,2,3	Lab report	Lecture, labwork
2	Making Meat Product	1,2,3	Lab report	Lecture, labwork
3	Meat Product Evaluation	1,2,3	Lab report	Lecture, labwork
4, 5, 6	Fieldtrip	1,2,3	Fieldtrip report	Fieldtrip

4. Assessment plan

Course assessment policy

Methods	(%)
Lab participation and behavior	10
Lab report	50
Fieldtrip report	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
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Lab participation and behavior (10%)			100%Pass
Lab report (50%)	60%Pass	60%Pass	60%Pass
Fieldtrip report (40%)	80%Pass	80%Pass	80%Pass

Note: %Pass: Target that % of students having scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Trần Thị Yến Nhi
- Email: ttynhi@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: TECHNOLOGY OF COFFEE, TEA AND COCOA

Course Code: BTFT446IU

1. General information

Course name	- <i>(in English)</i> Technology of Coffee, Tea and Cocoa - <i>(in Vietnamese)</i> : Công nghệ chế biến chè, cà phê và cacao
Course designation	This subject will provide knowledge on following: - Basic concepts of coffee, tea, and cocoa technology - Post-harvest technology of coffee, tea, and cocoa - Manufacturing processes for products from coffee, tea, and cocoa
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	7,8
Person responsible for the module	Assoc. Prof. Le Hong Phu
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ⁴² : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0

⁴² When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1																																			
Course objectives	After studying this course, the students will be able to: - Understand the production and consumption of tea, coffee, and cocoa in Vietnam and in the world. - Understand the biochemical changes after post-harvest, storage, and pre-processing; quality control of raw materials. - Understand the processing of tea, coffee, and cocoa, the biochemical changes during processing of tea, coffee, and cocoa - Understand the product quality standards and assurance.																																			
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Understand post-harvest technology, processing method, quality assurance of coffee, tea, and cocoa.</td></tr><tr><td>Skill</td><td>CLO2. Design appropriate processing procedures for coffee, tea, cocoa-related products CLO3. Communicate well with technical depth</td></tr><tr><td>Attitude</td><td>CLO4. Collaborate well with other students in seminar sessions</td></tr></table>			Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Understand post-harvest technology, processing method, quality assurance of coffee, tea, and cocoa.	Skill	CLO2. Design appropriate processing procedures for coffee, tea, cocoa-related products CLO3. Communicate well with technical depth	Attitude	CLO4. Collaborate well with other students in seminar sessions																									
Competency level	Course learning outcome (CLO)																																			
Knowledge	CLO1. Understand post-harvest technology, processing method, quality assurance of coffee, tea, and cocoa.																																			
Skill	CLO2. Design appropriate processing procedures for coffee, tea, cocoa-related products CLO3. Communicate well with technical depth																																			
Attitude	CLO4. Collaborate well with other students in seminar sessions																																			
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Overview of industrial crops in Vietnam.</td><td>1</td><td>I</td></tr><tr><td>Technology of green coffee bean and fermented coffee bean</td><td>1</td><td>T</td></tr><tr><td>Physical and chemical composition of coffee</td><td>1</td><td>T</td></tr><tr><td>Access the quality and preservation of coffee</td><td>1</td><td>T</td></tr><tr><td>Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)</td><td>1</td><td>T</td></tr><tr><td>Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)</td><td>1</td><td>T</td></tr><tr><td>Chemical composition and characteristics of fresh cocoa; Preservation and post-harvest technology of cocoa.</td><td>1</td><td>T</td></tr><tr><td>Fermentation technology of cocoa; The food products from cocoa</td><td>1</td><td>T</td></tr><tr><td>Seminar</td><td>1</td><td>T, U</td></tr><tr><td>Review</td><td>1</td><td>T, U</td></tr></table>			Topic	Weight	Level	Overview of industrial crops in Vietnam.	1	I	Technology of green coffee bean and fermented coffee bean	1	T	Physical and chemical composition of coffee	1	T	Access the quality and preservation of coffee	1	T	Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)	1	T	Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)	1	T	Chemical composition and characteristics of fresh cocoa; Preservation and post-harvest technology of cocoa.	1	T	Fermentation technology of cocoa; The food products from cocoa	1	T	Seminar	1	T, U	Review	1	T, U
Topic	Weight	Level																																		
Overview of industrial crops in Vietnam.	1	I																																		
Technology of green coffee bean and fermented coffee bean	1	T																																		
Physical and chemical composition of coffee	1	T																																		
Access the quality and preservation of coffee	1	T																																		
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Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)	1	T																																		
Chemical composition and characteristics of fresh cocoa; Preservation and post-harvest technology of cocoa.	1	T																																		
Fermentation technology of cocoa; The food products from cocoa	1	T																																		
Seminar	1	T, U																																		
Review	1	T, U																																		

Examination forms	Written tests
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Textbook: - Wintgens Jean Nicolas (Editor). Coffee: Growing, Processing, Sustainable Production: A Guidebook for Growers, Processors, traders, and Researchers. 2nd updated edition. 2009. Wiley-VCH. Reference books: - Chakraverty, A.S. Mujumdar, H.S. Ramaswamy (editors). Handbook of Postharvest Technology: Cereals, Fruits, Vegetables, Tea, and Spices. 1st Edition, 2003. CRC. - Stephen T. Beckett. 2008. The Science of Chocolate. Royal Society of Chemistry, 2 nd edition. - Ivon Flament. Coffee Flavor Chemistry (Hardcover). 2001. Willey. - Chi-Tang Ho, Jen-Kun Lin, Fereidoon Shahidi. Tea and Tea Products (Nutraceutical Science and Technology): Chemistry and Health-promoting properties. 1st Edition. 2008. CRC Press

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Overview of industrial crops in Vietnam.	1	Midterm exam	Lecture, discussion
2	Technology of green coffee bean and fermented coffee bean	1,2	Midterm exam	Lecture, discussion
3	Physical and chemical composition of coffee	1,2	Midterm exam	Lecture, discussion
4	Access the quality and preservation of coffee	1,2	Midterm exam	Lecture, discussion
5	Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)	1,2	Midterm exam	Lecture, discussion

6	Green & Black tea processing technology; Technology of tea processing by fermentation (yellow tea, red tea)	1,2	Final exam	Lecture, discussion
7	Chemical composition and characteristics of fresh cocoa; Preservation and post-harvest technology of cocoa.	1,2	Final exam	Lecture, discussion
8	Fermentation technology of cocoa; The food products from cocoa	1,2	Final exam	Lecture, discussion
9-10	Midterm			
11	Seminar	2,3,4	Presentation	Presentation, Q&A
12	Review	1,2	Final exam	Lecture, discussion
18-19	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Seminar	1	30
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Seminar (30%)		70%Pass	70%Pass	70%Pass
Midterm exam (30%)	Midterm exam 70%Pass	Midterm exam 70%Pass		
Final exam (40%)	Final exam 70%Pass	Final exam 70%Pass		

Note: %Pass (seminar): % students have scores greater than 80 out of 100.

%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Le Hong Phu
- Email: lhphu@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Practice in Technology of coffee, tea and cocoa

Course Code: BTFT456IU

1. General information

Course name	- <i>(in English)</i> Practice in Technology of Coffee, Tea and Cocoa - <i>(in Vietnamese)</i> Thực hành Công nghệ chế biến chè, cà phê, cacao
Course designation	The course provides knowledge and skills so that students can: – Production and consumption of tea, coffee and cocoa in Vietnam and in the world; – Biochemical changes after post-harvest, storage and pre-processing; Quality control of raw materials; – Processing of tea, coffee, and cocoa, the biochemical changes during processing of tea, coffee and cocoa – Product quality standards and assurance.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the course is taught	7, 8
Person responsible for the course	MSc. Nguyen Thi Huong Giang
Language	English
Relation to curriculum	Compulsory
Teaching methods	lab work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours: 15h for lab works, 15h for field trip Private study including report preparation, specified in hours ¹ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT446IU – Technology of Coffee, Tea and Cocoa - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1																	
Course objectives	– To differentiate Arabica and Robusta – To learn the role of roasting in coffee processing and changes of coffee after roasting – To evaluate the effects of roasting levels and particle sizes on soluble solid contents of coffee – To learn how to qualify tea products – To understand changes inside cocoa bean after fermentation. - To know how to evaluate fermented cocoa bean quality.																	
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Understand product quality standards and assurances</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Identify and evaluate the quality of coffee, tea, cocoa</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Work in group</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Understand product quality standards and assurances		Skill	CLO2. Identify and evaluate the quality of coffee, tea, cocoa		Attitude	CLO3. Work in group				
Competency level	Course learning outcome (CLO)																	
Knowledge	CLO1. Understand product quality standards and assurances																	
Skill	CLO2. Identify and evaluate the quality of coffee, tea, cocoa																	
Attitude	CLO3. Work in group																	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: practical session (5 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Quality Assessment Of Green And Roasted Coffee Beans (Physical Assessment)</td><td>1</td><td>I,T,U</td></tr><tr><td>Quality Assessment Of Tea</td><td>1</td><td>I,T,U</td></tr><tr><td>Post Harvest Cocoa Quality Evaluation</td><td>1</td><td>I,T,U</td></tr><tr><td>Fieldtrip</td><td>3</td><td>U</td></tr></table>			Topic	Weight	Level	Quality Assessment Of Green And Roasted Coffee Beans (Physical Assessment)	1	I,T,U	Quality Assessment Of Tea	1	I,T,U	Post Harvest Cocoa Quality Evaluation	1	I,T,U	Fieldtrip	3	U
Topic	Weight	Level																
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Quality Assessment Of Tea	1	I,T,U																
Post Harvest Cocoa Quality Evaluation	1	I,T,U																
Fieldtrip	3	U																
Examination forms	Labwork report and fieldtrip report																	
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the labwork. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.																	
Reading list	Book 1. Beckett, S. T. (2019). <i>The Science of Chocolate</i>. Royal Society of Chemistry. Franci, M. M. (2024). <i>Steeped: The Chemistry of Tea</i>. Royal Society of Chemistry. 2. The Specialty Coffee Association of America (SCAA). (2014). <i>SCAA Protocols. Cupping Specialty Coffee</i> (Vol. 23Jan2014) References 1. McKeown, P. (2020, July 16). "How To" Guide for Cupping and Evaluating Tea 2. Smilja, Lambert, <i>Cause effect relation between cocoa fermentation,</i>																	

	<i>cut test and sensory notes</i> , 12 June 2003, power point file. 3. Smilja, Lambert, <i>Cocoa quality and factors that influence it</i> , June 2012, Vietnam Workshop.
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1 -7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Quality Assessment Of Green And Roasted Coffee Beans (Physical Assessment)	1,2,3	Lab report	Lecture, labwork
2	Quality Assessment Of Green And Roasted Coffee Beans (Sensory Assessment)			
3	Quality Assessment Of Tea	1,2,3	Lab report	Lecture, labwork
4	Post Harvest Cocoa Quality Evaluation	1,2,3	Lab report	Lecture, labwork
5	Fieldtrip	2,3	Fieldtrip report	Fieldtrip
6	Fieldtrip	2,3	Fieldtrip report	Fieldtrip

4. Assessment plan

Course assessment policy

Methods	(%)
Lab behavior	10
Lab report	50
Fieldtrip report	40
Total	100

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab behavior (10%)			100%Pass
Lab report (50%)	60%Pass	60%Pass	60%Pass
Fieldtrip report (40%)	80%Pass	80%Pass	80%Pass

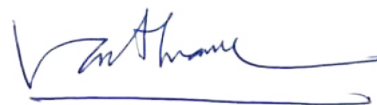
Note: %Pass: Target that % of students having scores greater than 75 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, .../.../ 2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: CONFECTIONERY PRODUCT TECHNOLOGY

Course Code: BTFT447IU

1. General information

Course name	- <i>(in English)</i> Confectionery Product Technology - <i>(in Vietnamese)</i> Công nghệ chế biến bánh kẹo
Course designation	Students taking this course will be provided with integrated concepts in confectionery chemistry, processing, and products. Course materials cover major operations in confectionery processing from raw materials to finished products. Important industrial practices such as plant sanitation and evaluation are also included.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	7,8
Person responsible for the module	Dr. Nguyen Ngoc Thanh Tien
Language	English
Relation to curriculum	Selective
Teaching methods	Lecture, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ⁴³ : 60 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0

⁴³ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1									
Course objectives	After studying this course, the students will be able to: Understand the fundamentals of confectionery processing and underlying technology to produce high-quality products Describe the chemistry, source, roles and properties of raw materials especially sugars and sugar substitutes used in the manufacture of confectionery and candy Describe the basic confectionery products, recipes, and methods for producing a large variety of candy and confection Describe and solve some basic problems related to its sugar-based confections Explain unit operations and steps involved in the production of confectionery products Understand sanitation of confectionery plant and implementation of HACCP in confectionery processing Gain the ability to think critically about problems and issues in confectionery processing									
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Understand the basic principles of producing healthy and safe confectionery products</td></tr><tr><td>Skill</td><td>CLO2. Design appropriate processing procedures or formula for confectionery products CLO3: Communicate well with technical depth</td></tr><tr><td>Attitude</td><td>CLO4. Collaborate well with other students in teamwork</td></tr></table>		Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Understand the basic principles of producing healthy and safe confectionery products	Skill	CLO2. Design appropriate processing procedures or formula for confectionery products CLO3: Communicate well with technical depth	Attitude	CLO4. Collaborate well with other students in teamwork
Competency level	Course learning outcome (CLO)									
Knowledge	CLO1. Understand the basic principles of producing healthy and safe confectionery products									
Skill	CLO2. Design appropriate processing procedures or formula for confectionery products CLO3: Communicate well with technical depth									
Attitude	CLO4. Collaborate well with other students in teamwork									

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight (theory)	Level
	Confectionery production and consumption	0.5	I, T, U
	Chemistry and functionality of confectionery ingredients	1.5	T, U
	Formulation, processing, and characteristics of sugar-based confections	3	T, U
	Formulation, processing, and characteristics of chocolate-based confections	1	T, U
	Formulation, processing, and characteristics of flour-based confections	2	T, U
	Confectionery packaging and quality control	1	T, U
	In-class presentation	1	T, U
Examination forms	Written test, multiple-choice		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: – Hartel, R.W., von Elbe, J.H., Hofberger, R., 2018. Confectionery Science and Technology. Springer Publisher. DOI: 10.1007/978-3-319-61742-8		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				
4					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Confectionery production and consumption Chemistry and functionality of sweeteners	1,2	Quiz & exam	Lecture, discussion
2	Chemistry and functionality of confectionery ingredients: – Water – Fat, oil, emulsifiers	1,2	Quiz & exam	Lecture, discussion

	- Proteins, starch, pectin, gum - Others			
3-5	Formulation, processing, and characteristics of sugar-based confections: - Compressed tablets and lozenges - Hard candy - Fondants and creams - Caramel, fudge, and toffee - Aerated confections - Jellies, gummies, and licorices - Sugar and sugar-free panned confections - Chewing and bubble gum	1,2	Quiz & exam	Lecture, discussion
6	Formulation, processing, and characteristics of chocolate-based confections: - Chocolate panning - Compound coating	1,2	Quiz & exam	Lecture, discussion
7-8	Formulation, processing, and characteristics of flour-based confections: - Pies and muffins - Sweet pastries and croissants - Doughnuts and crackers - Icings and glazes	1,2	Quiz & exam	Lecture, discussion
9-10	Midterm			
11	Confectionery suitable packaging and packing, quality control, and plant sanitation	1,2	Quiz & exam	Lecture, discussion
12	In-class presentation	2,3,4	Presentation, Q&A	Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
In-class presentation	1	30
Midterm exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class presentation (30%)		Presentation 70% Pass	Presentation 70% Pass	Presentation 70% Pass
Midterm exam (30%)	Midterm exam 70% Pass	Midterm exam 70% Pass		
Final exam (40%)	Final exam 70% Pass	Final exam 70% Pass		

Note: %Pass (seminar): % students have scores greater than 80 out of 100.

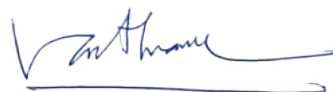
%Pass (exam): % students have scores greater than 60 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: mnttien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology

A handwritten signature in blue ink, appearing to read 'Nhanh' or similar, with a long horizontal stroke extending to the right.

Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

**Course Name: PRACTICE IN CONFECTIONERY PRODUCT
TECHNOLOGY**

Course Code: BTFT448IU

1. General information

Course name	- <i>(in English)</i> Practice in Confectionery Product Technology - <i>(in Vietnamese)</i> Thực hành Công nghệ chế biến bánh kẹo
Course designation	Students taking this course will be provided with integrated concepts in confectionery chemistry, processing, and products. Course materials cover major operations in confectionery processing from raw materials to finished products. Important industrial practices such as plant sanitation and evaluation are also included.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	7,8
Person responsible for the module	Dr. Nguyen Ngoc Thanh Tien
Language	English
Relation to curriculum	Selective
Teaching methods	Lab-work
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours: 15 h for lab-work, 15 h for fieldtrip Private study including examination preparation, specified in hours ⁴⁴ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15

⁴⁴ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT447IU – Confectionery Product Technology - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1																				
Course objectives	After studying this course, the students will be able to: - Describe and distinguish the physicochemical properties of sugars, natural and artificial sweeteners - Understand how sugar solution changes along with rising temperature and classify different stages of sugar cookery - Learn how to make some sugar-based confectionery products (Hard candy and jellies) - Learn how to make some flour-based confectionery products (Cupcake and doughnuts with icings and glazes)																				
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Understand the basic principles of producing healthy and safe confectionery products</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Communicate well with technical depth</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Collaborate well with other students in teamwork</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Understand the basic principles of producing healthy and safe confectionery products		Skill	CLO2. Communicate well with technical depth		Attitude	CLO3. Collaborate well with other students in teamwork							
Competency level	Course learning outcome (CLO)																				
Knowledge	CLO1. Understand the basic principles of producing healthy and safe confectionery products																				
Skill	CLO2. Communicate well with technical depth																				
Attitude	CLO3. Collaborate well with other students in teamwork																				
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: practical session (5 hours) Teaching levels: I (Introduce); T (teach); U (Utilize) <table><tr><th>Topic</th><th>Weight (theory)</th><th>Level</th></tr><tr><td>Physicochemical properties of sugars, natural and artificial sweeteners</td><td>1</td><td>I, T, U</td></tr><tr><td>Different stage of sugar cookery</td><td></td><td></td></tr><tr><td>Making sugar-based confectionery products</td><td>1</td><td>I, T, U</td></tr><tr><td>Making flour-based confectionery products</td><td>1</td><td>I, T, U</td></tr><tr><td>Fieldtrip</td><td>3</td><td>U</td></tr></table>			Topic	Weight (theory)	Level	Physicochemical properties of sugars, natural and artificial sweeteners	1	I, T, U	Different stage of sugar cookery			Making sugar-based confectionery products	1	I, T, U	Making flour-based confectionery products	1	I, T, U	Fieldtrip	3	U
Topic	Weight (theory)	Level																			
Physicochemical properties of sugars, natural and artificial sweeteners	1	I, T, U																			
Different stage of sugar cookery																					
Making sugar-based confectionery products	1	I, T, U																			
Making flour-based confectionery products	1	I, T, U																			
Fieldtrip	3	U																			
Examination forms	Labwork report, fieldtrip report, and in-class presentation																				
Study and examination requirements	Attendance: An attendance of 100 percent is compulsory for the labwork sessions. Students will be assessed on the basis of their labwork participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.																				
Reading list	Textbook: - Hartel, R.W., von Elbe, J.H., Hofberger, R., 2018. Confectionery Science and Technology. Springer Publisher. DOI: 10.1007/978-3-319-61742-8																				

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Physicochemical properties of sugars, natural and artificial sweeteners Different stage of sugar cookery	1,2,3	Lab report	Lecture, labwork
2	Making sugar-based confectionery products – Hard candy – Jellies	1,2,3	Lab report	Lecture, labwork
3	Making flour-based confectionery products – Cupcake – Doughnuts – Icings and glazes	2,3	Lab report	Lecture, labwork
4	Fieldtrip	2,3	Fieldtrip report	Fieldtrip

4. Assessment plan

Course assessment policy

Methods	(%)
Lab participation & behavior	10
Lab report	45
Fieldtrip report	45

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab participation & behavior		60% Pass	60% Pass
Lab report	60% Pass	80% Pass	
Fieldtrip report	80% Pass	80% Pass	

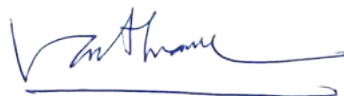
Note: %Pass: % students have scores greater than 70 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Nguyen Ngoc Thanh Tien
- Email: nnttien@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Vegetable Oil and Essential Oil Technology

Course Code: BTFT449IU

1. General information

Course name	- <i>(in English)</i> Vegetable Oil and Essential Oil Technology - <i>(in Vietnamese)</i> Công nghệ dầu và tinh dầu
Course designation	Students taking this course will be provided with integrated concepts in fat and essential oil chemistry, processing and products. Course materials cover major operations in vegetable oil and essential oil processing from raw materials to finished products. Important industrial practices such as quality control and evaluation are also included.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	7, 8
Person responsible for the module	Dr. Dang, Quoc Tuan
Language	English
Relation to curriculum	Selective
Teaching methods	Lectures, Seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 h Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 h for lecture Private study including examination preparation, specified in hours ⁴⁵ : 6 h
Credit points	2 credits (Theory: 2 + Practice: 0) 3.1 ECTS
Number of periods	Theory: 30 Practice: 0

⁴⁵

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): BTFT331IU – Food Unit Operations 1	
Course objectives	By completing this course, the students should be able to: – Understand composition, chemical, physical properties of oil-bearing and essential oil-bearing materials; their production and trade; – Understand chemistry vegetable oils and essential oils; their production and consumption; – Understand the influences of processing conditions on properties of fat and oils – Explain unit operations and steps involved in production of vegetable oils and essential oils. - <i>Define methods to modify fats and oils (hydrogenation, blending, interesterification, emulsification, crystallization) for functional use in foods;</i> - <i>Understand handling and preservation of fats and oils for safety and quality; identify the cause and methods to determine chemical changes in fats and oils during storage, such as oxidative stability.</i>	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Apply principles of engineering, science, and mathematics to identify, formulate, and solve problems in oil seed processing and essential oil production. CLO2. Apply engineering principles in designing and operating systems for oil production with consideration of public health, safety, environmental, and economic factors.
	Skill	CLO3. Communicate efficiently to present technical problems related to oil processing
	Attitude	CLO4. Collaborate well with other students in team work

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topics	Weight	Level
	Introduction; Course Outline Chemistry of Lipids Vegetable oil production and chemistry Oil quality and Nutritional facts	1	I, T
	Raw materials for vegetable oil production: post-harvest aspects Oil-seed production and utilization and trade. Vegetable oil production and consumption Functionality of fats and oils	1	T, U
	Vegetable oil processing. Methods for oil extraction and refining. Vegetable oil refining.	2	T, U
	Soybean, Palm, Rapeseed oils Specialty oils production: sesame, rice-bran, cashew nut,	2	T, U
	Oil, fat modifications; Oil food products	1	T, U
	Chemistry of terpenes; Flavors. Essential oil chemistry	1	T, U
	Essential oil production, utilization and trade	1	T, U
	<i>Seminar: Essential oil extraction processes and equipment</i>	<i>1</i>	<i>U</i>
Examination forms	Multiple-choice questions, written test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: - Vegetable Oils in Food Technology: Composition, Properties and Uses, Second Edition. Frank D. Gunstone (Eds). Blackwell Publishing Ltd.; 2rd Edition, 2011. - A Manual on the Essential Oil Industry. K. Tuley de Silva (Eds). United Nations Industrial Development Organization, 1995. References: - Bailey's Industrial Oil and Fat Products. Fereidoon Shahidi (Editor). Wiley; 7th edition, 2020. Volume 1.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2		4					
3			3				

4					4		
---	--	--	--	--	---	--	--

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction; Course Outline Chemistry of Lipids Vegetable oil production and chemistry Oil quality and Nutritional facts	1,2		Lecture, discussion
2	Raw materials for vegetable oil production: post-harvest aspects Oil-seed production and utilization and trade. Vegetable oil production and consumption Functionality of fats and oils	1,2		Lecture, discussion
3-4	Vegetable oil processing. Methods for oil extraction and refining. Vegetable oil refining.	1,2		Lecture, discussion
5-6	Soybean, Palm, Rapeseed oils Specialty oils production: sesame, rice-bran, cashew nut,	1,2		Lecture, discussion
7	Oil, fat modifications; Oil food products	1,2		Lecture, discussion
8	Chemistry of terpenes; Flavors. Essential oil chemistry	1,2		Lecture, discussion
9-10	Midterm		Exam	
11	Essential oil production, utilization and trade	1,2		Lecture, discussion
12	Seminar for topic presentation: Essential oil extraction processes and equipment	3,4		In-class presentation and discussion
17-18	Reserve week and Final exam		Exam	

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
In-class presentation; Class attendance	1	20
Mid-term exam	1	40
Final exam	1	40
Total		100

Course assessment plan

Assessment Type	CLO1, CLO2	CLO3	CLO4
Topic literature search and report; Class attendance (15%)		Presentation 70%Pass	Presentation 70%Pass

Midterm exam (40%)	Midterm exam 50%Pass		
Final exam (45%)	Final exam 50%Pass		

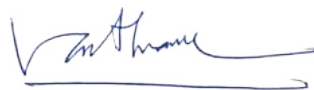
*Note: %Pass (Quiz, exam): % students have scores greater than 50 out of 100.
 %Pass (Presentation): % students have scores greater than 70 out of 100.*

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqtuan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Practice in Vegetable Oil and Essential Oil Technology

Course Code: BTFT459IU

1. General information

Course name	- <i>(in English)</i> Practice in Vegetable Oil and Essential Oil Technology - <i>(in Vietnamese)</i> Thực hành Công nghệ dầu và tinh dầu
Course designation	Students taking this course will be provided with integrated concepts in fat and essential oil chemistry, microbiology, processing and products. Important industrial practices such as oil extraction and oil product preparation are included.
Course type	☐ <i>General knowledge</i> ☐ <i>Fundamental</i> ☒ <i>Specialized knowledge</i> ☐ <i>Internship/Project/Thesis</i> ☐ <i>Others:</i>
Semester(s) in which the module is taught	7, 8
Person responsible for the module	Dr. Dang, Quoc Tuan
Language	English
Relation to curriculum	Selective
Teaching methods	Lectures, Seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 h Contact hours: 15hrs for labwork, 15 hrs for field trip Private study including examination preparation, specified in hours ¹ : 30 h
Credit points	1 credit (Theory: 0 + Practice: 1) 2 ECTS
Number of periods	Theory: 0 Practice: 15
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): BTFT449IU – Vegetable oil and essential oil technology - Previous course (Course code – Course name): BTFT351IU – Practice in Food Unit Operations 1
Course objectives	After studying this course, the students will be able to: ☐ Understand how to prepare certain oil-related products and evaluate their quality. ☐ Understand a certain oil processing in industry.

Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Have knowledge on oil processing and quality evaluation	
	Skill	CLO2. Analyze techniques and interpreting the results	
	Attitude	CLO3. Work in group	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: Practical session (5 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topics	Weight	Level
	Essential oil steam distillation. Quality evaluation	1.5	I, T, U
	Food emulsion (salad dressing) preparation. Quality evaluation.	1.5	I, T, U
	Visiting oil production factories	3	I, T, U
Examination forms	Reports		
Study and examination requirements	Attendance: A minimum attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: - Lab Manual References: Vegetable Oils in Food Technology: Composition, Properties and Uses, Second Edition. Frank D. Gunstone (Eds). Blackwell Publishing Ltd.; 2nd Edition, 2011. A Manual on the Essential Oil Industry. K. Tuley de Silva (Eds). United Nations Industrial Development Organization, 1995.		

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1	4						
2						4	
3					4		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Steam distillation of essential oil	1,2,3	Lab report	Lab work

Week	Topic	CLO	Assessments	Learning activities
2	Preparation of food oil emulsion-salad dressing production	1,2,3	Lab report	Lab work
2	Visiting vegetable oil factories	2,3	Field trip report	Fieldtrip

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Lab/fieldtrip participation and behavior	3	10
Lab report	1	50
Fieldtrip report	1	40
Total		100

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Lab participation and behavior (10%)			100%Pass
Lab report (50%)	60%Pass	60%Pass	60%Pass
Fieldtrip report (40%)	80%Pass	80%Pass	80%Pass

Note: %Pass (Quiz, exam): % students have scores greater than 50 out of 100.

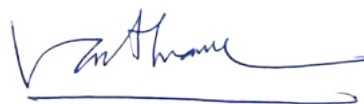
%Pass (Presentation): % students have scores greater than 70 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqquan@hcmiu.edu.vn

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Chemical and Environmental Engineering**

COURSE SYLLABUS

Course Name: ENGINEERING DRAWING

(Vẽ kỹ thuật)

Course Code: ENEE1001IU

1. General information

Course name	- (in English) Engineering Drawing - (in Vietnamese) Vẽ kỹ thuật						
Course designation	This subject aims at providing the ability to understand technical ideas on the technical scheme, the skill to construct the engineering drawing compliance with TCVN and ISO by hand and by using AutoCAD software. The course provides the knowledge for using geometrical construction with drawing instruments and AutoCAD software, the standard of presentation of engineering drawing; base, standard, constructing and the skill of analysis, understanding drawing representation. <i>Môn học này nhằm cung cấp khả năng hiểu các ý tưởng kỹ thuật về sơ đồ kỹ thuật, kỹ năng xây dựng bản vẽ kỹ thuật tuân thủ TCVN và ISO bằng tay và sử dụng phần mềm AutoCAD. Khóa học cung cấp kiến thức về việc sử dụng kỹ thuật hình học với các công cụ vẽ và phần mềm AutoCAD, tiêu chuẩn trình bày bản vẽ kỹ thuật; cơ sở, tiêu chuẩn, xây dựng và kỹ năng phân tích, hiểu biểu đồ vẽ.</i>						
Teaching schedule	☐ Year 1 ☐ Year 2 ☐ Year 3 ☐ Year 4 ☒ Year 5 ☐ Semester 1 ☐ Semester 2 ☐ Summer						
Person In-Charge	Dr. Pham Ngoc, pngoc@hcmiu.edu.vn Template: (Name in Vietnamese order), (Email)						
Language	English						
Relation to curriculum	☒ General ☐ Fundamental ☐ Specialization ☐ Project/Internship/Thesis				☒ Compulsory ☐ Elective		
Teaching methods	☒ Lecture ☐ Lesson ☐ Project ☐ Seminar Others, please specify:						
Workload			Lecture	Lab	Project	Internship	Thesis
		<i>Credit</i>	2	1			
Contact hours		50	25	25	0	0	0
Self-Study hours		90	60	30	0	0	0
Total workload		140	85	55	0	0	0

Credit points	3																																		
Requirements for taking the course	☒ None ☐ Prerequisite course: <i>(Please specify course ID & course title, if any)</i> ☐ Parallel course: <i>(Please specify course ID & course title, if any)</i> ☐ Previous course: <i>(Please specify course ID & course title, if any)</i>																																		
Course objectives	The aim of this course is to - Use drawing instruments to sketch by hand and to construct geometry on engineering drawings; - Apply the standard of engineering drawings instruments to present the drawing compliance with TCVN and ISO; - Present basic geometrical features and solve some basic problems for these features and specify the properties and relationship of geometrical features and the position and the true size of geometrical features; - Interpret the type of presentations compliance with TCVN and ISO, and orthographic projections, auxiliary views, partial views, and local views - Construct the engineering drawing to present some types of model and design the AutoCAD software to draw the drawing in compliance with TCVN and ISO and the 2D drawings.																																		
Course learning outcomes	Upon the successful completion of this course, students will be able to: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Understand drawing instruments to sketch by hand, and construct geometry on engineering drawings</td></tr><tr><td>Skill</td><td>CLO2. Apply the standard of engineering drawings and instruments to present the drawing compliance with TCVN and ISO, and apply knowledge of orthogonal projections method to present basic geometrical features and solve some basic problems for these features. CLO3. Apply basic drawing commands to construct the engineering drawing compliance with TCVN and ISO, and the 2D drawings by the AutoCAD software.</td></tr><tr><td>Attitude</td><td>CLO4. Work independently and professionally</td></tr></table>			Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Understand drawing instruments to sketch by hand, and construct geometry on engineering drawings	Skill	CLO2. Apply the standard of engineering drawings and instruments to present the drawing compliance with TCVN and ISO, and apply knowledge of orthogonal projections method to present basic geometrical features and solve some basic problems for these features. CLO3. Apply basic drawing commands to construct the engineering drawing compliance with TCVN and ISO, and the 2D drawings by the AutoCAD software.	Attitude	CLO4. Work independently and professionally																								
Competency level	Course learning outcome (CLO)																																		
Knowledge	CLO1. Understand drawing instruments to sketch by hand, and construct geometry on engineering drawings																																		
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Attitude	CLO4. Work independently and professionally																																		
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> <u>Weight</u> : lecture session (2.5 hours) <u>Teaching levels</u> : I (Introduce); T (Teach); U (Utilize) <table><tr><th>No.</th><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>1</td><td>Introduction to Engineering Drawing</td><td>1</td><td>I, T</td></tr><tr><td>2</td><td>Orthographic Projections</td><td>1</td><td>T, U</td></tr><tr><td>3</td><td>Pictorial Drawings</td><td>1</td><td>T, U</td></tr><tr><td>4</td><td>Dimensioning</td><td>1</td><td>T, U</td></tr><tr><td>5</td><td>Sectioning</td><td>1</td><td>T, U</td></tr><tr><td>6</td><td>Introduction and Install AutoCAD software Practice drawing commands</td><td>3</td><td>I, U</td></tr><tr><td>7</td><td>Practice modifying commands</td><td>2</td><td>T, U</td></tr></table>			No.	Topic	Weight	Level	1	Introduction to Engineering Drawing	1	I, T	2	Orthographic Projections	1	T, U	3	Pictorial Drawings	1	T, U	4	Dimensioning	1	T, U	5	Sectioning	1	T, U	6	Introduction and Install AutoCAD software Practice drawing commands	3	I, U	7	Practice modifying commands	2	T, U
No.	Topic	Weight	Level																																
1	Introduction to Engineering Drawing	1	I, T																																
2	Orthographic Projections	1	T, U																																
3	Pictorial Drawings	1	T, U																																
4	Dimensioning	1	T, U																																
5	Sectioning	1	T, U																																
6	Introduction and Install AutoCAD software Practice drawing commands	3	I, U																																
7	Practice modifying commands	2	T, U																																

	8	Practice layer and printing management	1	T, U
	9	Introduction to environmental drawings Conceptual drawings of a water treatment plant, air treatment plant, and solid waste treatment plant.	2	I, U
	10	Practice an environmental drawings	2	T, U
Examination forms	☐ Multiple-choice questions ☐ Oral examination ☐ Report ☐ Written examination ☐ Presentation ☒ Others, please specify: ☐ Assignments Constructed-response test, Practice on the Computer			
Other requirements	<u>Attendance:</u> A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. <u>Assignments/Examination:</u> Students must have more than 50/100 points overall to pass this course.			
Reading list	I. Textbooks [1] Kirstie Plantenberg (2010). Engineering Graphic Essentials, Fourth Edition, SDC Publications [2] Gary R Bertoline (2008). Introduction to Graphics Communication for Engineers, Fourth Edition, Mc Graw-Hill Higher Education. [3] Robert A. Corbitt (1999). Standard handbook of Environmental Engineering, Second Edition, The McGraw-Hill. II. References [4] Trần Hữu Quế (2009). Vẽ Kỹ Thuật Cơ Khí Tập 1, NXB Giáo Dục [5] Nguyễn Đình Điện (2005). Hình Học Hoạ Hình, NXB Giáo Dục			

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Intended Learning Outcomes (ILO) (1-7) is shown in the following table:

CLOs		ILOs						
		Knowledge		Skills				Attitudes
		1	2	3	4	5	6	7
Knowledge (Level: 1-6)	1	2	1					
Skills (Level: 1-7)	2			3	3			
	3			3	3	3	3	
Attitudes (Level: 1-5)	4							3
Contribution of CLOs to ILOs								
Bloom's Taxonomy	AVE	2.0	1.0	3.0	3.0	3.0	3.0	3.0
L,M,H conversion*		L	L	M	M	M	M	M

3. Planned learning activities and teaching methods

No .	Week	Topic	CLO	Assessments	Learning activities	Resources
5.	1	Introduction to Engineering Drawing	1,2	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion;	[1] 1 [2] 1
6.	2	Orthographic Projections	1,2	Attendance Q&A In-class practice	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] 2 [2] 2
7.	3	Pictorial Drawings	1,2	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] 3 [2] 3
8.	4	Dimensioning	1,2	Attendance Q&A In-class practice	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] 4 [2] 4
9.	5	Sectioning	1,2	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] 5 [2] 5
10.	6	Introduction and Install AutoCAD software Practice drawing commands	3,4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion;	[4] 1 [5] 1

No .	Week	Topic	CLO	Assessments	Learning activities	Resources
11.	7-8	Practice drawing commands	3,4	Attendance Q&A In-class practice	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[4] 2 [5] 2
12.	9-10	Midterm examination		Writing		
13.	11	Practice drawing commands	3,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[4] 3 [5] 3
14.	12	Practice dimensioning commands	3,4	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[4] 4 [5] 4
15.	13	Practice layer and printing management	3,4	Attendance Q&A Homework 7	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[4] 5 [5] 5
16.	14	Introduction to environmental drawings	3,4	Attendance Q&A In-class practice	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[3] 1 [4] 4 [5] 4
17.	15	Conceptual drawings of a water treatment plant, air treatment plant, and solid waste treatment plant.	3,4	Attendance Q&A Homework 8	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[3] 2 [4] 4 [5] 4

No .	Week	Topic	CLO	Assessments	Learning activities	Resources
18.	16-17	Practice an environmental drawings	3,4	Attendance In-class practice	Reading materials before class; Doing the lecture; Discussion;	[3] 3 [4] 4 [5] 4
19.	18	Practice an environmental drawings	3,4	Attendance In-class practice	Reading materials before class; Doing the presentation; Discussion;	[3] 3 [4] 4 [5] 4
20.	19-20	Final examination		Practice on computer		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Progress assessment (PA, 20%)				
Class attendance (50% of PA)				Attended 80%Pass
In-class activity: Discussion and doing Quizzes in class (25% of PA)				Participated in class Q&A 60%Pass
Homeworks (25% of PA)				HW1-8, Submitted 80%Pass
Midterm exam (Mid, 30%)	Q1-2, 60%Pass	Q3-4 60%Pass		
Final exam (Fin, 50%)		Q1-2 60%Pass	Q3-5 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional): No

6. Revision Date: May 20, 2023

(*) Intended Learning Outcomes

No .	Program Learning Outcomes Graduates of Chemical Engineering program will attain
Knowledge	
1	Identify, formulate, and solve complex chemical engineering problems by applying principles of engineering, science, and mathematics
2	Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
Skills	

3	Communicate (in English) effectively with a range of audiences
4	Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
5	Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
6	Acquire and apply new knowledge as needed, using appropriate learning strategies.
<i>Attitude</i>	
7	Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

For administrative purposes

REVISION HISTORY AND NOTES

No.	Session/Page	Content of revision	Date of revision	Revised by
1				

5. Course coordinator/Lecturer

- School/Department:
- Lecturer:
- Email:

Ho Chi Minh City, .../.../2025

HEAD/DEAN OF DEPARTMENT/SCHOOL

(Signature)



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: Molecular Genetics

Course Code: BT217IU

1. General information

Course name	- <i>(in English)</i> Molecular Genetics - <i>(in Vietnamese)</i> Di truyền phân tử
Course designation	The course includes: (i) Mechanisms of gene control and nature of mutation in both prokaryotes and eukaryotes; (ii) Application of key molecular genetic techniques in the laboratory and in practice; (iii) Genomics and proteomics studies; (iv) QTL analysis for quantitative traits; (v) Introduction to bioinformatics; (vi) Evolution at molecular level.
Semester(s) in which the course is taught	<i>Semesters 1 & 2</i>
Person responsible for the course	<i>Dr. Nguyen Minh Thanh</i>
Language	English
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>Lecture, quiz, project, seminar.</i>
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 Private study including examination preparation, specified in hours: 90
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: 45 Practice: 0
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None
Course objectives	This course introduces the integration of classical genetics and modern molecular biology and its applications

Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Gain knowledge of gene regulation, effects of mutations, the new disciplines of genomics, proteomics and bioinformatics. CLO2. Be familiar with the most common techniques in molecular genetics. CLO3. Understand molecular genetic analysis of simple and complex phenotypic traits, genome, transcriptome and evolution.	
	Skill	CLO4. Apply the basic bioinformatics in molecular genetics.	
	Attitude	CLO5. Be aware of the power of molecular genetics to answer critical questions about life and highlight how this knowledge can be applied to addressing problems in society.	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Introduction to molecular genetics	1	I
	Regulation of gene expression in prokaryotes & eukaryotes	2	T
	Transposable genetic elements	1	I, T
	Mutations & DNA repair	1	T
	Genetics of bacteria & their viruses	1	T
	The techniques of molecular genetics	1	T, U
	Genetic markers & their application	1	I, T
	Genomics and Proteomics	1	I, T
	QTL analysis	1	T
	Molecular evolution	1	T
	Application of molecular genetics	2	T, U
	Applied bioinformatics for molecular genetics	2	T, U
Examination forms	Multiple-choice questions, short-answer questions, true-false questions, matching questions, fill-in questions		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		
Reading list	1. Pierce, B.A., 2012. Genetics: A Conceptual Approach, 4th Edition. W.H. Freeman and Comp., New York.		

	2. Griffiths, A.J.F., Wessler, S.R., Carroll, S.B., Doebley, J., 2015. Introduction to Genetic Analysis, 11th Edition. W.H. Freeman and Comp., New York. 3. Verma, A.S. & Singh, A., 2020. Animal Biotechnology: Models in Discovery and Translation, 2nd Edition. Academic Press is an imprint of Elsevier. 4. Choudhuri, S., 2014. Bioinformatics for Beginners: Genes, Genomes, Molecular Evolution, Databases & Analytical Tools. Elsevier Inc.
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-5) and Program/Student Learning Outcomes (SLO) (1-8) is shown in the following table:

SLO	1	2	3	4	5	6	7	8
CLO 1						x		
CLO 2				x				
CLO 3		x						
CLO 4							x	
CLO 5								x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to molecular genetics	1	Quiz 1	Lecture, homework quiz	[1]
2&3	Regulation of gene expression in prokaryotes & eukaryotes	1	Quiz 2	Lecture, homework quiz	[1], [2]
4	Transposable genetic elements	1	Quiz 3	Lecture, homework quiz	[1], [2]
5	Mutations & DNA repair	1	Quiz 4	Lecture, homework quiz	[1], [2]
6	Genetics of bacteria & their viruses	1, 2	Quiz 5	Lecture, homework quiz	[1], [2]
7	The techniques of molecular genetics	1, 2	Quiz 6	Lecture, homework quiz	[1], [2]
8	Genetic markers & their application	3		Lecture, Discussion	
9-10	Midterm exam				
11	Genomics and Proteomics	1, 3	Quiz 7	Lecture,	[1], [2]
12	QTL analysis	3		Lecture, Discussion	[1], [2]
13	Molecular evolution	3		Lecture, Discussion	[1], [2]
14&15	Application of molecular genetics	4, 5		Presentation, Group work	[3]

16&17	Applied bioinformatics for molecular genetics	4	Assignment	Computer lab, Group work	[4]
19-20	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Quiz, presentation, assignment (30%)	Quiz 1, 2, 3, 4, 5, 6 60% Pass	Quiz 5, 6 60% Pass	Quiz 7 60% Pass	Presentation 60% Pass	Presentation, assignment 60% Pass
Midterm exam (30%)	x 60 %Pass	x 60% Pass			
Final exam (40%)			x 60% Pass	x 60% Pass	x 60% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Course coordinator/Lecturer

- School/Department:
- Lecturer:
- Email:

Ho Chi Minh City, / / 2025

Dean of School of Biotechnology



Nguyễn Văn Thuận



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Applied Chemistry
School of Biotechnology

COURSE SYLLABUS

Course Name: PHYSICAL CHEMISTRY

Course Code: BT405IU

1. General information

Course name	- (in English) Physical Chemistry - (in Vietnamese) Hóa lý
Course designation	On campus course
Semester(s) in which the course is taught	3
Person responsible for the course	Assoc. Prof. Nguyen Tan Khoi
Language	English
Relation to curriculum	Compulsory
Teaching methods	lecture, lesson.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: Contact hours: lecture: 45 credit hours; self-study: 90 hours Private study including examination preparation, specified in hours:
Credit points	3 credits (Theory: 3 + Practice: 0) 4.6 ECTS
Number of periods	Theory: Practice:
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): None
Course objectives	Provides students with knowledge on Diffusion, Effusion, collision volume, mean free path. Equilibrium Conditions, Partial Molar Quantities. Solutions, Ideal Solutions & Colligative Properties, Non-Ideal Solutions, Ionic Solutions ; properties of gases. Pressure, ideal gas law; Kinetic Molecular theory and its derivation. Molecular speed measurements Zeroth Law of Thermodynamics

	and Thermometry, First Law of Thermodynamics. Thermochemistry, Second Law of Thermodynamics & Entropy. Chemical Equilibrium, Electrochemistry, Phase Equilibria, Gravitational, Electric, Magnetic, Surface Work; Kinetics. • Analyzing the underlying working mechanism of physical chemical phenomena; Oral presentation; Teamwork and problem-solving.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Understanding of concepts, key points of physical chemical phenomena CLO2. Able to distinguish different mechanisms of physical chemical phenomena.
	Skill	CLO3. Know how to analytically break a phenomena down into mathematical models. CLO4. Know how to design an experiment to measure a desired quantity.
	Attitude	CLO5. Able to solve practical problems and analyze the solutions.
Content	Lecture 1: properties of gases. (CLO1, CLO2) Lecture 2: (CLO1, CLO3, CLO4) Properties of liquids and solids. Lecture 3: (CLO1, CLO3, CLO4) Zeroth Law of Thermodynamics and Thermometry, First Law of Thermodynamics. Lecture 4: (CLO1, CLO2, CLO3, CLO4) Thermochemistry, Second Law of Thermodynamics & Entropy Lecture 5: (CLO1, CLO2, CLO3, CLO4) Third Law of Thermodynamics Lecture 6: (CLO1, CLO2) Legendre Transforms & the Gibbs Function, Maxwell Relations Lecture 7, 8: Macromolecules in solution: Gibbs-Duhem equation. Molal osmotic coefficients. (CLO1, CLO2, CLO3) Lecture 9, 10: (CLO1, CLO2, CLO4, CLO5) Equilibrium Conditions, Partial Molar Quantities. Lecture 11: (CLO1, CLO2) Solutions, Ideal Solutions & Colligative Properties, Non-Ideal Solutions, Ionic Solutions. Lecture 12, 13: (CLO1, CLO2, CLO5) Chemical Equilibrium, Electrochemistry, Phase Equilibria, Gravitational, Electric, Magnetic, Surface Work. Lecture 14: Kinetics. (CLO5)	
Examination forms	Written exams (Midterm+Final)	
Study and examination requirements	Students are expected to spend at least 8 hours per week studying this course. This time should be made up of reading, working on exercises and problems, group assignments and attending class lectures and tutorials. University regulations indicate that students may be refused	

	to take final assessment if they attend less than 80% of scheduled classes. Regular attendance is essential for successful performance and learning in this course, particular in the view of the interactive teaching and learning approach adopted.
Reading list	Textbooks: Physical Chemistry, 9th Ed.; Peter Atkins and Julio de Paula; Freeman; 2009 References: Physical Chemistry, 3rd Ed.; Gilbert Castellan; Addison-Wesley; 1983. 2. Physical Chemistry, 2nd Ed; J. Philip Bromberg; Allyn & Bacon; 1984. 3. Physical Chemistry, 6th Ed.; Ira N. Levine; McGraw Hill; 2009

2.Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-5) and Intended Learning Outcomes (ILO) (1-8) is shown in the following table:

	ILO							
CLO	1	2	3	4	5	6	7	8
1	M							
2			M					
3	M		M					
4	M					H	M	
5						H	M	

3.Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Lecture 1: properties of gases.	CLO1 , CLO2	5%	-Lecture presentation -Group forming. -Class discussion - Read book & lecture 2.	
2	Lecture 2: Properties of liquids and solids.	CLO1 , CLO3 , CLO4	5%	-Lecture presentation -Class discussion - Read book & lecture 3.	
3	Lecture 3: Zeroth Law of Thermodynamics and Thermometry, First Law of Thermodynamics.	CLO1 , CLO3 , CLO4	10%	-Lecture presentation -Class discussion	

				- Read book & lecture 4.	
4	Lecture 4: Thermochemistry, Second Law of Thermodynamics & Entropy	CLO1 , CLO2 , CLO3 , CLO4	10%	-Class discussion - Read book & lecture 5.	
5	Lecture 5: Third Law of Thermodynamics	CLO1 , CLO2	5%	-Lecture presentation - Class discussion - Read book & lecture 6.	
6	Lecture 6: Legendre Transforms & the Gibbs Function, Maxwell Relations	CLO1 , CLO2	5%	-Lecture presentation -Class discussion - Read book & lecture 7	
7,8	Lecture 7, 8: Macromolecules in solution: Gibbs-Duhem equation. Molal osmotic coefficients.	CLO1 , CLO2 , CLO3	10%	Lecture presentation -Class discussion - Read book & lecture 9	
9	Midterm				
10, 11	Lecture 9, 10: Equilibrium Conditions, Partial Molar Quantities.	CLO1 , CLO2	15%	-Lecture presentation -Class discussion - Read book & lecture 11.	
12, 13	Lecture 11: Solutions, Ideal Solutions & Colligative Properties, Non-Ideal Solutions, Ionic Solutions.	CLO1 , CLO2 , CLO4 , CLO5	15%	-Lecture presentation - Class discussion - Read book & lecture 12.	
14	Lecture 12, 13: Chemical Equilibrium, Electrochemistry, Phase Equilibria, Gravitational, Electric, Magnetic, Surface Work.	CLO1 , CLO2	10%	-Lecture presentation -Class discussion	
15	Lecture 14 : Kinetics.	CLO1 , CLO2 , CLO5	10%	-Lecture presentation -Class discussion	

17	Final exam				
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4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Written exam (70%)	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass
Quiz (20%)	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass
Class participation (10%)	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology
- Lecturer:
- Email:

DEAN OF SCHOOL OF BIOTECHNOLOGY



Assoc. Prof. NGUYEN VAN THUAN



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY

School of Chemical and Environmental
Engineering

COURSE SYLLABUS

Course Name: MASS TRANSFER OPERATIONS

(Quá trình và thiết bị truyền khối)

Course Code: CHE2041IU

1. General information

Course name	- (in English) Mass Transfer Operations - (in Vietnamese) Quá trình và thiết bị truyền khối				
Course designation	Mass transfer processes are vital in chemical engineering because it is the method to separate or purify components from their mixtures. Through this course, students learn the principles of mass transfer and their application. The course integrates fluid dynamics and thermodynamics in order to develop rate expressions for mass transfer in multiphase and multicomponent systems. Based on Fick's law and phase equilibrium rules, the course provides knowledge of designing large scale separation processes such as distillation, extraction, drying, stripping and absorption to selectively obtain or remove specific components from mixtures. <i>Quá trình truyền khối lượng rất quan trọng trong kỹ thuật hóa học vì nó là phương pháp để tách hoặc làm sạch các thành phần trong hỗn hợp. Qua khóa học này, sinh viên sẽ học về nguyên lý truyền khối lượng và ứng dụng của nó. Khóa học tích hợp động lực học chất lưu và nhiệt động học để phát triển biểu thức tốc độ cho quá trình truyền khối lượng trong hệ thống đa pha và đa thành phần. Dựa trên định luật Fick và quy tắc cân bằng pha, khóa học cung cấp kiến thức về thiết kế các quy trình tách lớn như chưng cất, chiết xuất, làm khô, tách và hấp thụ để lựa chọn hoặc loại bỏ các thành phần cụ thể từ hỗn hợp.</i>				
Teaching schedule	☒ Year 1 ☐ Year 2 ☒ Year 3 ☐ Year 4 ☐ Year 5 ☐ Semester 1 ☒ Semester 2 ☐ Summer				
Person In-Charge	Dr. Doan Hoai Linh, dhlinh@hcmiu.edu.vn Template: (Name in Vietnamese order), (Email)				
Language	English				
Relation to curriculum	☐ General ☐ Fundamental ☐ Specialization ☐ Project/Internship/Thesis		☒ Compulsory ☐ Elective		
Teaching methods	☒ Lecture ☐ Lesson ☐ Project ☐ Seminar				

	Others, please specify:						
Workload			Lecture	Lab	Project	Internship	Thesis
		<i>Credit</i>	3				
	Contact hours	37.5	37.5	0	0	0	0
	Self-Study hours	90	90	0	0	0	0
	Total workload	127.5	127.5	0	0	0	0
Credit points	3						
Requirements for taking the course	☐ None ☐ Prerequisite course: <i>(Please specify course ID & course title, if any)</i> ☐ Parallel course: <i>(Please specify course ID & course title, if any)</i> ☒ Previous course: <i>(Please specify course ID & course title, if any)</i> <i>CHE2051IU Heat Transfer Operations, CHE1031IU Physical Chemistry I</i>						
Course objectives	- Understanding the underlying thermodynamics and mass transfer process principles consisted of molecular diffusion, diffusion coefficient, mass transfer coefficient, and phase equilibrium. - Understanding the principles of mass transfer equipment which applies for distillation, adsorption, extraction, drying and other mass transfer processes... - Analyzing and evaluating the structure and the operation of mass transfer equipment. - Solve practical mass transfer problems						
Course learning outcomes	Upon the successful completion of this course, students will be able to:						
	Competency level		Course learning outcome (CLO)				
	Knowledge		CLO1. When given a complex mass transfer problem, able to identify, formulate and solve problems by applying Fick's law, molecular diffusion, adsorption, absorption, and other mass transfer principles.				
	Skill		CLO2. Able to solve adsorption and absorption problems via case studies. CLO3. Able to design individually and in groups distillation, extraction, stripping tower, drier a by analyzing given data and formulating the practical mass transfer problems via case studies.				
	Attitude		CLO4. Understanding of professional and ethical responsibility, a recognition of the need for, and an ability to engage in life-long learning				
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> <u>Weight:</u> lecture session (2.5 hours) <u>Teaching levels:</u> I (Introduce); T (Teach); U (Utilize)						
	No.	Topic	Weight			Leve	
	1	Introduction	1			I,T,U	

	2	Diffusion (Fick's 1 st and 2 nd law)	5	T,U
	3	Adsorption and its applications	1	T,U
	4	Absorption and its applications	4	T,U
	5	Distillation, extraction process, phase diagram	4	T,U
Examination forms	☐ Multiple-choice questions ☐ Oral examination ☐ Report ☒ Written examination ☒ Presentation ☐ Others, please specify: ☐ Assignments			
Other requirements	<u>Attendance:</u> A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. <u>Assignments/Examination:</u> Students must have more than 50/100 points overall to pass this course.			
Reading list	I. Textbooks [1] Robert, E. Treybal, "Mass Tranper Operations, Mac. Graw Hill, Book Company, 1968 [2] J. R. Welty, C. E. Wicks, R. E. Wilson, Fundamentales of Momentum, Heat and Mass Transfer, Joln Wiley, 1973. [3] Fundamentals of Heat & Mass Transfer by Incropera, DeWitt, Bergman, and Lavine – 6th Edition			

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Intended Learning Outcomes (ILO) (1-7) is shown in the following table:

CLOs		ILOs						
		Knowledge		Skills				Attitudes
		1	2	3	4	5	6	7
Knowledge (Level: 1-6)	1	5	3				3	
Skills (Level: 1-7)	2		4	3	3	4		
	3		4	3	3	4	3	
Attitudes (Level: 1-5)	4							3
Contribution of CLOs to ILOs								
Bloom's Taxonomy	AVE	5.0	3.7	3.0	3.0	4.0	3.0	3.0
L,M,H conversion*		H	M	M	M	M	M	M

3. Planned learning activities and teaching methods

No .	Week	Topic	C L O	Assessments	Learning activities	Resource s
1.	1	Introduction to Operations Research: definition, classification.	1	Quiz 1	Lecture, Discussion,	[1],[2],[3]

No .	Week	Topic	C L O	Assessments	Learning activities	Resources
		Basic concepts of phase equilibrium, phase contents, types of concentration and conversion equations.			Inclass-Quiz	
2.	2-6	Molecular diffusion and Fick's law (1st and 2nd law). Equation of continuity Steady-state molecular diffusion in laminar flow Molecular diffusion in gases Steady state diffusion of A through non-diffusing B Steady-steady equimolal counter diffusion Steady-state diffusion in multicomponent mixtures Diffusivity of gases Molecular diffusion in liquids Stokes-Einstein Equation Dilute solutions of nonelectrolytes Solutes in aqueous solutions Steady-state binary molecular diffusion in porous liquids Steady-state molecular diffusion through variable area Mass transfer coefficient Steady and quasi-steady mass transfer Mass-transfer controlled by external diffusion resistance Diffusion controlled by external convection Respiration of a spherical cell Relationship between reaction kinetics and mass transfer Diffusion through a film within which there is a homogeneous reaction Convective mass transfer Mass transfer in falling film Laminar falling film in an inclined surface	1	Quiz 2-6	Lecture, Inclass-Quiz	[1],[2],[3]
3.	7-8	Fundamentals of adsorption process Adsorption isotherm model: Langmuir, Freundlich, BET, Dubinin-Radushkevich, Tempkin	2	Quiz 7-8	Lecture, Inclass-Quiz	[1],[2],[3]

No .	Week	Topic	C L O	Assessments	Learning activities	Resources
		and Pyzhev, Harkins-Jura, Halsey, Henderson. Adsorption rate Intraparticle diffusion Boyd's adsorption mass transfer rate controlling step Percent cumulative drug release The relationship between adsorption capacity, entrapment efficiency and thermodynamics properties (Gibbs free energy, entropy, enthalpy)				
4.	9	Midterm				
5.	11-13	Gas-liquid absorption and stripping processes. Calculation of the minimum amount of solvent to absorb a component from a gas stream into a liquid. Designing an absorption tower. Kremser equations Packed tower, tray absorber (counter-current multi-stage absorption), absorption with chemical reaction (irreversible first-order reaction, irreversible nth order reaction) The relationship between mass transfer and thermodynamics, and solubilities Determining mass transfer properties from solubilities experimentally	3, 4	Presentation, Group problems 1	Lecture, Group work, Presentation, assignment, design problems	[1],[2],[3]
6.	14-16	Binary mixture: classification and phase equilibrium graphs (Txy, Pxy, xy) Distillation process: definition, basic principles in operation of a distillation tower. McCabe Thiele method to build operation lines and number of theoretical mass transfer stages of a distillation process for a binary mixture. Distillation tower design. Phase diagram (triangle diagram) for a three-component mixture: how to construct and how to use.	3, 4	Presentation, Group problems 2	Lecture, Group work, Presentation, assignment, design problems	[1],[2],[3]

No .	Week	Topic	C L O	Assessments	Learning activities	Resources
		Extraction processes: basic principles in operation and calculation. Phase diagram (triangle diagram) for a three-component mixture: how to construct and how to use. Extraction processes: basic principles in operation and calculation.				
7.	17	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Quiz (10%)	Quiz 1-8 50% pass	Quiz 1-8 50% pass		
Presentation (10%)			Presentation 50% pass	Presentation 50% pass
Design Problems (10%)			Group problems 50% pass	Group problems 50% pass
Midterm Exam (30%)	Q1-10 50% pass	Q1-10 50% pass		
Final Exam (40%)	Q1-8 50% pass	Q1-8 50% pass	Q1-8 50% pass	Q1-8 50% pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional): No

6. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer:
- Email:

Ho Chi Minh City, .../.../2024

**HEAD/DEAN
DEPARTMENT/SCHOOL
(Signature)**

OF



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

- **Course Name: BUSINESS ANALYTICS WITH BIG DATA**
- **Course Code: PH068IU**

1. General information

Course name	BUSINESS ANALYTICS WITH BIG DATA (<i>Phân tích kinh doanh với dữ liệu lớn</i>)
Course designation	<i>This course is an introduction to business analytics with various types of business analytics, types of data, data sources, understanding of big data and big data analytics and social media as well as social media analytics.</i>
Semester(s) in which the course is taught	1
Person responsible for the course	Dr. Nguyễn Quang
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 37.5 Private study including examination preparation, specified in hours: 90
Credit points/ECTS	3 credits/ 4.64 ECTS (1 ECTS is equivalent to 27.5 hours)
Required and recommended prerequisites	None

Course objectives	This course will provide students with: ● Big data concepts and big data tools ● Insights of social media analytics in business success. ● An awareness of the importance of business analytics to business.																				
Course learning outcomes	Upon the successful completion of this course students will be able to: <table><tr><td>Competency level</td><td colspan="2">Course learning outcome (CLO)</td></tr><tr><td>Knowledge</td><td colspan="2">CLO1. Describe big data concepts and big data tools</td></tr><tr><td>Skill</td><td colspan="2">CLO2. Analyze social media data using big data tools and generate insights for business success.</td></tr><tr><td>Attitude</td><td colspan="2">CLO3. Generalize the importance of business analytics to business.</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. Describe big data concepts and big data tools		Skill	CLO2. Analyze social media data using big data tools and generate insights for business success.		Attitude	CLO3. Generalize the importance of business analytics to business.							
Competency level	Course learning outcome (CLO)																				
Knowledge	CLO1. Describe big data concepts and big data tools																				
Skill	CLO2. Analyze social media data using big data tools and generate insights for business success.																				
Attitude	CLO3. Generalize the importance of business analytics to business.																				
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 periods) Teaching levels: I (Introduce); T (Teach); U (Utilize) <table><tr><td>Topic</td><td>Weight</td><td>Level</td></tr><tr><td>Introduction to Business Analytics</td><td>3</td><td>I, T, U</td></tr><tr><td>Principles of Big data and Big data tools</td><td>3</td><td>I, T, U</td></tr><tr><td>Data warehousing for business decision making</td><td>3</td><td>I, T, U</td></tr><tr><td>Data mining and business applications</td><td>3</td><td>I, T, U</td></tr><tr><td>Social media analytic – Text analysis and sentiment analysis</td><td>3</td><td>I, T, U</td></tr></table>			Topic	Weight	Level	Introduction to Business Analytics	3	I, T, U	Principles of Big data and Big data tools	3	I, T, U	Data warehousing for business decision making	3	I, T, U	Data mining and business applications	3	I, T, U	Social media analytic – Text analysis and sentiment analysis	3	I, T, U
Topic	Weight	Level																			
Introduction to Business Analytics	3	I, T, U																			
Principles of Big data and Big data tools	3	I, T, U																			
Data warehousing for business decision making	3	I, T, U																			
Data mining and business applications	3	I, T, U																			
Social media analytic – Text analysis and sentiment analysis	3	I, T, U																			
Examination forms	Written Examination/Project																				

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	Textbooks: [1] <i>Big Data and Business Analytics</i>, Edited by Jay Liebowitz, CPC Press, References: [2] <i>Social Media Analytics: Effective Tools for Building, Interpreting Using Metrics</i>, Marshall Sponder, Mc Graw Hill, 2012. [3] <i>Hadoop: The Definitive Guide</i>, 2nd edition, Tom White, 2011, O'Reilly. [4] <i>Big Data Analysis with Python: Combine Spark and Python to unlock the powers of parallel computing and machine learning</i>, Ivan Marin, Ankit Shukla, Sarang VK, 2019

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Intended Learning Outcomes (ILO) (1-10) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1				x						
2					x					
3									x	

ILO4. Develop applications using satellite-based positioning and remote sensing in the era of interdisciplinary science and technology.

ILO5. Perform experiments, analyze data, interpret results, and make conclusions regarding to technical problems in satellite technology applications.

ILO9. Show abilities of further self-learning and lifelong learning

3. Planned learning activities and teaching methods

Week	Topic	CLO	Learning activities	Resources	Assessments
1 -3	Introduction to Business Analytics	CLO1 CLO2 CLO3	Lecture Discussion	[1]	Exercise/Quiz Midterm
4-6	Principles of Big data and Big data tools Big data elements Machine-learning techniques Introduction to sales data and provide insight into customer buying trends and preferences	CLO1 CLO2 CLO3	Lecture Discussion	[1]	Exercise/Quiz Midterm
7-9	Data warehousing for business decision making Introduction to Data Warehousing Introduction to ETL components and Scripting	CLO1 CLO2 CLO3	Lecture Discussion	[1]	Exercise/Quiz Midterm
10-12	Data mining and business applications	CLO1 CLO2 CLO3	Lecture Discussion	[1]	Exercise/Quiz Final exam
13-15	Social media analytic – Text analysis and sentiment analysis	CLO1 CLO2 CLO3	Lecture Discussion	[1]	Exercise/Quiz Final exam

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Attendance (10%)			
In – class exercises (20%)	Qz1-5 60%Pass	Qz1-5 60%Pass	Qz1-5 60%Pass
Midterm (30%)	Q1 60%Pass	Q2 60%Pass	Q3 60%Pass
Final exam (40%)	Part I 60%Pass	Part II. 1 60%Pass	Part II.2 60%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

Ho Chi Minh City, //2025
CHAIR OF DEPARTMENT OF PHYSICS

Phan Bảo Ngọc



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: BUSINESS ANALYTICS WITH BIG DATA LABORATORY

Course Code: **PH059IU**

1. General information

Course name	BUSINESS ANALYTICS WITH BIG DATA LABORATORY (<i>Thực hành phân tích kinh doanh với dữ liệu lớn</i>)
Course designation	<i>This course provides students with case studies related to business analytics with various types of business analytics, types of data, data sources, understanding of big data and big data analytics and social media as well as social media analytics.</i>
Semester(s) in which the course is taught	1
Person responsible for the course	Dr. Nguyễn Quang
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, practice, presentation
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 55 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): laboratory project: 25 Private study including examination preparation, specified in hours: 30

Credit points/ECTS	1 credit/ 2 ECTS (1 ECTS is equivalent to 27.5 hours)		
Required and recommended prerequisites	Parallel course: Business Analytics with Big Data (PH068IU)		
Course objectives	This course will provide students with: · Case studies about big data analytics and its applications. · Insights of social media analytics in business success. · An awareness of the importance of business analytics to business.		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	CLO1. Apply big data concepts and big data tools into business	
	Skill	CLO2. Analyze social media data using big data tools and generate insights for business success.	
	Attitude	CLO3. Generalize the importance of business analytics to business.	
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>		
	Weight: laboratory session (4 periods)		
	Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	Topic	Weight	Level
	Big data analytics in business use-cases	8	I, T, U
Examination forms	Report and Presentation		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.		

Reading list	Textbooks: [1] <i>Big Data and Business Analytics</i>, Edited by Jay Liebowitz, CPC Press, 2013. References: [2] <i>Social Media Analytics: Effective Tools for Building, Interpreting, and Using Metrics</i>, Marshall Sponder, Mc Graw Hill, 2012. [3] <i>Hadoop: The Definitive Guide</i>, 2nd edition, Tom White, 2011, O'Reilly. [4] <i>Big Data Analysis with Python: Combine Spark and Python to unlock the powers of parallel computing and machine learning</i>, Ivan Marin, Ankit Shukla, Sarang VK, 2019
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2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (PLO) (1-10) is shown in the following table:

	PLO									
CLO	1	2	3	4	5	6	7	8	9	10
1				x						
2					x					
3									x	

ILO4. Develop applications using satellite-based positioning and remote sensing in the era of interdisciplinary science and technology.

ILO5. Perform experiments, analyze data, interpret results, and make conclusions regarding to technical problems in satellite technology applications.

ILO9. Show abilities of further self-learning and lifelong learning

3. Planned learning activities and teaching methods

Students choose a topic related to big data for business.

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Attendance (10%)			
In – class discussion (20%)	Qz1-5 60%Pass	Qz1-5 60%Pass	Qz1-5 60%Pass
Report and Presentation (70%)	Part I 60%Pass	Part II. 1 60%Pass	Part II.2 60%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

Ho Chi Minh City, / /2025
CHAIR OF DEPARTMENT OF PHYSICS

Phan Bảo Ngọc



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: INTERNSHIP

Course Code: BTFT462IU

1. General information

Course name	- <i>(in English)</i> Internship - <i>(in Vietnamese)</i> Thực tập ngành nghề
Course designation	- To those working at manufacturing factories: Observing and understanding the technological process of the main product(s) in the factories. Understanding the structure and operating manufacturing machines and equipment, and product QA and QC activities. - To those working at research institutes: Learning how to do research: doing research. Understanding research methods. Identifying research issues and doing research to tackle them. Understanding analytical equipment and techniques. Operating research equipment and apparatus. Learning how to write a scientific paper. - To those working at food service establishments: Observing and understanding procedures, regulations, structures of organizations providing food services (food training, certification, food quality and safety). Understanding different methods and standards. Identifying potential issues and finding possible solutions.
Semester(s) in which the module is taught	7,8,9
Person responsible for the module	Assigned Academic Advisor and On-site Supervisor
Language	English
Relation to curriculum	Compulsory
Teaching methods	Practice at companies, institutes or related units
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 360 h Practice hours: 270 h Private study including report writing, specified in hours ⁴⁶ : 90 h
Credit points	6 credits (Theory: 0 + Practice: 6) 13.1 ECTS

⁴⁶

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 0 Practice: 90	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): Accumulated at least 90 credits	
Course objectives	It is an opportunity for students to: - Gain practical experience in food processing, product development, food research and related areas. - Apply classroom knowledge to practical situations through involvement in different levels of the organization. - Evaluate their study plan and determine needed preparation for a career in food manufacturing, food management and research. - Gain exposure to a company or agency and a specific area of employment to determine whether they want that area for their life's work. - Develop confidence in personal judgment and gain maturity and self-confidence.	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Acquire new knowledge from the work at the internship unit
	Skill	CLO2. Establish and meet objectives CLO3. Communicate well during internship and defense
	Attitude	CLO4. Respect advisors and others in the internship CLO5. Follow the ethical and professional responsibilities
Course outline	- Students have to work at manufacturing factories, research institutes or food service providing organizations for a period of 2 months with at least 270 hours. - Students have to identify the internship opportunities by him/herself or with assistance from the Academic Advisor. - Students have to fill the Form for Internship Registration before going to the field before starting their internship. - Students have to fill the Form of Internship Confirmation after completion of the internship period with signature of the On-site Supervisor and submit it to the School of BT. - Students have to write and submit the Internship Report, following the Report requirements. In general, the report should be at least 20 pages in lengths, and be submitted latest 2 weeks after student return from the field	
Examination forms	Written report and oral defence	
Study and examination requirements	Student to send a report to and get advice from his/her Academic Advisor on a weekly basis.	
Reading list	Documents: supplied by the hosting company	

2.Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-4) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1							2
2					3		
3			3				
4					3		
5				4			

3.Assessment plan

Course assessment policy

Methods	Frequency	(%)
Oral defence + report (IU advisor)	1	50
Evaluation from site supervisor	1	50

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Report (IU advisor)	70%Pass	70%Pass			
Oral defence (IU advisor)	70%Pass	70%Pass	70%Pass		
Evaluation from site supervisor		70%Pass		70%Pass	70%Pass

Note: %Pass: % students have scores greater than 80 out of 100.

4. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer:
- Email:

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Biotechnology**

COURSE SYLLABUS

Course Name: THESIS

Course Code: BT179IU

1. General information

Course name	- <i>(in English)</i> Thesis - <i>(in Vietnamese)</i> Đồ án tốt nghiệp
Course designation	Thesis project is a semester-long, individual study, taken at the last semester of the senior year. This course provides opportunities to acquire a deeper understanding and practical application of research in the food-related fields. During the course, students will demonstrate their ability to independently plan, carry out and present their research on a topic. This involves formulating a research problem and objectives, selecting appropriate methods, analysing data and presenting results in relation to scientific articles and other relevant literature. The new design or solution for improvement must take into account realistic constraints such as economic, social and environmental conditions.
Semester(s) in which the module is taught	8,9,10
Person responsible for the module	Assigned Thesis Advisor
Language	English
Relation to curriculum	Compulsory
Teaching methods	Practice at laboratories
Workload (incl. contact hours, self-study hours)	Total workload: one semester including proposal complement and project complement (four months) Private study including report writing, specified in hours ⁴⁷ : at least 2 hours/day
Credit points	12 credits (Theory: 0 + Practice: 12) 26.2 ECTS

⁴⁷

When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Number of periods	Theory: 0 Practice: 180	
Required and recommended prerequisites for joining the course	- Prerequisites: (Course code – Course name): None - Corequisites: (Course code – Course name): None - Previous course (Course code – Course name): Accumulated at least 124 credits	
Course objectives	On successful completion of the course, the student will be able to: - Identify and formulate a defined research question within the food-related field - Search, collect and integrate relevant scientific literature in relation to own research question - Plan and process research experiments, data analysis and report writing in accordance with established scientific standards for language and format within a given time frame - Apply an ethical approach towards own research - Independently present, discuss and defend own thesis	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Acquire new knowledge from the thesis topic CLO2. Design experiments to solve a problem with consideration on possible constraints on social, environmental and economic factors
	Skill	CLO3. Communicate well during thesis and defense CLO4. Perform well the labwork
	Attitude	CLO5. Follow ethical requirement during thesis conduction
Course outline	- Student has to discuss with adviser to select his/her research topic and prepare a proposal. - After proposal defence and approval, student has 4 months of research conduction and report writing - About eight weeks after the start of research, student is required to submit a progress report to the school using Form BT02. - After 4 months from starting doing research, student is required to submit his/her thesis report to the school. - After a successful defence, the student revises his/her thesis according to the comments and amendments required by the Evaluation Committee using Form BT07. - After final approval, student is required to submit two copies of thesis (no binding is required) and a CDROM that contains the electronic versions of the thesis (in both .doc and /pdf formats) and the presentation in PowerPoint.	
Examination forms	Written report and oral defence	
Study and examination requirements	Students are required to meet adviser weekly to discuss the research progress	
Reading list	Thesis form packages from the School of Biotechnology, including all guidelines Thesis reports from library and research articles	

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (1-3) and Program Learning Outcomes (1-7) is shown in the following table:

	PLO						
CLO	1	2	3	4	5	6	7
1							2
2		5					
3			3				
4						4	
5				3			

3. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Report (Adviser)	1	20
Presentation (Committee)	1	60
Reviewer	1	20

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Report (IU advisor) (20%)	80%Pass	80%Pass	80%Pass	80%Pass	80%Pass
Presentation (Committee) (60%)	80%Pass	80%Pass	80%Pass	80%Pass	
Reviewer (20%)	80%Pass	80%Pass		80%Pass	80%Pass

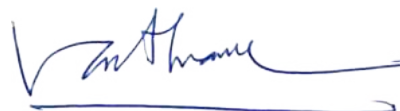
Note: %Pass: % students have scores greater than 80 out of 100.

4. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer:
- Email:

Ho Chi Minh City, .../.../2025

Dean of School of Biotechnology



Nguyễn Văn Thuận