

CHƯƠNG TRÌNH ĐÀO TẠO KHÓA 2024
NGÀNH CÔNG NGHỆ THỰC PHẨM
TRÌNH ĐỘ ĐẠI HỌC

*(Kèm theo Quyết định số 760/QĐ-ĐHQT ngày 09 tháng 7 năm 2024
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: Kỹ sư
- Loại hình đào tạo: chính quy
- Thời gian đào tạo: 4,5 năm
- Tên văn bằng sau khi tốt nghiệp:
 - + Tiếng Việt: Kỹ sư Công nghệ Thực phẩm
 - + Tiếng Anh: Bachelor of Engineering in Food Technology
- Nơi đào tạo: Trường Đại học Quốc tế

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 Đề án tuyển sinh hàng năm của Đại học Quốc gia TP.HCM và Đề án 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 Đề án tuyển sinh hàng năm của Đại học Quốc gia TP.HCM và Đề án tuyển sinh của trường Đại học Quốc tế.

c. Tổ hợp môn xét tuyển: A00, A01, B00, D07

d. Dự kiến chỉ tiêu tuyển sinh, quy mô đào tạo: 80

3. Mục tiêu đào tạo

a. Mục tiêu chung:

Mục tiêu chung:

Mục tiêu của CTĐT ngành CNTP tại trường ĐHQT nhằm cung cấp cho SV các kiến thức, kỹ năng chuyên môn, và thái độ cần thiết để trở thành những người hoạt động trong

lĩnh vực CNTP trong tương lai, có hiểu biết về thế giới kinh doanh hiện đại, và đóng góp vào sự phát triển của bản thân, gia đình, và xã hội.

b. Mục tiêu cụ thể (Program Objectives - POs)

- PO1 - Có khả năng ra QĐ 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 QĐ cho nhà quản lý.
- PO2 - Có khả năng cung cấp các dịch vụ thực phẩm: Tư vấn đầu tư chuyển 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 QĐ, giao tiếp quốc tế, làm việc nhóm: Có kỹ năng phân tích, đưa ra QĐ, 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.

Bảng 1. Tính kết nối giữa Mục tiêu CTĐT và Tầm nhìn – Sứ mạng Trường ĐHQT với MTGD được quy định tại Luật giáo dục ĐH

		Mục tiêu CTĐT
Luật giáo dục ĐH 2012	Có kiến thức chuyên môn toàn diện, nắm vững nguyên lý, quy luật tự nhiên - xã hội	PO1, PO3, PO6
	Có kỹ năng thực hành cơ bản	PO4
	Có khả năng làm việc độc lập, sáng tạo và giải quyết những vấn đề thuộc ngành được đào tạo	PO5
Tầm nhìn của ĐHQT	Trường ĐHQT là trường đại học nghiên cứu thuộc топ đầu tại châu Á; là CSGD quốc tế, tự chủ, sáng tạo; là nơi	PO5

		Mục tiêu CTĐT
	vun đắp và phát triển nguồn nhân lực chất lượng cao cho thị trường lao động trong nước và quốc tế.	
Sứ mạng của ĐHQT	Là CSGD quốc tế, mang bản sắc văn hóa Việt Nam.	PO5, PO6
	CSGD đại học đi tiên phong trong đổi mới cơ chế quản trị đại học theo mô hình tự chủ và tiên tiến.	PO5, PO6
	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 CTĐT.	PO1
	Giảng dạy và nghiên cứu thực hiện bằng tiếng Anh là điểm khác biệt nâng tầm quốc tế của nhà trường. SV 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.	PO5, PO6
	Nghiên cứu cơ bản với hàm lượng tri thức lớn song hành với nghiên cứu ứng dụng, đáp ứng yêu cầu đổi mới sáng tạo và phát triển bền vững của doanh nghiệp, địa phương và xã hội; quan tâm, thúc đẩy các hoạt động kết nối và PVCĐ.	PO2, PO4

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	<i>Có khả năng 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</i>
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)
PLO2	<i>Có khả năng 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 và kinh tế</i>

Thang đo*	Nội dung chuẩn đầu ra
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 và kinh tế
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 và kinh tế 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
2.5	Đánh giá được hiệu quả của sản phẩm/quy trình thiết kế và đề xuất cải tiến (nếu cần)
PLO3	<i>Có khả năng giao tiếp hiệu quả với đa dạng đối tượng người nghe</i>
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	<i>Có 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</i>
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	<i>Có khả năng hoạt động hiệu quả trong đội nhóm, 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</i>
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	<i>Có khả năng thiết kế và làm các thí nghiệm, phân tích và giải thích số liệu, và lập báo cáo các kết quả đạt được</i>
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	<i>Có khả năng tự học và áp dụng những kiến thức mới khi cần, thông qua việc sử dụng những chiến lược học tập thích hợp</i>
7.1	Có khả năng tiếp cận và sử dụng 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, kỹ thuật và kỹ năng mới để giải quyết một vấn đề
* Thang đo tham khảo thang Bloom	

Bảng 3. Đối chiếu CDR của CTĐT ngành CNTP và CDR theo Khung trình độ Quốc gia Việt Nam - Bậc 6 (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 6)	CDR CTĐT
Kiến thức		
K1	- Kiến thức thực tế vững chắc, kiến thức lý thuyết sâu, rộng trong phạm vi của ngành đào tạo.	PLO1
K2	- Kiến thức cơ bản về khoa học xã hội, khoa học chính trị và pháp luật. - Kiến thức về CNTT đáp ứng yêu cầu công việc.	PLO2
K3	- Kiến thức về lập kế hoạch, tổ chức và giám sát các quá trình trong một lĩnh vực hoạt động cụ thể. - Kiến thức cơ bản về quản lý, điều hành hoạt động chuyên môn.	PLO4, PLO6
Kỹ năng		
S1	- Kỹ năng phản biện, phê phán và sử dụng các giải pháp thay thế trong điều kiện môi trường không xác định hoặc thay đổi. - Kỹ năng truyền đạt vấn đề và giải pháp tới người khác tại nơi làm việc; chuyển tải, phổ biến kiến thức, kỹ năng trong việc thực hiện những nhiệm vụ cụ thể hoặc phức tạp.	PLO3, PLO4

	Khung trình độ Quốc gia Việt Nam (bậc 6)	CĐR CTĐT
	- Có năng lực ngoại ngữ bậc 3/6 Khung năng lực ngoại ngữ của Việt Nam.	
S2	- Kỹ năng cần thiết để có thể giải quyết các vấn đề phức tạp. - Kỹ năng dẫn dắt, khởi nghiệp, tạo việc làm cho mình và cho người khác. - Kỹ năng đánh giá chất lượng công việc sau khi hoàn thành và kết quả thực hiện của các thành viên trong nhóm.	PLO1, PLO5
Mức độ tự chủ và trách nhiệm		
A1	- Hướng dẫn, giám sát những người khác thực hiện nhiệm vụ xác định. - Lập kế hoạch, điều phối, quản lý các nguồn lực, đánh giá và cải thiện hiệu quả các hoạt động - Làm việc độc lập hoặc làm việc theo nhóm trong điều kiện làm việc thay đổi, chịu trách nhiệm cá nhân và trách nhiệm đối với nhóm.	PLO4, PLO5
A2	- Tự định hướng, đưa ra kết luận chuyên môn và có thể bảo vệ được quan điểm cá nhân.	PLO4, PLO7

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

Bảng 4. Mối quan hệ giữa CĐR của CTĐT và mục tiêu đào tạo

	PLOs⁽¹⁾	POs⁽²⁾					
		PO1	PO2	PO3	PO4	PO5	PO6
Kiến thức	PLO1	x			x		
	PLO2	x		x	x	x	
	PLO4						x
	PLO6			x			
Kỹ năng	PLO1	x			x		
	PLO3		x			x	
	PLO4						x
	PLO5				x	x	
Tự chủ và trách nhiệm	PLO4						x
	PLO5				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-ĐHQG 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 3. 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 khoá

Tổng số tín chỉ: 150 tín chỉ, trong đó phân bổ kiến thức như Bảng 6 (không bao gồm giáo dục thể chất và giáo dục quốc phòng):

Bảng 4. Cấu trúc chương trình đào tạo

TT	Các khối kiến thức ⁽³⁾	Khối lượng	
		Số tín chỉ	%
I	Khối kiến thức giáo dục đại cương	47	31
II	Khối kiến thức cơ sở ngành	70	47
III	Kiến thức chuyên ngành	12	8
IV	Kiến thức bổ trợ	3	2
V	Thực tập, khóa luận/luận văn tốt nghiệp	18	12
	Tổng cộng	150	100

9. Nội dung chương trình đào tạo

Bảng 5. 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							
		Lý luận chính trị		Bắt buộc	11			
1	PE015IU	Triết học Mac Lenin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
2	PE016IU	Kinh tế chính trị Mac Lenin	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 CSVN	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						
6	PE020IU	Đạo đức và kỹ năng nghề nghiệp	Engineering Ethics and Professional Skills	Tự chọn tự do	3	3	0	
7	PE008IU	Tư duy phân tích	Critical Thinking	Tự chọn tự do	3	3	0	
8	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
		Ngoại ngữ		Bắt buộc	8			
9	EN007IU	Tiếng Anh chuyên ngành 1	Academic English 1	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	
10	EN008IU	Tiếng Anh chuyên ngành 1	Academic English 1	Bắt buộc	2	2	0	
11	EN011IU	Tiếng Anh chuyên ngành 2	Academic English 2	Bắt buộc	2	2	0	
12	EN012IU	Tiếng Anh chuyên ngành 2	Academic English 2	Bắt buộc	2	2	0	
		Giáo dục Thể chất						
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			22			
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	BT311IU	Sinh học đại cương	Biology	Bắt buộc	3	3	0	
18	CH011IU	Hóa đại cương	Chemistry for Engineers	Bắt buộc	3	3	0	
19	CH012IU	Thực hành Hóa đại cương	Chemistry Laboratory	Bắt buộc	1	0	1	501
20	MA019IU	Toán cao cấp 2	Calculus 2	Bắt buộc	4	4	0	
21	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	
22	BT317IU	Thống kê sinh học	Biostatistics	Bắt buộc	2	2	0	
23	BT318IU	Thực hành thống kê sinh học	Practice in Biostatistics	Bắt buộc	1	0	1	302

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	
24	PE014IU	Khoa học môi trường	Environmental Science	Tự chọn tự do	3	3	0	
		Kinh tế - Quản lý			3			
25	IS050IU	Quản lý dự án	Project Management	Tự chọn tự do	3	3	0	
26	IS062IU	Quản lý hậu cần & chuỗi cung ứng	E-Logistics in Supply chain Management	Tự chọn tự do	3	3	0	
27	BA003IU	Nguyên lý Marketing	Principles of Marketing	Tự chọn tự do	3	3	0	
II	Kiến thức cơ sở ngành							
28	CH009IU	Hóa hữu cơ	Organic Chemistry	Bắt buộc	3	3	0	
29	BTFT201IU	Nhập môn Khoa học và Công nghệ Thực phẩm	Introduction to Food Science and Technology	Bắt buộc	3	3	0	
30	BTFT203IU	Các nguyên lý Kỹ thuật Thực phẩm	Food Engineering Principles	Bắt buộc	4	4	0	
31	BTFT156IU	Hóa học và hóa sinh thực phẩm	Food Chemistry and Biochemistry	Bắt buộc	3	3	0	
32	BTFT157IU	Phát triển bền vững thực phẩm	Food Sustainability	Bắt buộc	2	2	0	
33	BTFT234IU	Vi sinh thực phẩm	Food Microbiology	Bắt buộc	3	3	0	
34	BTFT254IU	Thực hành Vi sinh thực phẩm	Practice in Food Microbiology	Bắt buộc	1	0	1	602
35	BTFT205IU	Dinh dưỡng và Thực phẩm chức năng	Nutrition and Functional Foods	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	
36	BTFT331IU	Quá trình và thiết bị Thực phẩm 1	Food Unit Operations 1	Bắt buộc	3	3	0	
37	BTFT351IU	Thực hành Quá trình và thiết bị Thực phẩm 1	Practice in Food Unit Operations 1	Bắt buộc	1	0	1	102
38	BTFT461IU	Vật lý thực phẩm và hệ keo	Food Physics and Colloids	Bắt buộc	2	2	0	
39	BTFT332IU	Phân tích Thực phẩm	Food Analysis	Bắt buộc	3	3	0	
40	BTFT352IU	Thực hành Phân tích Thực phẩm	Practice in Food Analysis	Bắt buộc	1	0	1	102
41	BTFT236IU	Enzyme và Lên men Thực phẩm	Enzyme and Food Fermentation	Bắt buộc	3	3	0	
42	BTFT256IU	Thực hành Enzyme và Lên men Thực phẩm	Practice in Enzyme and Food Fermentation	Bắt buộc	1	0	1	602
43	BTFT303IU	Độc tố học và an toàn Thực phẩm	Toxicology and Food Safety	Bắt buộc	3	3	0	
44	BTFT306IU	Bao bì và Phụ gia Thực phẩm	Food Packaging and Food Additives	Bắt buộc	3	3	0	
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	102
47	BTFT305IU	Các hệ thống đảm bảo chất lượng Thực phẩm	Food Quality Assurance System	Bắt buộc	3	3	0	
48	BTFT312IU	Luật thực phẩm và tiêu chuẩn thực phẩm	Food Laws and Standards	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	
49	BTFT337IU	Phân tích vi sinh Thực phẩm	Food Microbiology Analysis	Bắt buộc	2	2	0	
50	BTFT358IU	Thực hành Phân tích vi sinh Thực phẩm	Practice in Food Microbiology Analysis	Bắt buộc	1	0	1	602
51	BTFT437IU	Phân tích cảm quan Thực phẩm	Food Sensory Analysis	Bắt buộc	2	2	0	
52	BTFT457IU	Thực hành Phân tích cảm quan Thực phẩm	Practice in Food Sensory Analysis	Bắt buộc	1	0	1	601
53	BTFT438IU	Phát triển sản phẩm và tiếp thị	Food Product Development and Marketing	Bắt buộc	2	2	0	
54	BTFT458IU	Thực hành Phát triển sản phẩm và tiếp thị	Practice in Food Product Development and Marketing	Bắt buộc	1	0	1	601
55	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	
56	BTFT411IU	Công nghệ sau thu hoạch	Post – harvest Technologies	Bắt buộc	3	3	0	
57	BTFT355IU	Thiết kế nhà máy thực phẩm	Food Plant Design	Bắt buộc	2	2	0	
58	BTFT412IU	Chế biến thực phẩm	Food Processing	Bắt buộc	2	2	0	
59	BT217IU	Di truyền phân tử	Molecular Genetics	Tự chọn tự do	3	3	0	
60	BT405IU	Hóa lý	Physical Chemtry	Tự chọn tự do	3	3	0	
61	CHE2041IU	Quá trình và thiết bị truyền khối	Mass Transfer Operations	Tự chọn tự do	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	
III	Kiến thức chuyên ngành							
62	BTFT441IU	Công nghệ chế biến sữa và các sản phẩm sữa	Dairy Product Technology	Tự chọn 12 TC	2	2	0	
63	BTFT451IU	Thực hành Công nghệ chế biến sữa và các sản phẩm sữa	Practice in Dairy Product Technology	Tự chọn 12 TC	1	0	1	601
64	BTFT442IU	Công nghệ đồ uống	Beverage Technology	Tự chọn 12 TC	2	2	0	
65	BTFT452IU	Thực hành Công nghệ đồ uống	Practice in Beverage Technology	Tự chọn 12 TC	1	0	1	601
66	BTFT443IU	Công nghệ chế biến lương thực	Cereal Product Technology	Tự chọn 12 TC	2	2	0	
67	BTFT453IU	Thực hành Công nghệ chế biến lương thực	Practice in Cereal Product Technology	Tự chọn 12 TC	1	0	1	601
68	BTFT449IU	Công nghệ dầu và tinh dầu	Vegetable oil and essential oil technology	Tự chọn 12 TC	2	2	0	
69	BTFT459IU	Thực hành Công nghệ dầu và tinh dầu	Practice in Vegetable oil and essential oil technology	Tự chọn 12 TC	1	0	1	601
70	BTFT445IU	Công nghệ chế biến các sản phẩm thịt	Meat Product Technology	Tự chọn 12 TC	2	2	0	
71	BTFT455IU	Thực hành Công nghệ chế biến các sản phẩm thịt	Practice in Meat Product Technology	Tự chọn 12 TC	1	0	1	601
72	BTFT446IU	Công nghệ chế biến chè, cà phê, ca-cao	Technology of Coffee, Tea and Cacao	Tự chọn 12 TC	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	
73	BTFT456IU	Thực hành Công nghệ chế biến chè, cà phê, ca-cao	Practice in Technology of Coffee, Tea and Cacao	Tự chọn 12 TC	1	0	1	601
74	BTFT447IU	Công nghệ chế biến bánh kẹo	Confectionery Product Technology	Tự chọn 12 TC	2	2	0	
75	BTFT457IU	Thực hành Công nghệ chế biến bánh kẹo	Practice in Confectionery Product Technology	Tự chọn 12 TC	1	0	1	601
IV	Kiến thức bổ trợ							
76	ENEE1001IU	Vẽ kỹ thuật	Engineering Drawing	Tự chọn tự do	3	3	0	
V	Thực tập, khóa luận/luận văn tốt nghiệp			18	18	0	18	
77	BTFT419IU	Thực tập ngành nghề 1	Internship 1	Bắt buộc	3	0	3	
78	BTFT469IU	Thực tập ngành nghề 2	Internship 2	Bắt buộc	3	0	3	
79	BT179IU	Luận văn tốt nghiệp	Thesis	Bắt buộc	12	0	12	
	Tổng số (tín chỉ)				150	112	38	

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

Tùy vào trình độ tiếng Anh của người học đạt trình độ AE1, IE2, IE1 và IE0, kế hoạch giảng dạy các môn học được cụ thể tương ứng được trình bày trong các Bảng 6, Bảng 7, Bảng 8 và Bảng 9.

10.1. Trình độ AE1

Bảng 6. Kế hoạch giảng dạy đối với người học đạt trình độ AE1

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK I	MA001IU	Calculus 1	Toán cao cấp 1	Bắt buộc	4	4	0	
	PH013IU	Physics 1	Vật lý 1	Bắt buộc	2	2	0	
	BT311IU	Biology	Sinh học đại cương	Bắt buộc	3	3	0	
	CH011IU	Chemistry for Engineers	Hóa đại cương	Bắt buộc	3	3	0	
	CH012IU	Chemistry Laboratory	Thực hành Hóa đại cương	Bắt buộc	1	0	1	
	EN007IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	EN008IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	PT001IU	Physical Training 1	GD thể chất 1	Bắt buộc	3	0	3	
	Tổng cộng				20	16	4	
HK II	MA019IU	Calculus 2	Toán cao cấp 2	Bắt buộc	4	4	0	
	PH014IU	Physics 2	Vật lý 2	Bắt buộc	2	2	0	
	BTFT201IU	Introduction to Food Science and Technology	Nhập môn Khoa học và Công nghệ Thực phẩm	Bắt buộc	3	3	0	
	CH009IU	Organic Chemistry	Hóa hữu cơ	Bắt buộc	3	3	0	
	EN011IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	EN012IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	PT002IU	Physical Training 2	GD thể chất 2	Bắt buộc	3	0	3	
	Tổng cộng				19	16	3	
HK hè	PE015IU	Philosophy of Marxism and Leninism	Triết học Mac Lenin	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	PE016IU	Political economics of Marxism and Leninism	Kinh tế chính trị Mac Lenin	Bắt buộc	2	2	0	
	PE017IU	Scientific socialism	Chủ nghĩa xã hội khoa học	Bắt buộc	2	2	0	
	Tổng cộng				7	7	0	
HK III	PE021IU	General Law	Pháp luật đại cương	Bắt buộc	3	3	0	
	BTFT203IU	Food Engineering Principles	Các nguyên lý Kỹ thuật Thực phẩm	Bắt buộc	4	4	0	Physics 2 (HT)
	BTFT156IU	Food Chemistry and Biochemistry	Hóa học và Hóa sinh Thực phẩm	Bắt buộc	3	3	0	
	BT317IU	Biostatistics	Thống kê Sinh học	Bắt buộc	2	2	0	
	BT318IU	Practice in Biostatistics	Thực hành Thống kê Sinh học	Bắt buộc	1	0	1	Biostatistics (SH)
	BTFT157IU	Food Sustainability	Phát triển Bền vững Thực phẩm	Bắt buộc	2	2	0	
	Tổng cộng				15	14	1	
HK IV	BTFT234IU	Food Microbiology	Vi sinh Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
	BTFT254IU	Practice in Food Microbiology	Thực hành Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology (SH)
	BTFT205IU	Nutrition and Functional Foods	Dinh dưỡng và Thực phẩm Chức năng	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	PE018IU	History of Vietnamese Communist Party	Lịch sử Đảng CSVN	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism (HT), Scientific socialism (HT)
	PE019IU	Ho Chi Minh's Thoughts	Tư tưởng Hồ Chí Minh	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism (HT), Scientific socialism (HT)
	BTFT331IU	Food Unit Operations 1	Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT351IU	Practice in Food Unit Operations 1	Thực hành Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	1	0	1	Food Unit Operations 1 (SH)
		IU Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
	Tổng cộng				18	16	2	
HK V	BTFT312IU	Food Laws and Standards	Luật Thực phẩm và Tiêu chuẩn Thực phẩm	Bắt buộc	2	2	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	BTFT332IU	Food Analysis	Phân tích Thực phẩm	Bắt buộc	3	3	0	Organic Chemistry (HT), Introduction to Food Science and Technology (HT)
	BTFT352IU	Practice in Food Analysis	Thực hành Phân tích Thực phẩm	Bắt buộc	1	0	1	Food Analysis (SH)
	BTFT236IU	Enzyme and Food Fermentation	Enzyme và Lên men Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BTFT256IU	Practice in Enzyme and Food Fermentation	Thực hành Enzyme và Lên men Thực phẩm	Bắt buộc	1	0	1	Enzyme and Food Fermentation (SH)
	BTFT303IU	Toxicology and Food Safety	Độc tố học và An toàn Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Nutrition and Functional Foods (HT)
	BTFT306IU	Food Packaging and Food Additives	Bao bì và Phụ gia Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
	Tổng cộng				16	14	2	
HK VI	BTFT334IU	Food Unit Operations 2	Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								Principles (HT)
	BTFT354IU	Practice in Food Unit Operations 2	Thực hành Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	1	0	1	Food Unit Operations 2 (SH)
	BTFT305IU	Food Quality Assurance System	Hệ thống Đảm bảo Chất lượng Thực phẩm	Bắt buộc	3	3	0	Biostatistics (HT)
	BTFT337IU	Food Microbiology Analysis	Phân tích Vi sinh Thực phẩm	Bắt buộc	2	2	0	Food Microbiology (HT)
	BTFT358IU	Practice in Food Microbiology Analysis	Thực hành Phân tích Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology Analysis (SH) Practice in Food Microbiology (HT)
	BTFT437IU	Food Sensory Analysis	Phân tích Cảm quan Thực phẩm	Bắt buộc	2	2	0	Biostatistics (HT)
	BTFT457IU	Practice in Food Sensory Analysis	Thực hành Phân tích Cảm quan Thực phẩm	Bắt buộc	1	0	1	Food Sensory Analysis (SH), Practice in Biostatistics (HT)
		IU Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
	Tổng cộng				16	13	3	
HK hè	BTFT419IU	Internship 1	Thực tập ngành nghề 1	Bắt buộc	3	0	3	tích lũy tối thiểu 90 tín chỉ
	Tổng cộng				3	0	3	
HK VII		Major Elective (2 courses)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
	BTFT411IU	Post – harvest Technologies	Công nghệ Sau thu hoạch	Bắt buộc	3	3	0	Introduction to Food Science and Technology

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								(HT), Food Chemistry and Biochemistry (HT)
	BTFT461IU	Food Physics and Colloids	Vật lý Thực phẩm và Hệ keo	Bắt buộc	2	2	0	Food Engineering Principles (HT)
	BTFT355IU	Food Plant Design	Thiết kế Nhà máy Thực phẩm	Bắt buộc	2	2	0	Food Quality Assurance System (HT)
	BTFT412IU	Food Processing	Chế biến thực phẩm	Bắt buộc	2	2	0	Food Engineering Principles
	Tổng cộng				15	13	2	
HK VIII		Major Elective (2 course)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
	BTFT438IU	Food Product Development and Marketing	Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	2	2	0	Food Sensory Analysis (HT), Food Laws and Standards (HT)
	BTFT458IU	Practice in Food Product Development and Marketing	Thực hành Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	1	0	1	Food Product Development and Marketing (SH), Practice in Food Sensory Analysis (HT)
	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	Biostatistics (HT)
	BTFT469IU	Internship 2	Thực tập ngành nghề 2	Bắt buộc	3	0	3	tích lũy tối thiểu 110 tín chỉ

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	Tổng cộng				15	9	6	
HK IX	BT179IU	Thesis	Luận văn tốt nghiệp	Bắt buộc	12	0	12	tích lũy tối thiểu 124 tín chỉ
Tổng cộng					156	118	38	

10.2. Trình độ IE2

Bảng 7. Kế hoạch giảng dạy đối với người học đạt trình độ IE2

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK I	ENTP02	IE2	TA hỗ trợ 2	Bắt buộc	13	13	0	
	PT001IU	Physical Training 1	GD thể chất 1	Bắt buộc	3	0	3	
	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 Mac Lenin	Bắt buộc	2	2	0	
	Tổng cộng				21	18	3	
HK II	EN007IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	EN008IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	MA001IU	Calculus 1	Toán cao cấp 1	Bắt buộc	4	4	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	PH013IU	Physics 1	Vật lý 1	Bắt buộc	2	2	0	
	BT311IU	Biology	Sinh học đại cương	Bắt buộc	3	3	0	
	PE021IU	General Law	Pháp luật đại cương	Bắt buộc	3	3	0	
	PT002IU	Physical Training 2	GD thể chất 2	Bắt buộc	3	0	3	
	Tổng cộng				19	16	3	
HK hè	EN011IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	EN012IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	PE017IU	Scientific socialism	Chủ nghĩa xã hội khoa học	Bắt buộc	2	2	0	
	Tổng cộng				6	6	0	
HK III	MA019IU	Calculus 2	Toán cao cấp 2	Bắt buộc	4	4	0	
	CH011IU	Chemistry for Engineers	Hóa đại cương	Bắt buộc	3	3	0	
	CH012IU	Chemistry Laboratory	Thực hành Hóa đại cương	Bắt buộc	1	0	1	
	BTFT201IU	Introduction to Food Science and Technology	Nhập môn Khoa học và Công nghệ Thực phẩm	Bắt buộc	3	3	0	
	PH014IU	Physics 2	Vật lý 2	Bắt buộc	2	2	0	
	PE019IU	Ho Chi Minh's Thoughts	Tư tưởng Hồ Chí Minh	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								Marxism and Leninism (HT), Scientific socialism (HT)
	PE018IU	History of Vietnamese Communist Party	Lịch sử Đảng CSVN	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism (HT), Scientific socialism (HT)
	Tổng cộng				17	16	1	
HK IV	BTFT312IU	Food Laws and Standards	Luật Thực phẩm và Tiêu chuẩn Thực phẩm	Bắt buộc	2	2	0	
	CH009IU	Organic Chemistry	Hóa hữu cơ	Bắt buộc	3	3	0	
	BTFT156IU	Food Chemistry and Biochemistry	Hóa học và Hóa sinh Thực phẩm	Bắt buộc	3	3	0	
	BT317IU	Biostatistics	Thống kê Sinh học	Bắt buộc	2	2	0	
	BT318IU	Practice in Biostatistics	Thực hành Thống kê Sinh học	Bắt buộc	1	0	1	Biostatistics (SH)
	BTFT157IU	Food Sustainability	Phát triển Bền vững Thực phẩm	Bắt buộc	2	2	0	
	BTFT203IU	Food Engineering Principles	Các nguyên lý Kỹ thuật Thực phẩm	Bắt buộc	4	4	0	Physics 2 (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	Tổng cộng				17	16	1	
HK V	BTFT205IU	Nutrition and Functional Foods	Dinh dưỡng và Thực phẩm Chức năng	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BTFT331IU	Food Unit Operations 1	Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT351IU	Practice in Food Unit Operations 1	Thực hành Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	1	0	1	Food Unit Operations 1 (SH)
	BTFT332IU	Food Analysis	Phân tích Thực phẩm	Bắt buộc	3	3	0	Organic Chemistry (HT), Introduction to Food Science and Technology (HT)
	BTFT352IU	Practice in Food Analysis	Thực hành Phân tích Thực phẩm	Bắt buộc	1	0	1	Food Analysis (SH)
	BTFT234IU	Food Microbiology	Vi sinh Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
	BTFT254IU	Practice in Food Microbiology	Thực hành Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology (SH)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	BTFT312IU	Food Laws and Standards	Luật Thực phẩm và Tiêu chuẩn Thực phẩm	Bắt buộc	2	2	0	
		IU Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
	Tổng cộng				18	15	3	
HK VI	BTFT306IU	Food Packaging and Food Additives	Bao bì và Phụ gia Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
	BTFT334IU	Food Unit Operations 2	Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT354IU	Practice in Food Unit Operations 2	Thực hành Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	1	0	1	Food Unit Operations 2 (SH)
	BTFT337IU	Food Microbiology Analysis	Phân tích Vi sinh Thực phẩm	Bắt buộc	2	2	0	Food Microbiology (HT)
	BTFT358IU	Practice in Food Microbiology Analysis	Thực hành Phân tích Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology Analysis (SH) Practice in Food Microbiology (HT)
	BTFT236IU	Enzyme and Food Fermentation	Enzyme và Lên men Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								and Biochemistry (HT)
	BTFT256IU	Practice in Enzyme and Food Fermentation	Thực hành Enzyme và Lên men Thực phẩm	Bắt buộc	1	0	1	Enzyme and Food Fermentation (SH)
	BTFT305IU	Food Quality Assurance System	Hệ thống Đảm bảo Chất lượng Thực phẩm	Bắt buộc	3	3	0	Biostatistics (HT)
		IU Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
	Tổng cộng				20	17	3	
HK hè	BTFT419IU	Internship 1	Thực tập ngành nghề 1	Bắt buộc	3	0	3	tích lũy tối thiểu 90 tín chỉ
HKVII	BTFT437IU	Food Sensory Analysis	Phân tích Cảm quan Thực phẩm	Bắt buộc	2	2	0	Biostatistics (HT)
	BTFT457IU	Practice in Food Sensory Analysis	Thực hành Phân tích Cảm quan Thực phẩm	Bắt buộc	1	0	1	Food Sensory Analysis (SH), Practice in Biostatistics (HT)
	BTFT303IU	Toxicology and Food Safety	Độc tố học và An toàn Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Nutrition and Functional Foods (HT)
	BTFT355IU	Food Plant Design	Thiết kế Nhà máy Thực phẩm	Bắt buộc	2	2	0	Food Quality Assurance System (HT)
	BTFT461IU	Food Physics and Colloids	Vật lý Thực phẩm và Hệ keo	Bắt buộc	2	2	0	Food Engineering Principles (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
		Major Elective (2 courses)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
	Tổng cộng				16	13	3	
HK VIII	BTFT412IU	Food Processing	Chế biến Thực phẩm	Bắt buộc	2	2	0	Food Engineering Principles (HT)
	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	Biostatistics (HT)
	BTFT438IU	Food Product Development and Marketing	Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	2	2	0	Food Sensory Analysis (HT), Food Laws and Standards (HT)
	BTFT458IU	Practice in Food Product Development and Marketing	Thực hành Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	1	0	1	Food Product Development and Marketing (SH), Practice in Food Sensory Analysis (HT)
	BTFT411IU	Post – harvest Technologies	Công nghệ Sau thu hoạch	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								Biochemistry (HT)
		Major Elective (2 course)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
	Tổng cộng				17	14	3	
HK hè	BTFT469IU	Internship 2	Thực tập ngành nghề 2	Bắt buộc	3	0	3	tích lũy tối thiểu 110 tín chỉ
HK IX	BT179IU	Thesis	Luận văn tốt nghiệp	Bắt buộc	12	0	12	tích lũy tối thiểu 124 tín chỉ
Tổng cộng					150	112	38	

10.3. Trình độ IE1

Bảng 8. Kế hoạch giảng dạy đối với người học đạt trình độ IE1

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK I	ENTP01	IE1	TA bổ trợ 1	Bắt buộc	17	17	0	
	ENTP02	IE2	TA bổ trợ 2	Bắt buộc	13	13	0	
	Tổng cộng				30	30	0	
HK II	EN007IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	EN008IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	PT001IU	Physical Training 1	GD thể chất 1	Bắt buộc	3	0	3	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	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 Mac Lenin	Bắt buộc	2	2	0	
	MA001IU	Calculus 1	Toán cao cấp 1	Bắt buộc	4	4	0	
	PH013IU	Physics 1	Vật lý 1	Bắt buộc	2	2	0	
	Tổng cộng				18	15	3	
HK hè	PE017IU	Scientific socialism	Chủ nghĩa xã hội khoa học	Bắt buộc	2	2	0	
	MA019IU	Calculus 2	Toán cao cấp 2	Bắt buộc	4	4	0	
	Tổng cộng				6	6	0	
HK III	PT002IU	Physical Training 2	GD thể chất 2	Bắt buộc	3	0	3	
	BT311IU	Biology	Sinh học đại cương	Bắt buộc	3	3	0	
	CH011IU	Chemistry for Engineers	Hóa đại cương	Bắt buộc	3	3	0	
	CH012IU	Chemistry Laboratory	Thực hành Hóa đại cương	Bắt buộc	1	0	1	
	BTFT201IU	Introduction to Food Science and Technology	Nhập môn Khoa học và Công nghệ Thực phẩm	Bắt buộc	3	3	0	
	PH014IU	Physics 2	Vật lý 2	Bắt buộc	2	2	0	
	EN011IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	EN012IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	Tổng cộng				19	15	4	
HK IV	BTFT156IU	Food Chemistry and Biochemistry	Hóa học và Hóa sinh Thực phẩm	Bắt buộc	3	3	0	
	PE021IU	General Law	Pháp luật đại cương	Bắt buộc	3	3	0	
	CH009IU	Organic Chemistry	Hóa hữu cơ	Bắt buộc	3	3	0	
	PE019IU	Ho Chi Minh's Thoughts	Tư tưởng Hồ Chí Minh	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism (HT), Scientific socialism (HT)
	BTFT157IU	Food Sustainability	Phát triển Bền vững Thực phẩm	Bắt buộc	2	2	0	
	BTFT203IU	Food Engineering Principles	Các nguyên lý Kỹ thuật Thực phẩm	Bắt buộc	4	4	0	Physics 2 (HT)
	PE018IU	History of Vietnamese Communist Party	Lịch sử Đảng CSVN	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								(HT), Scientific socialism (HT)
		Tổng cộng			19	19	0	
HK V	BTFT205IU	Nutrition and Functional Foods	Dinh dưỡng và Thực phẩm Chức năng	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BT317IU	Biostatistics	Thống kê Sinh học	Bắt buộc	2	2	0	
	BT318IU	Practice in Biostatistics	Thực hành Thống kê Sinh học	Bắt buộc	1	0	1	Biostatistics (SH)
	BTFT331IU	Food Unit Operations 1	Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT351IU	Practice in Food Unit Operations 1	Thực hành Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	1	0	1	Food Unit Operations 1 (SH)
	BTFT234IU	Food Microbiology	Vi sinh Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	BTFT254IU	Practice in Food Microbiology	Thực hành Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology (SH)
	BTFT312IU	Food Laws and Standards	Luật Thực phẩm và Tiêu chuẩn Thực phẩm	Bắt buộc	2	2	0	
		IU Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
	Tổng cộng				19	16	3	
HK VI	BTFT334IU	Food Unit Operations 2	Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT354IU	Practice in Food Unit Operations 2	Thực hành Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	1	0	1	Food Unit Operations 2 (SH)
	BTFT332IU	Food Analysis	Phân tích Thực phẩm	Bắt buộc	3	3	0	Organic Chemistry (HT), Introduction to Food Science and Technology (HT)
	BTFT352IU	Practice in Food Analysis	Thực hành Phân tích Thực phẩm	Bắt buộc	1	0	1	Food Analysis (SH)
	BTFT236IU	Enzyme and Food Fermentation	Enzyme và Lên men Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								y (HT), Food Chemistry and Biochemistry (HT)
	BTFT256IU	Practice in Enzyme and Food Fermentation	Thực hành Enzyme và Lên men Thực phẩm	Bắt buộc	1	0	1	Enzyme and Food Fermentation (SH)
	BTFT305IU	Food Quality Assurance System	Hệ thống Đảm bảo Chất lượng Thực phẩm	Bắt buộc	3	3	0	Biostatistics (HT)
	BTFT306IU	Food Packaging and Food Additives	Bao bì và Phụ gia Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
		IU Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
	Tổng cộng				21	18	3	
HK hè	BTFT419IU	Internship 1	Thực tập ngành nghề 1	Bắt buộc	3	0	3	tích lũy tối thiểu 90 tín chỉ
HK VII	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	Biostatistics (HT)
	BTFT355IU	Food Plant Design	Thiết kế Nhà máy Thực phẩm	Bắt buộc	2	2	0	Food Quality Assurance System (HT)
	BTFT437IU	Food Sensory Analysis	Phân tích Cảm quan Thực phẩm	Bắt buộc	2	2	0	Biostatistics (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	BTFT457I U	Practice in Food Sensory Analysis	Thực hành Phân tích Cảm quan Thực phẩm	Bắt buộc	1	0	1	Food Sensory Analysis (SH), Practice in Biostatistics (HT)
	BTFT303I U	Toxicology and Food Safety	Độc tố học và An toàn Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Nutrition and Functional Foods (HT)
		Major Elective (2 courses)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
	Tổng cộng				17	14	3	
HK VIII	BTFT438I U	Food Product Development and Marketing	Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	2	2	0	Food Sensory Analysis (HT), Food Laws and Standards (HT)
	BTFT458I U	Practice in Food Product Development and Marketing	Thực hành Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	1	0	1	Food Product Development and Marketing (SH), Practice in Food Sensory Analysis (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	BTFT411IU	Post – harvest Technologies	Công nghệ Sau thu hoạch	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BTFT337IU	Food Microbiology Analysis	Phân tích Vi sinh Thực phẩm	Bắt buộc	2	2	0	Food Microbiology (HT)
	BTFT358IU	Practice in Food Microbiology Analysis	Thực hành Phân tích Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology Analysis (SH) Practice in Food Microbiology (HT)
	BTFT461IU	Food Physics and Colloids	Vật lý Thực phẩm và Hệ keo	Bắt buộc	2	2	0	Food Engineering Principles (HT)
	BTFT412IU	Food Processing	Chế biến Thực phẩm	Bắt buộc	2	2	0	Food Engineering Principles (HT)
		Major Elective (1 course)	Môn tự chọn chuyên ngành (1 môn)	Tự chọn	6	4	2	
	Tổng cộng				19	15	4	
HK hè	BTFT469IU	Internship 2	Thực tập ngành nghề 2	Bắt buộc	3	0	3	tích lũy tối thiểu 110 tín chỉ

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK IX	BT179IU	Thesis	Luận văn tốt nghiệp	Bắt buộc	12	0	12	tích lũy tối thiểu 124 tín chỉ
Tổng cộng					150	118	32	

10.4. Trình độ IE0

Bảng 9. Kế hoạch giảng dạy đối với người học đạt trình độ IE0

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK I	ENTP00	IE0	TA bổ trợ 0	Bắt buộc	17	17	0	
	ENTP01	IE1	TA bổ trợ 1	Bắt buộc	17	17	0	
	Tổng cộng				34	34	0	
HK II	ENTP02	IE2	TA bổ trợ 2	Bắt buộc	13	13	0	
	PT001IU	Physical Training 1	GD thể chất 1	Bắt buộc	3	0	3	
	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 Mac Lenin	Bắt buộc	2	2	0	
	Tổng cộng				21	18	3	
HK hè	MA001IU	Calculus 1	Toán cao cấp 1	Bắt buộc	4	4	0	
	PH013IU	Physics 1	Vật lý 1	Bắt buộc	2	2	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	PE017IU	Scientific socialism	Chủ nghĩa xã hội khoa học	Bắt buộc	2	2	0	
	Tổng cộng				8	8	0	
HK III	PT002IU	Physical Training 2	GD thể chất 2	Bắt buộc	3	0	3	
	PH014IU	Physics 2	Vật lý 2	Bắt buộc	2	2	0	
	BTFT201IU	Introduction to Food Science and Technology	Nhập môn Khoa học và Công nghệ Thực phẩm	Bắt buộc	3	3	0	
	BT311IU	Biology	Sinh học đại cương	Bắt buộc	3	3	0	
	CH011IU	Chemistry for Engineers	Hóa đại cương	Bắt buộc	3	3	0	
	CH012IU	Chemistry Laboratory	Thực hành Hóa đại cương	Bắt buộc	1	0	1	
	EN007IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	EN008IU	Academic English 1	Tiếng anh chuyên ngành 1	Bắt buộc	2	2	0	
	PE018IU	History of Vietnamese Communist Party	Lịch sử Đảng CSVN	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism (HT), Scientific socialism (HT)
	Tổng cộng				21	17	4	
HK IV	MA019IU	Calculus 2	Toán cao cấp 2	Bắt buộc	4	4	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
	BTFT156IU	Food Chemistry and Biochemistry	Hóa học và Hóa sinh Thực phẩm	Bắt buộc	3	3	0	
	CH009IU	Organic Chemistry	Hóa hữu cơ	Bắt buộc	3	3	0	
	EN011IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	EN012IU	Academic English 2	Tiếng anh chuyên ngành 2	Bắt buộc	2	2	0	
	BTFT157IU	Food Sustainability	Phát triển Bền vững Thực phẩm	Bắt buộc	2	2	0	
	BT317IU	Biostatistics	Thống kê Sinh học	Bắt buộc	2	2	0	
	BT318IU	Practice in Biostatistics	Thực hành Thống kê Sinh học	Bắt buộc	1	0	1	Biostatistics (SH)
	Tổng cộng				19	18	1	
HK V	PE021IU	General Law	Pháp luật đại cương	Bắt buộc	3	3	0	
	BTFT205IU	Nutrition and Functional Foods	Dinh dưỡng và Thực phẩm Chức năng	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BTFT236IU	Enzyme and Food Fermentation	Enzyme và Lên men Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BTFT256IU	Practice in Enzyme and	Thực hành Enzyme và Lên men Thực phẩm	Bắt buộc	1	0	1	Enzyme and Food

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
		Food Fermentation						Fermentation (SH)
	BTFT203IU	Food Engineering Principles	Các nguyên lý Kỹ thuật Thực phẩm	Bắt buộc	4	4	0	Physics 2 (HT)
	BTFT234IU	Food Microbiology	Vi sinh Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
	BTFT254IU	Practice in Food Microbiology	Thực hành Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology (SH)
	BTFT306IU	Food Packaging and Food Additives	Bao bì và Phụ gia Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT)
	Tổng cộng				21	19	2	
HK VI	PE019IU	Ho Chi Minh's Thoughts	Tư tưởng Hồ Chí Minh	Bắt buộc	2	2	0	Philosophy of Marxism and Leninism (HT), Political economics of Marxism and Leninism (HT), Scientific socialism (HT)
	BTFT312IU	Food Laws and Standards	Luật Thực phẩm và Tiêu chuẩn Thực phẩm	Bắt buộc	2	2	0	
	BTFT332IU	Food Analysis	Phân tích Thực phẩm	Bắt buộc	3	3	0	Organic Chemistry (HT), Introduction to Food

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
								Science and Technology (HT)
	BTFT352IU	Practice in Food Analysis	Thực hành Phân tích Thực phẩm	Bắt buộc	1	0	1	Food Analysis (SH)
	BTFT331IU	Food Unit Operations 1	Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT351IU	Practice in Food Unit Operations 1	Thực hành Quá trình và Thiết bị Thực phẩm 1	Bắt buộc	1	0	1	Food Unit Operations 1 (SH)
	BTFT305IU	Food Quality Assurance System	Hệ thống Đảm bảo Chất lượng Thực phẩm	Bắt buộc	3	3	0	Biostatistics (HT)
	BTFT337IU	Food Microbiology Analysis	Phân tích Vi sinh Thực phẩm	Bắt buộc	2	2	0	Food Microbiology (HT)
	BTFT358IU	Practice in Food Microbiology Analysis (0,1)	Thực hành Phân tích Vi sinh Thực phẩm	Bắt buộc	1	0	1	Food Microbiology Analysis (SH) Practice in Food Microbiology (HT)
		IU Free Elective	Môn tự chọn IU		3	3	0	
	Tổng cộng				21	18	3	
HK hè	BTFT419IU	Internship 1	Thực tập ngành nghề 1	Bắt buộc	3	0	3	tích lũy tối thiểu 90 tín chỉ

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK VII	BTFT334IU	Food Unit Operations 2	Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Engineering Principles (HT)
	BTFT354IU	Practice in Food Unit Operations 2	Thực hành Quá trình và Thiết bị Thực phẩm 2	Bắt buộc	1	0	1	Food Unit Operations 2 (SH)
	BTFT437IU	Food Sensory Analysis	Phân tích Cảm quan Thực phẩm	Bắt buộc	2	2	0	Biostatistics (HT)
	BTFT457IU	Practice in Food Sensory Analysis (0,1)	Thực hành Phân tích Cảm quan Thực phẩm	Bắt buộc	1	0	1	Food Sensory Analysis (SH), Practice in Biostatistics (HT)
	BTFT303IU	Toxicology and Food Safety	Độc tố học và An toàn Thực phẩm	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Nutrition and Functional Foods (HT)
	BTFT355IU	Food Plant Design	Thiết kế Nhà máy Thực phẩm	Bắt buộc	2	2	0	Food Quality Assurance System (HT)
		Free Elective	Môn tự chọn IU	Tự chọn	3	3	0	
		Major Elective (2 course)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
	Tổng cộng				21	17	4	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
HK VIII	BTFT438IU	Food Product Development and Marketing	Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	2	2	0	Food Sensory Analysis (HT), Food Laws and Standards (HT)
	BTFT458IU	Practice in Food Product Development and Marketing	Thực hành Phát triển Sản phẩm Thực phẩm và Tiếp thị	Bắt buộc	1	0	1	Food Product Development and Marketing (SH), Practice in Food Sensory Analysis (HT)
	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	Biostatistics (HT)
	BTFT411IU	Post – harvest Technologies	Công nghệ Sau thu hoạch	Bắt buộc	3	3	0	Introduction to Food Science and Technology (HT), Food Chemistry and Biochemistry (HT)
	BTFT461IU	Food Physics and Colloids	Vật lý Thực phẩm và Hệ keo	Bắt buộc	2	2	0	Food Engineering Principles (HT)
	BTFT412IU	Food Processing	Chế biến Thực phẩm	Bắt buộc	2	2	0	Food Engineering Principles (HT)

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/tự chọn)	Tín chỉ			MH song hành (SH) Môn học trước (HT)
		Tiếng Anh	Tiếng Việt		Tổng cộng	Lý thuyết	Thực hành	
		Major Elective (2 courses)	Môn tự chọn chuyên ngành (2 môn)	Tự chọn	6	4	2	
		Tổng cộng			19	16	3	
HK hè	BTFT469IU	Internship 2	Thực tập ngành nghề 2	Bắt buộc	3	0	3	tích lũy tối thiểu 110 tín chỉ
HK IX	BT179IU	Thesis	Luận văn tốt nghiệp	Bắt buộc	12	0	12	tích lũy tối thiểu 124 tín chỉ
Tổng cộng					150	118	32	

Danh sách các môn tự chọn IU

STT	Môn tự chọn IU (tối thiểu 6 tín chỉ)							
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	IS050IU	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	

Danh sách các môn tự chọn chuyên ngành

STT	Môn tự chọn chuyên ngành (tối thiểu 12 tín chỉ)							
1	BTFT441IU	Dairy Product Technology	Công nghệ Chế biến Sữa và Các sản phẩm sữa	Tự chọn	2	2	0	Food Unit Operations 1 (HT)
2	BTFT451IU	Practice in Dairy Product Technology	Thực hành Công nghệ Chế biến Sữa và Các sản phẩm sữa	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Dairy Product Technology (SH)
3	BTFT442IU	Beverage Technology	Công nghệ Đồ uống	Tự chọn	2	2	0	Food Unit Operations 1 (HT)
4	BTFT452IU	Practice in Beverage Technology	Thực hành Công nghệ Đồ uống	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Beverage Technology (SH)
5	BTFT443IU	Cereal Product Technology	Công nghệ Chế biến Lương thực	Tự chọn	2	2	0	Food Unit Operations 1 (HT)
6	BTFT453IU	Practice in Cereal Product Technology	Thực hành Công nghệ Chế biến Lương thực	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Cereal Product Technology (SH)
7	BTFT449IU	Vegetable oil and essential oil technology	Công nghệ Dầu và Tinh dầu	Tự chọn	2	2	0	Food Unit Operations 1 (HT)
8	BTFT459IU	Practice in Vegetable oil and essential oil technology	Thực hành Công nghệ Dầu và Tinh dầu	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Vegetable oil and essential oil technology (SH)
9	BTFT445IU	Meat Product Technology	Công nghệ Chế biến Các Sản phẩm thịt	Tự chọn	2	2	0	Food Unit Operations 1 (HT)

STT	Môn tự chọn chuyên ngành (tối thiểu 12 tín chỉ)							
10	BTFT455IU	Practice in Meat Product Technology	Thực hành Công nghệ Chế biến Các Sản phẩm thịt	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Meat Product Technology (SH)
11	BTFT446IU	Technology of Coffee, Tea and Cacao	Công nghệ Chế biến Chè, Cà phê và Cacao	Tự chọn	2	2	0	Food Unit Operations 1 (HT)
12	BTFT456IU	Practice in Technology of Coffee, Tea and Cacao	Thực hành Công nghệ Chế biến Chè, Cà phê và Cacao	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Technology of Coffee, Tea and Cacao (SH)
13	BTFT447IU	Confectionery Product Technology	Công nghệ chế biến bánh kẹo	Tự chọn	2	2	0	Food Unit Operations 1 (HT)
14	BTFT457IU	Practice in Confectionery Product Technology	Thực hành Công nghệ chế biến bánh kẹo	Tự chọn	1	0	1	Practice in Food Unit Operations 1 (HT) Confectionery Product Technology (SH)

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 12.

Bảng 10. 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 tập 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 (Kinh tế chính trị Mác-Lenin)			1		2		
16	PE017IU	Scientific socialism (Chủ nghĩa xã hội khoa học)			1		2		
17	PE018IU	History of Vietnamese Communist Party (Lịch sử ĐCSVN)			1		2		
18	PE019IU	Ho Chi Minh's Thoughts (Tư tưởng HCM)			1		2		
19	BT317IU	Biostatistics (Thống kê sinh học)	3						1
20	BT318IU	Practice in Biostatistics (Thực hành thống kê sinh học)				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		
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		

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		
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	BTFT419IU	Internship 1 (Thực tập ngành nghề 1)			3		3		2
52	BTFT469IU	Internship 2 (Thực tập ngành nghề 2)	4		3	4			
53	BT179IU	Thesis (Luận văn tốt nghiệp)		5	3	3		4	2
Các môn chuyên ngành tự chọn									
54	BTFT441IU	Dairy Product Technology (Công nghệ chế biến sữa và các sản phẩm sữa)	4	4	3		4		
55	BTFT451IU	Practice in Dairy Product Technology (Thực hành Công nghệ chế biến sữa và các sản phẩm sữa)	4				4	4	
56	BTFT442IU	Beverage Technology (Công nghệ đồ uống)	4	4	3		4		

57	BTFT452IU	Practice in Beverage Technology (Thực hành Công nghệ đồ uống)	4				4	4	
58	BTFT443IU	Cereal Product Technology (Công nghệ chế biến lương thực)	4	4	3		4		
59	BTFT453IU	Practice in Cereal Product Technology (Thực hành Công nghệ chế biến lương thực)	4				4	4	
60	BTFT449IU	Vegetable oil and essential oil technology (Công nghệ dầu và tinh dầu)	4	4	3		4		
61	BTFT459IU	Practice in Vegetable oil and essential oil technology (Thực hành Công nghệ dầu và tinh dầu)	4				4	4	
62	BTFT445IU	Meat Product Technology (Công nghệ chế biến các sản phẩm thịt)	4	4	3		4		

63	BTFT455IU	Practice in Meat Product Technology (Thực hành Công nghệ chế biến các sản phẩm thịt)	4				4	4	
64	BTFT446IU	Technology of Coffee, Tea and Cacao (Công nghệ chế biến chè, cà phê, ca-cao)	4	4	3		4		
65	BTFT456IU	Practice in Technology of Coffee, Tea and Cacao (Thực hành Công nghệ chế biến chè, cà phê, ca-cao)	4				4	4	
66	BTFT447IU	Confectionery Product Technology (Công nghệ chế biến bánh kẹo)	4	4	3		4		
67	BTFT457IU	Practice in Confectionery Product Technology (Thực hành Công nghệ chế biến bánh kẹo)	4				4	4	
	Các môn IU tự chọn tự do								
68	BT217IU	Molecular Genetics (Di truyền phân tử)	3						
69	BT405IU	Physical Chemistry (Hóa lý)	3						

[illegible]

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 nội dung chương trình đào tạo)

Tên môn học (tiếng Anh, tiếng Việt): Philosophy of Marxism and Leninism (Triết học Mac Lenin)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Political economics of Marxism and Leninism (Kinh tế chính trị Mac Lenin)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: không
- 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.

Tên môn học (tiếng Anh, tiếng Việt): Scientific socialism (Chủ nghĩa xã hội khoa học)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: không
- 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.

Tên môn học (tiếng Anh, tiếng Việt): History of Vietnamese Communist Party (Lịch sử Đảng CSVN)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)

- Môn học trước: Philosophy of Marxism and Leninism, Political economics of of Marxism and Leninism

- 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).

Tên môn học (tiếng Anh, tiếng Việt): Ho Chi Minh's Thoughts (Tư tưởng Hồ Chí Minh)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)

- Môn học trước: Philosophy of Marxism and Leninism, Political economics of Marxism and Leninism 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.

Tên môn học (tiếng Anh, tiếng Việt): Engineering Ethics and Professional Skills (Đạo đức và kỹ năng nghề nghiệp)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Critical Thinking (Tư duy phân tích)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): General Law (Pháp luật đại cương)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Academic English 1 (Tiếng anh chuyên ngành 1)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 4 (4 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Academic English 2 (Tiếng anh chuyên ngành 2)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 4 (4 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Calculus 1 (Toán cao cấp 1)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 4 (4 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Physics 1 (Vật lý 1)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Biology (Sinh học đại cương)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Chemistry for Engineers (Hóa đại cương)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Chemistry Laboratory (Thực hành Hóa đại cương)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Điều kiện tiên quyết/Môn học trước: không
- 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 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.

Tên môn học (tiếng Anh, tiếng Việt): Calculus 2 (Toán cao cấp 2)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 4 (4 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Physics 2 (Vật lý 2)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Biostatistics (Thống kê sinh học)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: không
- Mô tả nội dung môn học:

This subject will provide knowledge on following:

- Scope, nature, tools, language, and interpretation of elementary statistics.
- Descriptive statistics; graphical and numerical representation of information; measures of location, dispersion, position, and dependence; exploratory data analysis.
- Elementary probability theory, discrete and continuous probability models.
- Inferential statistics, point and interval estimation, tests of statistical hypotheses.
- Inferences involving one or two populations, ANOVA, correlation and regression analysis, and chi-square tests; use of statistical computer packages (SPSS)

Tên môn học (tiếng Anh, tiếng Việt): Practice in Biostatistics (Thực hành thống kê sinh học)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Điều kiện tiên quyết/Môn học trước: không
- Mô tả nội dung môn học:

The course will introduce students to the scope, nature, tools, language, and interpretation of elementary statistics. It will include descriptive statistics, inferential statistics, types of hypothesis testing methods, usage of statistical computer packages (Data analysis in Excel)

Tên môn học (tiếng Anh, tiếng Việt): Environmental Science (Khoa học môi trường)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)
- Điều kiện tiên quyết/Môn học trước: không
- Mô tả nội dung môn học:

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.

Tên môn học (tiếng Anh, tiếng Việt): Project Management (Quản lý dự án)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): E-Logistics and Supply chain Management (Hậu cần & quản lý chuỗi cung ứng)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Principles of Marketing (Nguyên lý Marketing)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Organic Chemistry (Hóa hữu cơ)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Introduction to Food Science and Technology (Nhập môn Khoa học và Công nghệ Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Engineering Principles (Các nguyên lý Kỹ thuật Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 4 (4 lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Chemistry and Biochemistry (Hóa học và hóa sinh thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: không
- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Sustainability (Phát triển bền vững thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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 environment and meet sustainability.

Tên môn học (tiếng Anh, tiếng Việt): Food Microbiology (Vi sinh thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)
- Môn học trước: Introduction to Food Science and Technology
- Mô tả nội dung môn học:

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

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Microbiology (Thực hành Vi sinh thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)

- Môn học song hành: Food Microbiology

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Nutrition and Functional Foods (Dinh dưỡng và Thực phẩm chức năng)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

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

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Unit Operations 1 (Quá trình và thiết bị Thực phẩm 1)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

- Môn học trước: Introduction to Food Science and Technology, 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Unit Operations 1 (Thực hành Quá trình và thiết bị Thực phẩm 1)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Physics and Colloids (vật lý thực phẩm và hệ keo)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 Lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Analysis (Phân tích Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)
- Môn học trước: Organic Chemistry, 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Analysis (Thực hành Phân tích Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Enzyme and Food Fermentation (Enzyme và Lên men Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)

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

Tên môn học (tiếng Anh, tiếng Việt): Practice in Enzyme and Food Fermentation (Thực hành Enzyme và Lên men Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)

- Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Toxicology and Food Safety (Độc tố học và An toàn Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)

- Môn học trước: Introduction to Food Science and Technology, Nutrition and Functional Foods

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Packaging and Food Additives (Bao bì và Phụ gia Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)

- Môn học trước: Introduction to Food Science and Technology

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Unit Operations 2 (Quá trình và thiết bị Thực phẩm 2)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)

- Môn học trước: Introduction to Food Science and Technology, 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Unit Operations 2 (Thực hành Quá trình và thiết bị Thực phẩm 2)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)

- Môn học song hành: 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

Tên môn học (tiếng Anh, tiếng Việt): Food Quality Assurance System (Các hệ thống đảm bảo chất lượng Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)

- Môn học trước: Biostatistics

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Laws and Standards (Luật thực phẩm và tiêu chuẩn thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 Lý thuyết)

- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Microbiology Analysis (Phân tích vi sinh Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 Lý thuyết)

- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Microbiology Analysis (Thực hành Phân tích vi sinh Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Microbiology; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Sensory Analysis (Phân tích cảm quan Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 Lý thuyết)
- Môn học trước: Biostatistics
- 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

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Sensory Analysis (Thực hành Phân tích cảm quan Thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)

- Môn học trước: Practice in Biostatistics; Môn học song hành: 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

Tên môn học (tiếng Anh, tiếng Việt): Food Product Development and Marketing (Phát triển sản phẩm và tiếp thị)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)

- Môn học trước: Food Sensory Analysis, 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Food Product Development and Marketing (Thực hành Phát triển sản phẩm và tiếp thị)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)

- Môn học trước: Practice in Food Sensory Analysis; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Scientific Writing and Design of experiments for food science (Viết báo cáo khoa học và thiết kế thí nghiệm trong khoa học thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

- Môn học trước: Biostatistics

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Post – harvest Technologies (Công nghệ sau thu hoạch)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

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

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Plant Design (Thiết kế nhà máy thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)

- Môn học trước: Food Quality Assurance System

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Food Processing (Chế biến thực phẩm)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)

- Môn học trước: Food Quality Assurance System

- 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.

Tên môn học (tiếng Anh, tiếng Việt): Molecular Genetics (Di truyền phân tử)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 lý thuyết)

- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Physical Chemistry (Hóa lý)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)

- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Mass Transfer Operations (Quá trình và thiết bị truyền khối)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 Lý thuyết)
- Điều kiện tiên quyết/Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Dairy Product Technology (Công nghệ chế biến sữa và các sản phẩm sữa)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Dairy Product Technology (Thực hành Công nghệ chế biến sữa và các sản phẩm sữa)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Beverage Technology (Công nghệ đồ uống)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Môn học trước: 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

Tên môn học (tiếng Anh, tiếng Việt): Practice in Beverage Technology (Thực hành Công nghệ đồ uống)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Cereal Product Technology (Công nghệ chế biến lương thực)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Cereal Product Technology (Thực hành Công nghệ chế biến lương thực)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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. Labwork.

Tên môn học (tiếng Anh, tiếng Việt): Vegetable oil and essential oil technology (Công nghệ dầu và tinh dầu)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Vegetable oil and essential oil technology (Thực hành Công nghệ dầu và tinh dầu)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Meat Product Technology (Công nghệ chế biến các sản phẩm thịt)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
 - Môn học trước: 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

Tên môn học (tiếng Anh, tiếng Việt): Practice in Meat Product Technology (Thực hành Công nghệ chế biến các sản phẩm thịt)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Technology of Coffee, Tea and Cocoa (Công nghệ chế biến chè, cà phê, ca-cao)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Môn học trước: 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

Tên môn học (tiếng Anh, tiếng Việt): Practice in Technology of Coffee, Tea and Cacao (Thực hành Công nghệ chế biến chè, cà phê, ca-cao)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Confectionery Product Technology (Công nghệ chế biến bánh kẹo)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 2 (2 lý thuyết)
- Môn học trước: 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.

Tên môn học (tiếng Anh, tiếng Việt): Practice in Confectionery Product Technology (Thực hành Công nghệ chế biến bánh kẹo)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 1 (1 thực hành)
- Môn học trước: Practice in Food Unit Operations 1; Môn học song hành: 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.

Tên môn học (tiếng Anh, tiếng Việt): Internship 1 (Thực tập ngành nghề 1)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 thực hành)
- Điều kiện tiên quyết: tích lũy tối thiểu 90 tín chỉ
- Mô tả nội dung môn học:
- To whom working at manufacturing factories: Observing and understanding the technological process of main product(s) in the factories. Understanding the structure and operating manufacturing machines and equipment, and product QA and QC activities.
- To whom working at research institutes: Learning how to do research: doing research. Understanding research methods. Understanding analytical equipment and techniques. Operating research equipment and apparatus. Learning how to write a scientific paper.
- To whom 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.

Tên môn học (tiếng Anh, tiếng Việt): Internship 2 (Thực tập ngành nghề 2)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 3 (3 thực hành)
- Điều kiện tiên quyết: tích lũy tối thiểu 110 tín chỉ
- Mô tả nội dung môn học:
- To whom working at manufacturing factories: Understanding the structure and operating manufacturing machines and equipment, and product QA and QC activities. Find possible solutions for the technical issues in the factories.
- To whom working at research institutes: Learning how to do research: doing research. Understanding research methods. Understanding analytical equipment and techniques. Identifying research issues and doing research to tackle them. Learning how to write a scientific paper.

- To whom working at food service establishments: Observing and understanding procedures, regulations, and structures of organizations providing food services (food training, certification, food quality and safety). Identifying potential issues and finding possible solutions.

Tên môn học (tiếng Anh, tiếng Việt): Thesis (Luận văn tốt nghiệp)

- Số tín chỉ: (ghi rõ số tín chỉ lý thuyết và thực hành): 12 (12 thực hành)

- Điều kiện 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 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.

TRƯỜNG KHOA



Nguyễn Văn Thuận

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG




Đinh Đức Anh Vũ



Phụ lục I

**NỘI DUNG ĐIỀU CHỈNH CHƯƠNG TRÌNH ĐÀO TẠO
NGÀNH CÔNG NGHỆ THỰC PHẨM KHÓA 2024 SO VỚI KHÓA 2023**

(Kèm theo Quyết định số 760 /QĐ-ĐHQT ngày 09 tháng 7 năm 2024
Của Hiệu trưởng Trường Đại học Quốc tế)

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

Stt	Tên môn học	Mã MH	Nhóm
1	Dairy Product Technology	BTFT431IU	Tự chọn
2	Beverage Technology	BTFT432IU	Tự chọn
3	Cereal Product Technology	BTFT433IU	Tự chọn
4	Vegetable oil and essential oil technology	BTFT439IU	Tự chọn
5	Meat Product Technology	BTFT435IU	Tự chọn
6	Technology of Coffee, Tea and Cacao	BTFT436IU	Tự chọn
7	Food Physics and Colloids	BTFT460IU	Bắt buộc
8	Food Plant Design	BTFT359IU	Bắt buộc

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

Stt	Tên môn học	Mã MH	Số TC	Nhóm
1	Food Processing	BTFT412IU	2	Bắt buộc
2	Dairy Product Technology	BTFT441IU	2	Tự chọn
3	Beverage Technology	BTFT442IU	2	Tự chọn
4	Cereal Product Technology	BTFT443IU	2	Tự chọn
5	Vegetable oil and essential oil technology	BTFT449IU	2	Tự chọn
6	Meat Product Technology	BTFT445IU	2	Tự chọn
7	Technology of Coffee, Tea and Cacao	BTFT446IU	2	Tự chọn

Stt	Tên môn học	Mã MH	Số TC	Nhóm
8	Confectionery Product Technology	BTFT447IU	2	Tự chọn
9	Practice in Confectionery Product Technology	BTFT457IU	1	Tự chọn

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

Môn học không còn trong chương trình đào tạo là môn bắt buộc và chưa từng vận hành. Khoa CNSH đề nghị được thay thế như sau:

Tên MH cũ	Mã MH	Số TC	Tên MH mới	Mã MH	Số TC
Food Physics and Colloids	BTFT460IU	3	Food Physics and Colloids	BTFT461IU	2
Food Plant Design	BTFT359IU	3	Food Plant Design	BTFT355IU	2
			Food Processing	BTFT412IU	2

Vì CTĐT của khóa 2023 đang vận hành không bị ảnh hưởng bởi sự điều chỉnh CTĐT 2024 do đó kính đề nghị Nhà trường cho phép CTĐT này vận hành cho khóa 2023 trở về sau.

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 II

ĐỀ CƯƠNG CHI TIẾT CÁC MÔN HỌC

(Kèm theo Quyết định số 760/QĐ-ĐHQT ngày 09 tháng 7 năm 2024
Của Hiệu trưởng Trường Đại học Quốc tế)

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

Triết học Mác-Lênin

(Philosophy Marx - Lenin)

1. Thông tin chung

Tên môn học (tiếng Việt):	Triết học Mác-Lênin
Tên môn học (tiếng Anh):	Philosophy Marx – Lenin
Mã số môn học:	PE015IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	3
<i>Số tiết lý thuyết:</i>	<i>30 (trên lớp)</i>
<i>Số tiết thực hành:</i>	<i>15 (trên lớp)</i>
<i>Số tiết tự học:</i>	<i>90 (về nhà)</i>
Giảng viên phụ trách	Khoa Chính trị - Hành chính, ĐHQG-HCM

2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

- 2.1. Môn học trang bị cho sinh viên những nội dung cơ bản về thế giới quan, phương pháp luận triết học Mác - Lênin.
- 2.2. Giúp cho sinh viên vận dụng những tri thức về thế giới quan, phương pháp luận triết học triết học Mác - Lênin 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.

3. Mô tả môn học (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về triết học Mác-Lênin

4. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Giáo trình Triết học Mác - Lênin*, Nxb. Chính trị quốc

gia, Hà N

- Hội đồng Trung ương (2008), *Giáo trình Triết học Mác-Lênin*, 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.

5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
5.1. Kiến thức					
LO.1	TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI	LO. 1.1 - Khái lược được triết học, một số khái niệm cơ bản trong triết học	2.1	1.1.3	I3
		LO. 1.2 - Nhận biết được sự đối lập giữa chủ nghĩa duy vật và chủ nghĩa duy tâm trong việc giải quyết vấn đề cơ bản của triết học			
		LO. 1.3 - Nắm được chủ nghĩa duy vật biện chứng - hình thức phát triển cao nhất của chủ nghĩa duy vật biện chứng			
		LO. 1.4 - Nắm rõ được sự ra đời, đối tượng, chức năng và vai trò của triết học Mác - Lênin			
LO.2	CHỦ NGHĨA DUY VẬT BIỆN CHỨNG	LO.2.1- Hiểu rõ vật chất theo quan điểm của chủ nghĩa duy vật biện chứng	2.1	1.1.3	T4
		LO.2.2 - Hiểu rõ ý thức theo quan điểm của chủ nghĩa duy vật biện chứng	2.1		
		LO.2.3 - Giải quyết được mối quan hệ giữa vật chất và ý thức theo quan điểm của chủ nghĩa duy vật biện chứng	2.1		

		LO.2.4 - Hiểu được phép biện chứng và phép biện chứng duy vật	2.1		
		LO.2.5 - Hiểu rõ được hai nguyên lý cơ bản của phép biện chứng duy vật và rút ra ý nghĩa phương pháp luận của từng nguyên lý	2.1 2.2		
		LO.2.6 - Hiểu rõ được các cặp phạm trù cơ bản của phép biện chứng duy vật và rút ra ý nghĩa phương pháp luận từng cặp phạm trù	2.1 2.2		
		LO.2.7 - Hiểu rõ được các quy luật cơ bản của cơ bản của phép biện chứng duy vật và rút ra ý nghĩa phương pháp luận từng quy luật	2.1 2.2		T4
		LO.2.8 - Hiểu rõ được thực tiễn, nhận thức, vai trò của thực tiễn đối với nhận thức và chân lý	2.1		
LO.3	CHỦ NGHĨA DUY VẬT LỊCH SỬ	LO.3.1 - Hiểu được vai trò của sản xuất vật chất và phương thức sản xuất đối với sự tồn tại và phát triển xã hội	2.1 2.2	1.1.3	T4
		LO.3.2 - Hiểu rõ được mối quan hệ biện chứng giữa lực lượng sản xuất và quan hệ sản xuất			
		LO.3.3 - Hiểu rõ được mối quan hệ biện chứng giữa CSHT và KTTT; sự phát triển tự nhiên của các hình thái KT-XH			
		LO.3.4 - Hiểu rõ được giai cấp, đấu tranh giai cấp; dân tộc và mối quan hệ giữa giai			

		cấp, dân tộc và nhân loại			
		LO.3.5 - Hiểu rõ được nhà nước và mạng xã hội			
		LO.3.6 - Hiểu rõ được mối quan hệ biện chứng giữa tồn tại xã hội và ý thức xã hội			
		LO.3.7 - Hiểu rõ được con người bản chất con người; hiện tượng tha hóa và giải phóng con người mối quan hệ giữa cá nhân và xã hội, vai trò của quần chúng nhân dân			
5.2. Kỹ năng					
LO.4	THỂ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.4.1. Có kỹ năng khái quát hóa để rút ra <i>Từ khóa tri thức</i> đối với mỗi nội dung và tư duy có hệ thống	2.1 2.2	2.1.1 2.3.1	U4
		LO.4.2. Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn		2.4.4	
		LO.4.3. Có kỹ năng giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc		2.5 3.1.5	
5.3. Thái độ					
LO.5	THỂ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.5.1. Có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng, nhân văn của CN Mác - Lênin LO.5.2. Có ý thức, trách nhiệm cá nhân đối với tập thể, cộng đồng LO.5.3. Có nhận thức về sự cần thiết học tập, nghiên cứu suốt đời và vận dụng nó	2.1 2.2	3.1	U3

		trong cuộc sống.			

6. Kế hoạch giảng dạy theo buổi học (Course Plan):

TT (Tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 (1 tiết)	Giới thiệu về môn học	LO.1, LO.4;	Dạy: - Giới thiệu đề cương môn học - Giới thiệu nội dung đề tài thuyết trình nhóm GHW) Học ở lớp: - Chia nhóm (5 sv/nhóm) - Giới thiệu nhóm học tập Học ngoài lớp: - Chọn đề tài thuyết trình của nhóm (GHW) Đọc trước tài liệu chương 1.	
2 (15 tiết)	Chương 1 TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI	LO.1; LO.4 LO.5	Dạy: 1. TRIẾT HỌC VÀ VẤN ĐỀ CƠ BẢN CỦA TRIẾT HỌC 1. Khái lược về triết học 2. Vấn đề cơ bản của triết học 3. Biện chứng và siêu hình 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 2. Đối tượng và chức năng của triết học Mác - Lênin 3. Vai trò của triết học Mác - Lênin trong đời sống xã hội và trong sự nghiệp đổi mới ở Việt Nam hiện nay 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.	Thi giữa kỳ (Quiz)
3 (15 tiết)	Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG	LO.2 LO.4 LO.5	Dạy: 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	Thi giữa kỳ (Quiz)

			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 Nội dung của phép biện chứng duy vật 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 4. Các giai đoạn cơ bản của quá trình nhận thức Chân lý Học ở Lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 3	Thi cuối kỳ (FEX)
4 (14 tiết)	Chương 3 CHỦ NGHĨA DUY VẬT LỊCH SỬ	L0.3 L0.4 L0.5	Dạy: 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 2. Biện chứng giữa lực lượng sản xuất và quan hệ sản xuất 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 II. GIAI CẤP VÀ DÂN TỘC 160 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 2. Cách mạng xã hội 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 V. TRIẾT HỌC VỀ CON NGƯỜI 1. Khái niệm con người và bản chất con người 2. Hiện tượng tha hóa con người và vấn đề giải phóng con người 3. Quan hệ cá nhân và xã hội; vai trò của quần chúng nhân dân và lãnh tụ trong lịch sử Vấn đề con người trong sự nghiệp cách mạng	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)

			ở Việt Nam Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Hoàn thiện bài thuyết trình	

7. Đánh giá môn học

f

STT	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.2 LO.3 LO.4 LO.5
2	Quiz	Bài thi giữa	Thi theo đề thi chung	20%	Tự luận đề mở	LO.1 LO.2;
3	Die	Thảo luận, chuyên cần tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. sv có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận ít nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.4 LO.5
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận đề đóng	LO.2; LO.3; LO.4;
			Tổng cộng	100%		

8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	Nhận biết được sự đối lập giữa chủ nghĩa duy vật và chủ nghĩa duy tâm trong việc giải quyết vấn đề cơ bản của triết học; vai trò của triết học Mác – Lênin	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2 LO.4	Nắm rõ nội dung: Vật chất, ý thức và mối quan hệ giữa chúng; các nguyên	Chương 2	Thuyết trình nhóm (GHW)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của

	lý, các quy luật và các phạm trù cơ bản của phép biện chứng duy vật		Thi cuối kỳ (FEX)	GV
LO.3 LO.4	Nhận biết và nắm được nội dung của chủ nghĩa duy vật lịch sử	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV

9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
- 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 2 hoặc trực tiếp nộp cho GV buổi 1.

Tuần 4 (buổi thứ 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 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.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2020

KT. TRƯỞNG KHOA PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

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

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

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

Kinh tế chính trị Mác-Lênin
(Marxist – Leninist Political Economy)

1. Thông tin chung

Tên môn học (tiếng Việt):	Kinh tế chính trị Mác-Lênin
Tên môn học (tiếng Anh):	Marxist – Leninist Political Economy
Mã số môn học:	PE016 14
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	2
Số tiết lý thuyết:	20 (trên lớp)
Số tiết thực hành:	10 (trên lớp)
Số tiết tự học:	60 (về nhà)
Môn học song hành:	1. Triết học Mác - Lênin
Giảng viên phụ trách:	Khoa Chính trị - Hành chính, ĐHQG-HCM

2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

- 2.1. Một là, trang bị cho sinh viên những kiến thức cơ bản, cốt lõi của Kinh tế chính trị Mác – Lênin 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.
- 2.2. 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 sinh viên xây dựng trách nhiệm xã hội phù hợp trong vị trí việc làm và cuộc sống sau khi ra trường.
- 2.3. Ba là, góp phần xây dựng lập trường, ý thức hệ tư tưởng Mác – Lê nin đối với sinh viên.



3. Mô tả môn học (Course Outlines)

Nội dung chương trình gồm 6 chương: Trong đó chương 1 bàn về đối tượng, phương pháp nghiên cứu và chức năng của Kinh tế chính trị Mác – Lênin. Từ chương 2 đến chương 6 trình bày nội dung cốt lõi của Kinh tế chính trị Mác – Lênin theo mục tiêu của môn học. Cụ thể các vấn đề như: Hàng hóa, thị trường và vai trò của các chủ thể trong nền kinh tế thị trường; Sản xuất giá trị thặng dư trong nền kinh tế thị trường; Cạnh tranh và độc quyền trong nền kinh tế thị trường; Kinh tế thị trường định hướng xã hội chủ nghĩa và các quan hệ lợi ích kinh tế ở Việt Nam; Công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế ở Việt Nam.

4. Tài liệu phục vụ học tập:

- Tài liệu bắt buộc: Giáo trình kinh tế chính trị Mác – Lênin dành cho bậc đại học không chuyên kinh tế chính trị.
- Tài liệu đọc thêm::
 - + Robert, JR và Robert F. Hebert (2003), Lịch sử các học thuyết kinh tế, Bản tiếng Việt, Nxb Thống kê.
 - + Viện Kinh tế chính trị học, Học viện Chính trị quốc gia Hồ Chí Minh (2018), Giáo trình Kinh tế chính trị Mác – Lênin, NXB Lý luận Chính trị.
 - + Các. Mác – Ph. Ăng gen: Toàn tập, tập 20, tập 23, tập 25, Nxb Chính trị quốc gia, 1994.
 - + V.I.Lênin toàn tập, tập 3, tập 27, NXB Tiến bộ Maxcova, 1976.
 - + Davig Begg, Stanley Fisher, Rudiger Dornbusch, Kinh tế học, Nhà xuất bản Giáo dục Hà Nội 1992.
 - + Đảng Cộng sản Việt Nam (2016), Văn kiện Đại hội Đại biểu toàn quốc lần thứ XII, Nxb Chính trị quốc gia, Hà Nội.
 - + Đảng Cộng sản Việt Nam (2016), Báo cáo tổng kết một số vấn đề lý luận – thực tiễn qua ba mươi năm đổi mới (1986 – 2016), NXB Chính trị quốc gia, Hà Nội.
 - + Đảng Cộng sản Việt Nam (2017), Nghị quyết số 11-NQ/TW ngày 03/6/2017 về: “Hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa”
 - + Chỉ thị số 16/CT-TTg (2017) “về việc tăng cường năng lực tiếp cận cuộc cách mạng công nghiệp lần thứ 4”.
 - + Jeremy Rifkin (2014), Cuộc cách mạng công nghiệp lần thứ ba, bản dịch tiếng Việt, NXB Lao động xã hội.
 - + Manfred B. Steger (2011), Toàn cầu hóa, Nxb Tri thức.



- + Klaus Schwab (2015): Cách mạng công nghiệp lần thứ tư, Nxb Chính trị quốc gia
– Sự thật, 2018.

5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
5.1. Kiến thức					
LO.1	ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC – LÊNIN	LO.1.1 – Nắm được sự hình thành và phát triển của Kinh tế chính trị Mác – Lênin LO.1.2 – Xác định được đối tượng nghiên cứu của kinh tế chính trị Mác – Lênin. LO.1.3 – Hiểu rõ được phương pháp nghiên cứu của kinh tế chính trị Mác – Lênin LO.1.4 – Hiểu rõ các chức năng của môn học kinh tế chính trị Mác – Lênin.	2.1		I3
LO.2	HÀNG HÓA, THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THỂ THAM GIA THỊ TRƯỜNG.	LO.2.1- Hiểu rõ sản xuất hàng hóa và điều kiện ra đời của sản xuất hàng hóa LO.2.2 – Hiểu rõ hàng hóa, hai thuộc tính của hàng hóa và mối quan hệ giữa hai thuộc tính LO.2.3 – Hiểu rõ mối quan hệ giữa tính hai mặt của lao động sản xuất hàng hóa với hai thuộc tính của hàng hóa LO.2.4 – Hiểu rõ mặt chất và lượng của giá trị hàng hóa và các nhân tố ảnh hưởng đến lượng giá trị hàng hóa LO.2.5 – Hiểu rõ được nguồn gốc, bản chất và chức năng của tiền tệ. LO.2.6 – Hiểu rõ về thị trường, vai trò của thị trường, cơ chế thị trường và nền kinh tế thị trường.	2.1		T4



		LO.2.7 - Hiểu rõ được một số quy luật kinh tế chủ yếu của kinh tế thị trường.			
		LO.2.8 - Hiểu rõ vai trò của các chủ thể tham gia thị trường.			
LO.3	GIÁ TRỊ THẶNG DƯ TRONG NỀN KINH TẾ THỊ TRƯỜNG	LO.3.1 – Hiểu rõ được tư bản là gì, công thức chung của tư bản và mâu thuẫn công thức chung của tư bản.	2.1		T4
		LO.3.2 - Hiểu rõ được hàng hóa sức lao động là gì, tại sao nghiên cứu hàng hóa sức lao động giải quyết mâu thuẫn công thức chung của tư bản	2.1		
		LO.3.3 - Hiểu rõ được giá trị thặng dư là gì. Xác định được có mấy phương pháp sản xuất giá trị thặng dư.	2.1 2.3		
		LO.3.4 - Hiểu rõ được bản chất của tích lũy tư bản, nhưng nhân tố làm tăng quy mô tích lũy tư bản và hệ quả của tích lũy tư bản.	2.3		
		LO.3.5 - Hiểu rõ được các khái niệm: chi phí sản xuất, lợi nhuận, tỷ suất lợi nhuận, lợi nhuận bình quân, lợi nhuận thương nghiệp, các nhân tố ảnh hưởng đến tỷ suất lợi nhuận.	2.1		
		LO.3.6 - Hiểu rõ được lợi tức là gì.	2.1		
		LO.3.7 - Hiểu rõ được địa tô tư bản chủ nghĩa. Có mấy loại địa tô tư bản chủ nghĩa và giá cả ruộng đất.	2.1 2.3		
		LO.4.1 – Hiểu rõ được quan hệ giữa cạnh tranh và độc quyền trong nền kinh tế thị trường.	2.1		

LO.4	CẠNH TRANH VÀ ĐỘC QUYỀN TRONG NỀN KINH TẾ THỊ TRƯỜNG	LO.4.2 - Hiểu rõ được nguyên nhân hình thành độc quyền trong nền kinh tế thị trường.	2.1.	T3
		LO.4.3 - Hiểu rõ được những đặc điểm kinh tế cơ bản của độc quyền trong chủ nghĩa tư bản theo quan điểm của V.I. Lênin	2.1	
		LO.4.4 - Hiểu rõ được nguyên nhân hình thành và phát triển của chủ nghĩa tư bản độc quyền nhà nước.	2.1	
		LO.4.5 - Hiểu rõ được bản chất của chủ nghĩa tư bản độc quyền nhà nước và những biểu hiện chủ yếu của độc quyền nhà nước trong chủ nghĩa tư bản.	2.3	
		LO.4.6 – Nắm được vai trò lịch sử của chủ nghĩa tư bản.	2.1	
LO.5	KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA VÀ CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM	LO.5.1 – Hiểu rõ được khái niệm kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam	2.1	T4
		LO.5.2 - Hiểu rõ được tính tất yếu khách quan của việc phát triển kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam	2.1	
		LO.5.3 – Nắm được những đặc trưng của kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam.	2.1	
		LO.5.4 – Hiểu rõ thể chế kinh tế thị trường định hướng xã hội chủ nghĩa là gì và sự cần thiết phải hoàn thiện nó.	2.1	
		LO.5.5 – Nắm được những nội dung cơ bản của hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam	2.1	
		LO.5.6 – Hiểu rõ được khái niệm lợi ích kinh tế và quan hệ lợi ích kinh tế	2.2	
		LO.5.7 – Hiểu rõ được vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích	2.1	
		LO.6.1 – Hiểu rõ được cách mạng công nghiệp là gì, khái quát được các cuộc cách mạng đã diễn ra trong lịch sử.	2.1	T4
		LO.6.2 - Hiểu rõ vai trò của cách mạng công nghiệp đối với sự phát	2.1	



LO.6	CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP KINH TẾ QUỐC TẾ CỦA VIỆT NAM	triển.			
		LO.6.3 – Hiểu được công nghiệp hóa là gì và các mô hình công nghiệp hóa tiêu biểu trên thế giới.	2.1		
		LO.6.4 – Hiểu rõ tính tất yếu khách quan của công nghiệp hóa, hiện đại hóa ở Việt Nam.	2.1		
		LO.6.5 – Nắm được những nội dung của công nghiệp hóa, hiện đại hóa ở Việt Nam.	2.1		
		LO.6.6 – Nắm được công nghiệp hóa, hiện đại hóa ở Việt Nam trong bối cảnh của cuộc cách mạng công nghiệp lần thứ 4.	2.3		
		LO.6.7 – Hiểu rõ được hội nhập kinh tế quốc tế là gì. Vì sao hội nhập kinh tế quốc tế là sự cần thiết khách quan.	2.1		
		LO.6.8 – Nắm được những nội dung và tác động tích cực và tiêu cực của hội nhập kinh tế quốc tế.	2.3		
		LO.6.9 – Nắm được phương hướng nâng cao hiệu quả hội nhập kinh tế quốc tế trong phát triển của Việt Nam	2.3		
5.2. Kỹ năng					
LO.7	THỂ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.7.1. Có kỹ năng khái quát hóa để rút ra <i>Từ khóa tri thức</i> đối với mỗi nội dung và tư duy có hệ thống			U4
		LO.7.2. Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn	2.1		
		LO.7.3. Có kỹ năng giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc	2.2		
			2.4		
5.3. Thái độ					
LO.8	THỂ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.8.1. Có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng, nhân văn của CN Mác – Lênin			U3
		LO.8.2. Có ý thức, trách nhiệm cá nhân đối với tập thể, cộng đồng	2.1		
		LO.8.3. Có nhận thức về sự cần thiết học tập, nghiên cứu suốt đời và vận	2.2		
			2.3		

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		dụng nó trong cuộc sống.			

6. Kế hoạch giảng dạy theo buổi học (Course Plan):

TT (tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 (1 tiết)	Giới thiệu về môn học	LO.1, LO.7;	Dạy: - Tự giới thiệu về giảng viên - Giới thiệu đề cương và tài liệu môn học - Hướng dẫn cách thức dạy và học và cách đánh giá. - Giới thiệu nội dung đề tài thuyết trình nhóm GHW) Học ở lớp: - Chia nhóm (5 SV/nhóm) - Giới thiệu nhóm học tập Học ngoài lớp: - Chọn đề tài thuyết trình của nhóm (GHW) - Đọc trước tài liệu chương 1.	
2 (2 tiết)	Chương 1 ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC – LÊNIN	LO.1; LO.7 LO.8	Dạy: I. SỰ HÌNH THÀNH VÀ PHÁT TRIỂN CỦA KTCT MÁC – LÊNIN 1. Giai đoạn từ cổ đại đến thế kỷ 18 2. Giai đoạn từ sau thế kỷ 18 đến nay II. ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU CỦA KINH TẾ CHÍNH TRỊ MÁC – LÊNIN. 1. Đối tượng nghiên cứu 2. Phương pháp nghiên cứu 3. Mục đích nghiên cứu III. CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC – LÊNIN. 1. Chức năng nhận thức 2. Chức năng thực tiễn 3. Chức năng tư tưởng 4. Chức năng phương pháp luận Học ở lớp: Thảo luận và phát biểu trên lớp. Học ngoài lớp: - Phác thảo nội dung thuyết trình nhóm	Thi giữa kỳ (Quiz)



			GHW - Đọc trước tài liệu chương 2.	
3 (6 tiết)	Chương 2 HÀNG HÓA, THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THỂ THAM GIA THỊ TRƯỜNG.	LO.2 LO.7 LO.8	Dạy: I. LÝ LUẬN CỦA CÁC MÁC VỀ SẢN XUẤT HÀNG HÓA VÀ HÀNG HÓA. 1. Sản xuất hàng hóa - Khái niệm sản xuất hàng hóa - Điều kiện ra đời của sản xuất hàng hóa. 2. Hàng hóa - Khái niệm hàng hóa - Hai thuộc tính của hàng hóa - Lượng giá trị và các nhân tố ảnh hưởng đến lượng giá trị của hàng hóa - Tính hai mặt của lao động sản xuất hàng hóa. 3. Tiền - Nguồn gốc và bản chất của tiền - Chức năng của tiền 4. Dịch vụ và một số hàng hóa đặc biệt. II. THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THỂ THAM GIA THỊ TRƯỜNG. 1. Thị trường - Khái niệm về thị trường - Vai trò của thị trường. - Cơ chế thị trường - Nền kinh tế thị trường. 2. Vai trò của các chủ thể tham gia thị trường. - Người sản xuất. - Người tiêu dùng. - Các chủ thể trung gian trong thị trường. - Nhà nước. Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 3	Thi giữa kỳ (Quiz) Thi cuối kỳ (FEX)
4 (6 tiết)	Chương 3 GIÁ TRỊ THẶNG DƯ TRONG NỀN KINH TẾ THỊ TRƯỜNG	LO.3 LO.7 LO.8	Dạy: I. LÝ LUẬN CỦA CÁC MÁC VỀ GIÁ TRỊ THẶNG DƯ. 1. Nguồn gốc của giá trị thặng dư 2. Bản chất của giá trị thặng dư 3. Các phương pháp sản xuất giá trị thặng dư trong nền kinh tế thị trường tư bản chủ nghĩa. II. TÍCH LŨY TƯ BẢN. - Bản chất của tích lũy tư bản - Những nhân tố góp phần làm tăng quy mô tích lũy.	Thi giữa kỳ (Quiz) Thi cuối kỳ (FEX)

		- Một số hệ quả của tích lũy tư bản. III. CÁC HÌNH THỨC BIỂU HIỆN GIÁ TRỊ THẶNG DƯ TRONG NỀN KINH TẾ THỊ TRƯỜNG. 1. Lợi nhuận 2. Lợi tức 3. Địa tô tư bản chủ nghĩa Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Hoàn thiện bài thuyết trình Đọc trước tài liệu chương 4	
5 (5 tiết)	Chương 4 CẠNH TRANH VÀ ĐỘC QUYỀN TRONG NỀN KINH TẾ THỊ TRƯỜNG	LO.4 LO.7 LO.8 Dạy: I. QUAN HỆ GIỮA CẠNH TRANH VÀ ĐỘC QUYỀN TRONG NỀN KINH TẾ THỊ TRƯỜNG. II. ĐỘC QUYỀN VÀ ĐỘC QUYỀN NHÀ NƯỚC TRONG NỀN KINH TẾ THỊ TRƯỜNG. 1. Lý luận của V.I. Lênin về độc quyền trong nền kinh tế thị trường. - Nguyên nhân hình thành và tác động của độc quyền. - Những đặc điểm kinh tế cơ bản của độc quyền trong chủ nghĩa tư bản 2. Lý luận của V.I. Lê nin về độc quyền nhà nước trong chủ nghĩa tư bản. - Nguyên nhân ra đời và phát triển của độc quyền nhà nước trong chủ nghĩa tư bản. - Bản chất của độc quyền nhà nước trong chủ nghĩa tư bản.. - Những biểu hiện chủ yếu của độc quyền nhà nước trong chủ nghĩa tư bản. - Vai trò lịch sử của chủ nghĩa tư bản. Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 5	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)
6 (5 tiết)	Chương 5 KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA VÀ CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM	LO.5 LO.7 LO.8 Dạy: I. KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM 1. Khái niệm kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam 2. Tính tất yếu khách quan của việc phát triển kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam. 3. Đặc trưng của kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam. II. HOÀN THIỆN THỂ CHẾ KINH TẾ	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)



		THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM. 1. Sự cần thiết phải hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam 2. Hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam một số khía cạnh chủ yếu. III. CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM. 1. Lợi ích kinh tế và quan hệ lợi ích kinh tế. 2. Vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Hoàn thiện bài thuyết trình Đọc trước tài liệu chương 6	
7 (5 tiết)	Chương 6 CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP KINH TẾ QUỐC TẾ CỦA VIỆT NAM	LO.6 LO.7 LO.8 Dạy: I. CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA Ở VIỆT NAM. 1. Khái quát 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 2. Tính tất yếu khách quan và nội dung của công nghiệp hóa, hiện đại hóa ở Việt Nam. - Tính tất yếu của công nghiệp hóa, hiện đại hóa ở Việt Nam. - Nội dung công nghiệp hóa, hiện đại hóa ở Việt Nam. 3. Công nghiệp hóa, hiện đại hóa ở Việt Nam trong bối cảnh cách mạng công nghiệp lần thứ 4. II. HỘI NHẬP KINH TẾ QUỐC TẾ CỦA VIỆT NAM. 1. Khái niệm và các hình thức hội nhập kinh tế quốc tế. - Khái niệm và sự cần thiết khách quan của hội nhập kinh tế quốc tế. - Những nội dung của hội nhập kinh tế quốc tế 2. Tác động của hội nhập kinh tế quốc tế đến phát triển của Việt Nam. - Tác động tích cực. - Tác động tiêu cực 3. Phương hướng nâng cao hiệu quả hội nhập kinh tế quốc tế trong phát triển của Việt Nam	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)



		Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Hoàn thiện bài thuyết trình.	

7. Đánh giá môn học

ST T	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GH W	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.4 LO.5 LO.6 LO.7 LO.8
2	Quiz	Bài thi giữa kỳ	Thi theo đề thi chung	20%	Tự luận đề mở	LO.2 LO.3
3	DIC	Thảo luận, chuyên cần tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.7 LO.8
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận đề đóng	LO.2 LO.3 LO.4 LO.5 LO.6 LO.7 LO.8
			Tổng cộng	100%		

8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá

LO.1	Nhận biết được vị trí của Kinh tế chính trị Mác – Lênin trong hệ thống lịch sử tư tưởng kinh tế và nắm được đối tượng, phương pháp và chức năng của kinh tế chính trị Mác – Lênin.	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2 LO.7	Nắm rõ nội dung: sản xuất hàng hóa, điều kiện ra đời của sản xuất hàng hóa, khái niệm hàng hóa và hai thuộc tính của hàng hóa, chất và lượng của giá trị hàng hóa, mối quan hệ giữa tính hai mặt của lao động sản xuất hàng hóa với hai thuộc tính của hàng hóa, các nhân tố ảnh hưởng đến lượng giá trị của hàng hóa, nguồn gốc ra đời, bản chất và chức năng của tiền. Thị trường, cơ chế thị trường, nền kinh tế thị trường và vai trò các chủ thể tham gia thị trường	Chương 2	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của GV
LO.3 LO.7	Hiểu rõ và nắm được những nội dung: tư bản là gì?. Công thức chung và mâu thuẫn công thức chung của tư bản. Hàng hóa sức lao động và tính chất đặc biệt của giá trị sử dụng hàng hóa sức lao động. Giá trị thặng dư và hai phương pháp sản xuất giá trị thặng dư. Tích lũy tư bản và những nhân tố làm tăng quy mô tích lũy. Các khái niệm về chi phí sản xuất, lợi nhuận, lợi tức và địa tô tư bản chủ nghĩa	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV
LO.4 LO.7	Hiểu rõ và nắm được những nội dung: quan hệ giữa cạnh tranh và độc quyền trong nền kinh tế thị trường. Tổ chức độc quyền là gì?, nguyên nhân hình thành các tổ chức độc quyền. Những đặc điểm kinh tế cơ bản của độc quyền theo quan điểm của V.I. Lênin. Lý luận về độc quyền nhà nước trong chủ nghĩa tư bản. Vai trò lịch sử	Chương 4	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV



	của chủ nghĩa tư bản.			
LO.5 LO.7	Hiểu rõ và nắm được những nội dung: kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam, những đặc trưng của kinh tế thị trường định hướng xã hội chủ nghĩa. Thể chế kinh tế thị trường định hướng xã hội chủ nghĩa và sự cần thiết phải hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa. Lợi ích kinh tế và quan hệ lợi ích kinh tế. Vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích.	Chương 5	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV
LO.6 LO.7	Hiểu rõ và nắm được những nội dung: cách mạng công nghiệp là gì? Vai trò của cách mạng công nghiệp đối với sự phát triển. Công nghiệp hóa là gì?. Các mô hình công nghiệp hóa tiêu biểu trên thế giới. Công nghiệp hóa, hiện đại hóa ở Việt Nam là gì. Tính tất yếu khách quan phải công nghiệp hóa, hiện đại hóa ở Việt Nam. Công nghiệp hóa, hiện đại hóa ở Việt Nam trong bối cảnh cuộc cách mạng công nghiệp lần thứ 4. Hội nhập kinh tế quốc tế là gì, sự cần thiết khách quan phải hội nhập kinh tế quốc tế. Tác động của hội nhập kinh tế quốc tế của Việt Nam. Phương hướng nâng cao hiệu quả hội nhập kinh tế quốc tế.	Chương 6	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV



9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với giảng viên qua email: lethong0804@gmail.com
- 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 2 hoặc trực tiếp nộp cho GV buổi 1.

Tuần 4 (buổi thứ 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 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.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2020

KT. TRƯỞNG KHOA

PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường



ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

Chủ nghĩa xã hội khoa học (Scientific socialism)

1. Thông tin chung

Tên môn học (tiếng Việt):	Chủ nghĩa xã hội khoa học
Tên môn học (tiếng Anh):	Scientific socialism
Mã số môn học:	PE017IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	2
<i>Số tiết lý thuyết:</i>	<i>30 (trên lớp)</i>
<i>Số tiết thực hành:</i>	
<i>Số tiết tự học:</i>	<i>60 (về nhà)</i>
Môn học trước:	1. Kinh tế chính trị Mác - Lênin, 2. Triết học Mác - Lênin
Giảng viên phụ trách	Khoa Chính trị - Hành chính, ĐHQG-HCM

2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

- 2.1. Môn học trang bị cho sinh viên những nội dung cơ bản của chủ nghĩa xã hội khoa học (một trong ba bộ phận cấu thành chủ nghĩa Mác - Lênin).
- 2.2. Giúp cho sinh viên 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.

3. Mô tả môn học (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về chủ nghĩa xã hội khoa học

4. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Giáo trình Chủ nghĩa xã hội khoa học*, 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-Lenin*, 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.

5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
5.1. Kiến thức					
LO.1	NHẬP MÔN CHỦ NGHĨA XÃ HỘI KHOA HỌC	LO.1.1 – Khái lược sự ra đời Chủ nghĩa xã hội khoa học, hoàn cảnh lịch sử và vai trò của Các Mác và PH. Ăngghen	2.1	1.1.3	13
		LO.1.2 – Nhận biết được các giai đoạn phát triển cơ bản của Chủ nghĩa xã hội khoa học thể hiện qua các tác phẩm			
		LO.1.3 – Nắm rõ được đối tượng, phương pháp và ý nghĩa của việc nghiên cứu Chủ nghĩa xã hội khoa học			
LO.2	SỬ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN	LO.2.1- Hiểu rõ khái niệm giai cấp công nhân và đặc điểm của giai cấp công nhân	2.1	1.1.3	T4
		LO.2.2 – Nắm rõ nội dung, đặc điểm sứ mệnh lịch sử của giai cấp công nhân	2.1		
		LO.2.3 – Giải thích được những điều kiện quy định sứ mệnh lịch sử của giai cấp công nhân	2.1		
		LO.2.4 – Phân tích được những điểm tương đồng và khác biệt của giai cấp công nhân hiện nay và việc thực hiện sứ mệnh của giai cấp công nhân trên thế giới hiện nay	2.1 2.2		
		LO.2.5 – Nắm rõ những đặc điểm cơ bản của giai cấp công nhân Việt Nam và nội			

		dung sứ mệnh lịch sử của giai cấp công nhân Việt Nam hiện nay LO.2.6 – Trình bày được phương hướng và một số giải pháp chủ yếu để xây dựng giai cấp công nhân Việt Nam hiện nay			
LO.3	CHỦ NGHĨA XÃ HỘI VÀ THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.3.1 – Hiểu rõ Chủ nghĩa xã hội là giai đoạn đầu của hình thái kinh tế - xã hội công sản chủ nghĩa LO.3.2 – Trình bày được những đặc trưng cơ bản của chủ nghĩa xã hội LO.3.3 – Giải thích được tính tất yếu khách quan của thời kỳ quá độ lên chủ nghĩa xã hội và những đặc điểm cơ bản của thời kỳ quá độ lên chủ nghĩa xã hội LO.3.4 – Hiểu rõ đặc trưng của thời kỳ quá độ và chủ nghĩa xã hội ở Việt Nam, trình bày được những phương hướng xây dựng chủ nghĩa xã hội ở Việt Nam hiện nay	2.1	1.1.3	I3
LO.4	DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA	LO.4.1 – Giải thích được quan niệm về dân chủ và sự ra đời và phát triển dân chủ trong lịch sử xã hội loài người LO.4.2 – Nắm rõ quá trình ra đời và bản chất của nền dân chủ xã hội chủ nghĩa LO.4.3 – Hiểu được sự ra đời, bản chất và chức năng của nhà nước xã hội chủ nghĩa cũng như mối quan hệ giữa dân chủ và nhà nước LO.4.4 - hiểu được sự ra đời	2.1	1.1.3	T4

		phát triển và bản chất của nền dân chủ xã hội chủ nghĩa ở Việt Nam			
		LO.4.5 - trình bày được đặc điểm và các giải pháp cơ bản nhằm xây dựng nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam hiện nay			
LO.5	CƠ CẤU XÃ HỘI GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.5.1 – Trình bày được khái niệm cơ cấu xã hội – khái quát và sự biến đổi của cơ cấu xã hội giai cấp trong thời kì quá độ lên chủ nghĩa xã hội	2.1	1.1.3	I3
		LO.5.2 – giải thích được tính tất yếu của liên minh giai cấp, tầng trong thời kỳ quá độ lên chủ nghĩa xã hội			
		LO.5.3 – Hiểu rõ cơ cấu xã hội – giai cấp ở Việt Nam trong thời kì quá độ và trình bày những giải pháp cơ bản nhằm xây dựng, phát triển lối liên minh giai cấp, tầng lớp xã hội ở Việt Nam			
LO.6	VẤN ĐỀ DÂN TỘC VÀ TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.6.1 – Hiểu rõ khái niệm, đặc trưng cơ bản của dân tộc và quan điểm của chủ nghĩa Mác – Lenin về vấn đề dân tộc	2.1	1.1.3	T4
		LO.6.2 – Trình bày được những đặc điểm cơ bản của dân tộc ở Việt Nam và quan điểm chính sách dân tộc của Đảng và Nhà nước Việt Nam	2.1		
		LO.6.3 – Hiểu được bản chất, nguồn gốc, tính chất của tôn giáo và nguyên tắc cơ bản giải quyết vấn đề tôn giáo trong thời kỳ quá độ lên chủ nghĩa xã hội	2.1		
		LO.6.4 – Giải thích được	2.1		

		những đặc điểm tôn giáo ở Việt Nam và chính sách của Đảng và Nhà nước Việt Nam đối với tín ngưỡng tôn giáo hiện nay	2.2 2.1 2.2		
		LO.6.5 – Hiểu rõ được đặc điểm quan hệ dân tộc và tôn giáo ở Việt Nam và trình bày được các định hướng cơ bản nhằm giải quyết mối quan hệ giữa dân tộc và tôn giáo ở Việt Nam hiện nay			
LO.7	VẤN ĐỀ GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.7.1 – Khái lược được vị trí, chức năng và vai trò của gia đình trong xã hội LO.7.2 – Nhận biết được các cơ sở xây dựng gia đình trong thời kỳ quá độ lên chủ nghĩa xã hội LO.7.3 – Giải thích được sự biến đổi của gia đình Việt Nam trong thời kỳ quá độ và trình bày được những phương hướng cơ bản xây dựng và phát triển gia đình Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội	2.1	1.1.3	I3
5.2. Kỹ năng					
LO.8	THỂ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANG LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.8.1 – Có kỹ năng khái quát hóa để rút ra <i>Từ khóa trí thức</i> đối với mỗi nội dung và tư duy có hệ thống LO.8.2 – Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn LO.8.3 – Có kỹ năng giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc	2.1 2.2	2.1. 1 2.3. 1 2.4. 4	U4

LO.9	THỂ HIỆN Ý THỨC NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.9.1 – Có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng trong lý luận của chủ nghĩa Mác – Lenin về CNXH và con đường đi lên CNXH ở Việt Nam	2.1 2.2	3.1	U3
		LO.9.2 – Có ý thức, trách nhiệm cá nhân đối với tập thể, cộng đồng			
		LO.9.3 – Có nhận thức về sự cần thiết học tập, nghiên cứu suốt đời và vận dụng nó trong cuộc sống			

6. Kế hoạch giảng dạy theo buổi học (Course Plan):

TT (tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 (tiết 1)	Giới thiệu về môn học	LO.1 LO.4	Dạy: -Giới thiệu đề cương môn học -Giới thiệu nội dung đề tài thuyết trình nhóm (GHW) Học ở lớp: -Chia nhóm (5 SV/nhóm) -Giới thiệu nhóm học tập Học ngoài lớp: -Chọn đề tài thuyết trình của nhóm (GHW) -Đọc trước tài liệu chương 1.	
2	Chương 1 NHẬP MÔN CHỦ NGHĨA XÃ HỘI KHOA HỌC		Dạy: 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 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 sáng tạo chủ nghĩa xã hội khoa học trong điều kiện mới	Thi giữa kì (Quiz)

			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 3.2. Phương pháp nghiên cứu của chủ nghĩa xã hội khoa học Ý nghĩa của việc nghiên cứu chủ nghĩa xã hội khoa học 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.	
3	Chương 2 SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN	LO.2 LO.4 LO.5	Dạy: 1. QUAN ĐIỂM CƠ BẢN CỦA CHỦ NGHĨA MÁC - LEENIN 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 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 Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 3	Thi giữa kỳ (Quiz)

4	Chương 3 CHỦ NGHĨA XÃ HỘI VÀ THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.3 LO.4 LO.5	Dạy: 1.CHỦ NGHĨA XÃ HỘI 1.1. Chủ nghĩa xã hội, giai đoạn đầu của hình thái kinh tế - xã hội công sản chủ nghĩa 1.2. Điều kiện ra đời chủ nghĩa xã hội 1.3. 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 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 Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 4	Thuyết trình nhóm (GHW) Thi giữa kỳ (Quiz)
5	Chương 4 DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA	LO.2 LO.4 LO.5	Dạy: 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 3.DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC PHÁP QUYỀN XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM 3.1. Dân chủ xã hội chủ nghĩa ở Việt Nam 3.2. Nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam hiện nay 3.3. Phát huy dân chủ xã hội chủ nghĩa, xây dựng nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam Học ở lớp: Thảo luận và phát biểu Học ngoài lớp: Đọc trước tài liệu chương 5 trên lớp	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)

6	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	LO.3 LO.4 LO.5	Dạy: 1.CƠ CẤU XÃ HỘI GIAI CẤP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1.1. Khái niệm và vị trí của cơ cấu xã hội - giai cấp trong cơ cấu xã hội 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 2.LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 3.CƠ CẤU XÃ HỘI - GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP 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 Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 6	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)
7	Chương 6 VẤN ĐỀ DÂN TỘC VÀ TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.2 LO.4 LO.5	Dạy: 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 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 3.3. Phương hướng và một số giải pháp chủ yếu để xây dựng giai cấp công nhân Việt Nam hiện nay Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 7	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)
8	Chương 7		Dạy:	

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 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 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 Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Hoàn thiện bài thuyết trình	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)

7. Đánh giá môn học

STT	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.3 LO.4 LO.5 LO.6 LO.7
2	Quiz	Bài thi giữa kì	Thi theo đề thi của GV	20%	Tự luận đề mở	LO.1 LO.2 LO.3
3	DIC	Thảo luận, chuyên cần tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.3 LO.4 LO.5 LO.6 LO.7
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận đề đóng	LO.3 LO.4

						LO.5 LO.6 LO.7
			Tổng cộng	100%		

8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	Nhận biết quá trình ra đời của Chủ nghĩa xã hội khoa học và các giai đoạn phát triển cơ bản	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2 LO.4	Nắm rõ nội dung: quan điểm cơ bản của chủ nghĩa Mác - Lênin về giai cấp công nhân, nội dung, biểu hiện và ý nghĩa của sứ mệnh đó trong bối cảnh hiện nay	Chương 2	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.3 LO.4	Nhận biết và nắm được những quan điểm cơ bản của chủ nghĩa Mác - Lênin về chủ nghĩa xã hội, thời kỳ quá độ lên chủ nghĩa xã hội và sự vận dụng sáng tạo của Đảng Cộng sản Việt Nam vào điều kiện cụ thể của Việt Nam	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi giữa kỳ (Quiz)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV
LO.3 LO.4	Nhận biết và nắm được bản chất của nền dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa nói chung và ở Việt Nam nói riêng	Chương 4	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa
LO.3 LO.4	Nhận biết và nắm được 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	Chương 5	Thảo luận tại lớp (Discussion in Class), Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa

LO.3 LO.4	Nhận biết và nắm được những quan điểm cơ bản của chủ nghĩa Mác - Lênin về dân tộc, tôn giáo, mối quan hệ giữa dân tộc và tôn giáo, tầm quan trọng của vấn đề dân tộc, tôn giáo và nội dung chính sách dân tộc, tôn giáo của Đảng và Nhà nước Việt Nam	Chương 6	Thảo luận tại lớp (Discussion in Class), Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa
LO.3 LO.4	Nhận biết và nắm được 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 hiện nay.	Chương 7	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa

9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email:

daotao.spas@vnuhcm.edu.vn

- 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 2 hoặc trực tiếp nộp cho GV buổi 1.

Giảng dạy kết thúc chương 3, các nhóm 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 và nhiệt tình thảo luận, phát biểu xây dựng bài, nghiêm túc trong giờ học.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2019

KT. TRƯỞNG KHOA PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC
Lịch sử Đảng Cộng sản Việt Nam
(History of Vietnamese communist party)

1. Thông tin chung:

Tên môn học (tiếng Việt);	Lịch sử Đảng Cộng sản Việt Nam
Tên môn học (tiếng Anh):	History of Vietnamese communist party
Mã số môn học:	PE018IU
Thuộc khối kiến thức:	CƠ SỞ
Số tín chỉ:	2
<i>Số tiết lý thuyết:</i>	<i>20 (trên lớp)</i>
<i>Số tiết thực hành:</i>	<i>10 (trên lớp)</i>
<i>Số tiết tự học:</i>	<i>60 (về nhà)</i>
Môn học trước:	1. Triết học Mác - Lênin, 2. Kinh tế chính trị Mác - Lênin, 3. Chủ nghĩa xã hội khoa học
Giảng viên phụ trách	Khoa Chính trị - Hành chính, ĐHQG-HCM

2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

2.1 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).

2.2 Về tư tưởng: Thông qua các sự kiện lịch sử và các kinh nghiệm về sự lãnh đạo của Đảng để xây dựng ý thức tôn trọng sự thật khách quan, nâng cao lòng tự hào, niềm tin đối với sự nghiệp lãnh đạo của Đảng.

2.3 Về kỹ năng: Trang bị phương pháp tư duy khoa học về lịch sử, kỹ năng lựa chọn tài liệu nghiên cứu, học tập môn học và khả năng vận dụng nhận thức lịch sử vào công tác thực tiễn, phê phán quan niệm sai trái về lịch sử của Đảng.

3. Mô tả môn học (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về Lịch sử Đảng Cộng sản Việt Nam

4. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Chương trình môn học Lịch sử Đảng Cộng sản Việt Nam*, ban hành 2019.
- Hội đồng Trung ương chỉ đạo biên soạn giáo trình quốc gia các môn khoa học Mác - Lênin, Tư tưởng Hồ Chí Minh (2018), *Giáo trình Lịch sử Đảng Cộng sản Việt Nam (tái bản có sửa chữa, bổ sung)*, Nxb. Chính trị quốc gia, Hà Nội.

5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
5.1. Kiến thức					
LO.1	NHẬP MÔN ĐỐI TƯỢNG, CHỨC NĂNG, NHIỆM VỤ, NỘI DUNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU, HỌC TẬP LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM	LO. 1.1 - Nắm rõ được đối tượng, mục đích học tập, nghiên cứu và một số yêu cầu cơ bản về phương pháp học tập, nghiên cứu Lịch sử Đảng Cộng sản Việt Nam	2.1	1.1.3	13
LO.2	ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ LÃNH ĐẠO ĐẤU TRANH GIÀNH CHÍNH QUYỀN (1930-1945)	LO.2.1 - Nắm được bối cảnh lịch sử tác động đến sự ra đời của Đảng Cộng sản Việt Nam	2.1	1.1.3	T4
		LO.2.2 - Nắm được quá trình chuẩn bị các điều kiện để thành lập Đảng của Nguyễn Ái Quốc			
		LO.2.3- Nắm được nội dung hội nghị thành lập Đảng và Cương lĩnh chính trị đầu tiên của Đảng			
		LO.2.4 - Hiểu được ý nghĩa			

		lịch sử của việc thành lập Đảng Cộng sản Việt Nam			
		LO.2.5 - Nắm rõ các phong trào cách mạng 1930-1935 và các chủ trương khôi phục phong trào năm 1932-1935			
		LO.2.6 - Nắm rõ phong trào dân chủ năm 1936-1939			
		LO.2.7 - Nắm rõ phong trào giải phóng dân tộc 1939--1945			
		LO.2.8 - Hiểu rõ tính chất, ý nghĩa và kinh nghiệm của Cách mạng Tháng Tám năm 1945			
LO.3	ĐẢNG LÃNH ĐẠO HAI CUỘC KHÁNG CHIẾN, HOÀN THÀNH GIẢI PHÓNG DÂN TỘC, THỐNG NHẤT ĐẤT NƯỚC (1945-1975)	LO.3.1 - Hiểu được chủ trương xây dựng và bảo vệ chính quyền cách mạng 1945-1946	2.1	1.1.3	T4
		LO.3.2 - Hiểu rõ Đường lối kháng chiến toàn quốc chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946-1950			
		LO.3.3 - Hiểu rõ chủ trương Đẩy mạnh cuộc kháng chiến chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946 đến năm 1950			
		LO.3.4 - Hiểu rõ được Ý nghĩa lịch sử và kinh nghiệm của Đảng trong lãnh đạo kháng chiến chống thực dân Pháp và can thiệp Mỹ			
		LO.3.5 - Nắm được quá trình lãnh đạo cách mạng hai miền giai đoạn 1954-1965 của Đảng			
		LO.3.6 - Nắm vững sự lãnh đạo cách mạng cả nước giai đoạn 1965-1975 của Đảng			
		LO.3.7 - Hiểu rõ Ý nghĩa và kinh nghiệm lãnh đạo của			

		Đảng trong cuộc kháng chiến chống Mỹ, cứu nước 1954-1975			
LO.4	ĐẢNG LÃNH ĐẠO CẢ NƯỚC QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI VÀ TIẾN HÀNH CÔNG CUỘC ĐỔI MỚI (1975-2018)	LO.4.1 - Hiểu rõ chủ trương xây dựng chủ nghĩa xã hội và bảo vệ Tổ quốc 1975-1981	2.1 2.2	1.1.3	T4
		LO.4.2 - Nắm rõ nội dung Đại hội đại biểu toàn quốc lần thứ V của Đảng và các bước đột phá tiếp tục đổi mới kinh tế 1982-1986			
		LO.4.3 – Nắm rõ quan điểm Đổi mới toàn diện, đưa đất nước ra khỏi khủng hoảng kinh tế - xã hội 1986-1996 của Đảng			
		LO.4.4 - Nắm rõ thành tựu, kinh nghiệm của công cuộc đổi mới			
		LO.4.5 - Hiểu rõ những thắng lợi vĩ đại của cách mạng Việt Nam dưới sự lãnh đạo của Đảng từ năm 1930 đến 2018			

5.2. Kỹ năng

LO.5	THỂ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.5.1. Rèn luyện năng lực tư duy độc lập trong nghiên cứu đường lối, chiến lược, sách lược cách mạng của Đảng.	2.1 2.2 2.3	2.1.1 2.3.1	U4
		LO.5.2. Có tư duy phê phán, kỹ năng phân tích, tổng hợp và đánh giá những vấn đề liên quan đến môn học. Từ đó, vận dụng kiến thức đã học để chủ động, tích cực nhận thức những vấn đề chính trị, kinh tế, văn hoá, xã hội theo đường lối, chính sách, pháp luật của Đảng và Nhà nước.		2.4.4	
		LO.5.3 Có kỹ năng viết, kỹ năng làm việc cá nhân, làm việc nhóm và trình bày kết quả nghiên cứu.		2.5 3.1.5	

5.3. Thái độ					
LO.6	THỂ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.6.1. Tin tưởng vào sự lãnh đạo của Đảng đối với cách mạng Việt Nam.	2.1 2.2 2.3	3.1	U3
		LO.6.2. Quyết tâm phấn đấu thực hiện đường lối cách mạng của Đảng.			
		LO.6.3. Có thái độ nghiêm túc trong học tập, nghiên cứu khoa học, trong nhận thức về cuộc sống, xã hội, tự rèn luyện bản thân trở thành người có phẩm chất, bản lĩnh chính trị vững vàng, có đạo đức, trình độ chuyên môn tốt; hình thành tình cảm, niềm tin vào con đường cách mạng mà dân tộc ta đã lựa chọn.			

6.Kế hoạch giảng dạy môn học (Course Plan):

Buổi (3 tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1	Giới thiệu về môn học	LO.1, LO.5;	Dạy: - Giới thiệu đề cương môn học - Giới thiệu nội dung đề tài thuyết trình nhóm (GHW) Học ở lớp: - Chia nhóm (5 SV/nhóm) - Giới thiệu nhóm học tập Học ngoài lớp: - Chọn đề tài thuyết trình của nhóm (GHW)	
2	Chương nhập môn ĐỐI TƯỢNG, CHỨC NĂNG, NHIỆM VỤ, NỘI DUNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU, HỌC	LO.1;	Dạy: I. ĐỐI TƯỢNG NGHIÊN CỨU CỦA MÔN HỌC LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM 1.Đối tượng nghiên cứu 2.Phạm vi nghiên cứu II.CHỨC NĂNG, NHIỆM VỤ CỦA MÔN HỌC LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM	Thi giữa kỳ (Quiz)

	TẬP LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM		1.Chức năng của khoa học Lịch sử Đảng 2.Nhiệm vụ của môn học II.PHƯƠNG PHÁP NGHIÊN CỨU, HỌC TẬP MÔN LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM 1.Phương pháp luận 2.Các phương pháp cụ thể 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 1.	
3	Chương 1 ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ LÃNH ĐẠO ĐẤU TRANH GIÀNH CHÍNH QUYỀN (1930-1945)	LO.2	Dạy: I. ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ CƯƠNG LĨNH CHÍNH TRỊ ĐẦU TIÊN CỦA ĐẢNG (THÁNG 2-1930) 1. Bối cảnh lịch sử 2. Nguyễn Ái Quốc chuẩn bị các điều kiện để thành lập Đảng 3. Thành lập Đảng Cộng sản Việt Nam và Cương lĩnh chính trị đầu tiên của Đảng 4. Ý nghĩa lịch sử của việc thành lập Đảng Cộng sản Việt Nam II. ĐẢNG LÃNH ĐẠO ĐẤU TRANH GIÀNH CHÍNH QUYỀN (1930-1945) 1.Phong trào cách mạng 1930- 1935 và khôi phục phong trào 1932-1935 2.Phong trào dân chủ 1936-1939 3.Phong trào giải phóng dân tộc 1939-1945 4.Tính chất, ý nghĩa và kinh nghiệm của Cách mạng Tháng Tám năm 1945 Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 2	Thi giữa kỳ (Quiz) Thi cuối kỳ (FEX)

4	Chương 2 ĐẢNG LÃNH ĐẠO HAI CUỘC KHÁNG CHIẾN, HOÀN THÀNH GIẢI PHÓNG DÂN TỘC, THỐNG NHẤT ĐẤT NƯỚC (1945-1975)	LO.3 LO.5	Dạy: I.ĐẢNG LÃNH ĐẠO XÂY DỰNG, BẢO VỆ CHÍNH QUYỀN CÁCH MẠNG VÀ 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 chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946-1950 3.Đẩy mạnh cuộc kháng chiến chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946 đến năm 1950 4.Ý nghĩa lịch sử và kinh nghiệm của Đảng trong lãnh đạo kháng chiến chống thực dân Pháp và can thiệp Mỹ Dạy: Chấm thuyết trình & phản biện Học ở lớp: Các nhóm thuyết trình tại lớp 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) 1. Lãnh đạo cách mạng hai miền giai đoạn 1954-1965 2. Lãnh đạo cách mạng cả nước giai đoạn 1965-1975 3. Ý nghĩa và kinh nghiệm lãnh đạo của Đảng trong cuộc kháng chiến chống Mỹ, cứu nước 1954-1975 Học ngoài lớp: Đọc trước tài liệu chương 2	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)
5	Chương 3 ĐẢNG LÃNH ĐẠO CẢ NƯỚC QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ	LO.4 LO.5	Dạy I.ĐẢNG LÃNH ĐẠO CẢ NƯỚC XÂY DỰNG CHỦ NGHĨA XÃ HỘI VÀ BẢO VỆ TÔ QUỐC (1975-1986)	Thuyết trình nhóm (GHW) Thi cuối kỳ

	HỘI VÀ TIẾN HÀNH CÔNG CUỘC ĐỔI MỚI (1975- 2018)		1. Xây dựng chủ nghĩa xã hội và bảo vệ Tổ quốc 1975-1981 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 Dạy: Chấm thuyết trình & phản biện Học ở lớp: Thảo luận tại lớp II. LÃNH ĐẠO CÔNG CUỘC ĐỔI MỚI, ĐẨY MẠNH CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP QUỐC TẾ (1986-2018) 1. Đổi mới toàn diện, đưa đất nước ra khỏi khủng hoảng kinh tế - xã hội 1986-1996 2. Tiếp tục công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế 1996-2018 3. Thành tựu, kinh nghiệm của công cuộc đổi mới TỔNG LUẬN 1. Những thắng lợi vĩ đại của cách mạng Việt Nam 2. Những bài học lớn về sự lãnh đạo của Đảng Học ngoài lớp: Hoàn thiện bài thuyết trình	(FEX)

7. Đánh giá môn học

STT	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	20%	Thuyết trình và bản báo cáo nhóm	LO.3 LO.4 LO.5
2	Quiz	Bài thi giữa kỳ	Thi theo đề thi chung	30%	Tự luận	LO.1 LO.2;

3	DIC	Thảo luận tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần	Cộng tối đa 1 điểm vào bài thi cuối kỳ	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Trắc nghiệm	LO.2; LO.3, LO.4.
			Tổng cộng	100%		

8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	- Nắm được đối tượng, mục đích học tập, nghiên cứu và một số yêu cầu cơ bản về phương pháp học tập, nghiên cứu	Chương nhập môn	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2	Hiểu rõ 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)	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.3 LO.5	Nắm rõ 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	Chương 2	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của GV
LO.4 LO.5	Hiểu được quá trình phát triển đường lối và sự lãnh đạo của Đảng 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. Từ đó rút ra được những thắng lợi và những bài học kinh nghiệm trong quá	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Ngân hàng đề của GV

	trình lãnh đạo cách mạng của Đảng.			

9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
- Quy định về Bài thuyết trình nhóm GH
- Thành lập nhóm: 5 sinh viên/nhóm. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2.

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 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.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2020

KT. TRƯỞNG KHOA PHÓ TRƯỞNG KHOA



TS. Nguyễn Đình Quốc Cường

ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

Tư tưởng Hồ Chí Minh

(Ho Chi Minh's Thoughts)

1. Thông tin chung	
Tên môn học (tiếng Việt):	Tư tưởng Hồ Chí Minh
Tên môn học (tiếng Anh):	Ho Chi Minh's Thoughts
Mã số môn học:	PE019IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	2
<i>Số tiết lý thuyết:</i>	<i>20 (trên lớp)</i>
<i>Số tiết thực hành:</i>	<i>10 (trên lớp)</i>
<i>Số tiết tự học:</i>	<i>60 (về nhà)</i>
Môn học trước:	1. Triết học Mác - Lênin, 2. Kinh tế chính trị Mác - Lênin, 3. Chủ nghĩa xã hội khoa học

Giảng viên phụ trách Khoa Chính trị - Hành chính, ĐHQG-HCM

2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

- 2.1. Về kiến thức:** 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 công cuộc đổi mới đất nước hiện nay.
- 2.2. Về kỹ năng:** Giúp cho sinh viên khả năng tư duy, phân tích, đánh giá, vận dụng sáng tạo tư tưởng Hồ Chí Minh vào giải quyết các vấn đề trong thực tiễn đời sống, học tập và công tác.
- 2.3. Về thái độ:** Giúp sinh viên nâng cao về bản lĩnh chính trị, yêu nước, trung thành với mục tiêu, lý tưởng độc lập dân tộc gắn liền với chủ nghĩa xã hội; nhận thức được vai trò, giá trị của tư tưởng Hồ Chí Minh đối với Đảng và dân tộc Việt Nam; thấy được trách nhiệm của bản thân trong việc học tập, rèn luyện để góp phần vào xây dựng và bảo vệ Tổ quốc.

3. Mô tả môn học (Course Outlines)

Môn học 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. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Giáo trình Tư tưởng Hồ Chí Minh*, Nxb. Chính trị quốc gia, Hà Nội.
- Khoa Chính trị - Hành chính, ĐHQG-HCM, *Tài liệu hướng dẫn học tập Tư tưởng Hồ Chí Minh*
- Hồ Chí Minh (2011), *Toàn tập*, Nxb. Chính trị quốc gia Sự thật, Hà Nội.
- Hồ Chí Minh (2016), *Biên niên tiểu sử*, Nxb. Chính trị quốc gia Sự thật, Hà Nội.

5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
5.1. Kiến thức					
LO.1	KHÁI NIỆM ĐỐI TƯỢNG PHƯƠNG PHÁP NGHIÊN CỨU VÀ Ý NGHĨA HỌC TẬP MÔN TƯ TƯỞNG HỒ CHÍ MINH	LO.1.1 - Nắm được khái niệm tư tưởng Hồ Chí Minh LO.1.2 - Nắm rõ được đối tượng nghiên cứu LO.1.3 - Nắm được một số yêu cầu cơ bản về phương pháp học tập, nghiên cứu môn học tư tưởng Hồ Chí Minh LO.1.4 - Nắm được ý nghĩa học tập, nghiên cứu môn học tư tưởng đối với sinh viên	2.1	1.1.3	I3
LO.2	CƠ SỞ QUÁ TRÌNH HÌNH THÀNH VÀ PHÁT TRIỂN TƯ TƯỞNG HỒ CHÍ MINH	LO.2.1 - Hiểu rõ được cơ sở thực tiễn, tiền đề lý luận và nhân tố chủ quan hình thành tư tưởng Hồ Chí Minh	2.1	1.1.3	I4

	MINH	LO.2.2 - Hiểu rõ được quá trình hình thành và phát triển tư tưởng Hồ Chí Minh			
		LO.2.3 - Nắm được giá trị tư tưởng Hồ Chí Minh đối với cách mạng Việt Nam và sự phát triển tiến bộ của nhân loại			
LO.3	TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC VÀ CHỦ NGHĨA XÃ HỘI	LO.3.1 - Nhận thức được bản chất khoa học, cách mạng và những sáng tạo tư tưởng Hồ Chí Minh về độc lập dân tộc và cách mạng giải phóng dân tộc.	2.1	1.1.3	I3
		LO.3.2 - Nắm được quan điểm của Hồ Chí Minh về tính tất yếu di lên chủ nghĩa xã hội, xây dựng chủ nghĩa xã hội và thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam.			
		LO.3.3 - Nắm được quan điểm Hồ Chí Minh về mối quan hệ giữa độc lập dân tộc và chủ nghĩa xã hội.			T4
		LO.3.4 - Vận dụng tư tưởng Hồ Chí Minh về độc lập dân tộc gắn liền với chủ nghĩa xã hội trong sự nghiệp cách mạng hiện nay.			
LO.4	TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẢNG CỘNG SẢN VIỆT NAM VÀ NHÀ NƯỚC CỦA NHÂN DÂN, DO NHÂN DÂN, VÌ NHÂN DÂN	LO.4.1 - Nắm được nội dung cơ bản tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam.	2.1	1.1.3	I4
		LO.4.2 - Nắm được nội dung cơ bản tư tưởng Hồ Chí Minh về nhà nước của nhân dân, do nhân dân, vì nhân dân.			I4
		LO.4.3 - Vận dụng tư tưởng Hồ Chí Minh vào công tác xây dựng Đảng			T4

		và xây dựng Nhà nước.			
LO.5	TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT TOÀN DÂN TỘC VÀ ĐOÀN KẾT QUỐC TẾ	LO.5.1 - Hiểu được những quan điểm cơ bản của tư tưởng Hồ Chí Minh về đại đoàn kết toàn dân tộc. LO.5.2 - Hiểu được những quan điểm cơ bản của tư tưởng Hồ Chí Minh về đoàn kết quốc tế LO.5.3 - Vận dụng tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đoàn kết quốc tế trong giai đoạn hiện nay	2.1	1.1.3	I4 T4
LO.6	TƯ TƯỞNG HỒ CHÍ MINH VỀ VĂN HÓA, ĐẠO ĐỨC, CON NGƯỜI	LO.6.1 - Nắm được kiến thức cơ bản tư tưởng Hồ Chí Minh về văn hóa. LO.6.2 - Nắm được kiến thức cơ bản tư tưởng Hồ Chí Minh về đạo đức mới (đạo đức cách mạng). LO.6.3 - Nắm được kiến thức cơ bản tư tưởng Hồ Chí Minh về văn hóa. LO.6.4 - Vận dụng tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người trong việc xây dựng văn hóa, đạo đức, con người Việt Nam hiện nay.	2.1	1.1.3	I4 T4
5.2. Kỹ năng					
LO.7	THỂ HIỆN KHẢ NĂNG TƯ DUY, PHÂN TÍCH, ĐÁNH GIÁ, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.7.1 Có kỹ năng tư duy, phân tích, đánh giá tư tưởng Hồ Chí Minh. LO.7.2. Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn LO.7.3. Có kỹ năng vận dụng sáng tạo tư tưởng Hồ Chí Minh vào giải quyết các vấn đề trong	2.2	2.1.1 2.3.1 2.4.4 2.5	U4

		thực tiễn đời sống, học tập và công tác.			
5.3. Thái Độ					
LO.8	THỂ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.8.1. Nhận thức được vai trò, giá trị của tư tưởng Hồ Chí Minh đối với Đảng và dân tộc Việt Nam. LO.8.2. Có bản lĩnh chính trị, yêu nước, trung thành với mục tiêu, lý tưởng độc lập dân tộc gắn liền với chủ nghĩa xã hội LO.8.3. Thấy được trách nhiệm của bản thân trong việc học tập, nghiên cứu, vận dụng trong cuộc sống, góp phần vào sự nghiệp xây dựng và bảo vệ Tổ quốc	2.3	3.1	U3

6. Kế hoạch giảng dạy theo buổi học (Course Plan):

Buổi (3 tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 1 (tiết)	Giới thiệu về môn học	LO.1, LO.5,	Dạy: - Giới thiệu đề cương môn - Giới thiệu nội dung đề tài thuyết trình nhóm GHW). Học ở lớp: - Chia nhóm (5 sv/nhóm) - Giới thiệu nhóm học tập Học ngoài lớp: - Chọn đề tài thuyết trình của nhóm (GHW), Đọc trước tài liệu chương 1.	
2	Chương 1 KHÁI NIỆM, ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ Ý NGHĨA HỌC TẬP	LO.1;	Dạy: I. KHÁI NIỆM TƯ TƯỞNG HỒ CHÍ MINH II. ĐỐI TƯỢNG NGHIÊN CỨU MÔN HỌC TƯ TƯỞNG HỒ CHÍ MINH III. PHƯƠNG PHÁP NGHIÊN CỨU	

	MÔN TƯ TƯỞNG HỒ CHÍ MINH		3. Phương pháp luận của việc nghiên cứu tư tưởng Hồ Chí Minh 4. Một số phương pháp cụ thể IV. Ý NGHĨA CỦA VIỆC HỌC TẬP MÔN HỌC TƯ TƯỞNG HỒ CHÍ MINH 1. Góp phần nâng cao năng lực tư duy lý luận 2. Giáo dục và thực hành đạo đức cách mạng, củng cố niềm tin khoa học gắn liền với trau dồi tình cảm cách mạng, bồi dưỡng lòng yêu nước 3. Xây dựng, rèn luyện phương pháp và phong cách công tác. Học ở lớp: Trao đổi, phát biểu trên lớp Học ngoài lớp: - Phác thảo nội dung thuyết trình nhóm GHW - Đọc trước tài liệu chương 2	
3	Chương 2 CƠ SỞ, QUÁ TRÌNH HÌNH THÀNH VÀ PHÁT TRIỂN TƯ TƯỞNG HỒ CHÍ MINH	LO.2	Dạy: I. CƠ SỞ HÌNH THÀNH TƯ TƯỞNG HỒ CHÍ MINH 1. Cơ sở thực tiễn 2. Cơ sở lý luận 3. Nhân tố chủ quan II. QUÁ TRÌNH HÌNH THÀNH VÀ PHÁT TRIỂN TƯ TƯỞNG HỒ CHÍ MINH 1. Thời kỳ trước ngày 5-6-1911: Hình thành tư tưởng yêu nước và có chí hướng tìm con đường mới 2. Thời kỳ từ năm 1911 đến cuối năm 1920: Dần dần hình thành tư tưởng cứu nước, giải phóng dân tộc Việt Nam theo con đường cách mạng vô sản 3. Thời kỳ từ cuối năm 1920 đến đầu năm 1930: Hình thành những nội dung cơ bản tư tưởng về cách mạng Việt Nam 4. Thời kỳ đầu năm 1930 đến đầu năm 1941: Vượt qua thử thách, giữ vững đường lối, phương pháp cách mạng Việt Nam đúng đắn, sáng tạo 5. Thời kỳ từ đầu năm 1941 đến tháng 9 - 1969: Tư tưởng Hồ Chí Minh tiếp tục phát triển, hoàn thiện,	Thi giữa kì (Quiz) Thi cuối kì (FEX)

			soi đường cho sự nghiệp cách mạng của Đảng và nhân dân ta III. GIÁ TRỊ TƯ TƯỞNG HỒ CHÍ MINH 1. Đối với cách mạng Việt Nam 2. Đối với sự phát triển tiến bộ của nhân loại Học ở lớp: Thảo luận và phát biểu trên lớp Học ngoài lớp: Đọc trước tài liệu chương 3	
4	Chương 3 TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC GẮN LIỀN VỚI CHỦ NGHĨA XÃ HỘI	L0.3 L0.5	Dạy: 1. TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC 1. Vấn đề độc lập dân tộc 2. Về cách mạng giải phóng dân tộc Dạy: Châm thuyết trình & phản biện Học ở lớp: Các nhóm thuyết trình tại lớp II. TƯ TƯỞNG HỒ CHÍ MINH VỀ CHỦ NGHĨA XÃ HỘI VÀ XÂY DỰNG CHỦ NGHĨA XÃ HỘI Ở VIỆT NAM 1. Tư tưởng Hồ Chí Minh về chủ nghĩa xã hội 2. Tư tưởng Hồ Chí Minh về xây dựng chủ nghĩa xã hội ở Việt Nam 3. Tư tưởng Hồ Chí Minh về thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam III. TƯ TƯỞNG HỒ CHÍ MINH VỀ MỐI QUAN HỆ GIỮA ĐỘC LẬP DÂN TỘC VÀ CHỦ NGHĨA XÃ HỘI 1. Độc lập dân tộc là cơ sở, tiền đề để tiến lên chủ nghĩa xã hội 2. Chủ nghĩa xã hội là điều kiện để đảm bảo nền độc lập dân tộc vững chắc IV. VẬN DỤNG TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC GẮN LIỀN VỚI CHỦ NGHĨA XÃ HỘI TRONG SỰ NGHIỆP CÁCH MẠNG VIỆT NAM GIAI ĐOẠN HIỆN NAY	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)

			1.Kiên định mục tiêu và con đường cách mạng mà Hồ Chí Minh đã xác định 2.Phát huy sức mạnh dân chủ xã hội chủ nghĩa 3.Củng cố, kiện toàn, phát huy sức mạnh và hiệu quả hoạt động của toàn hệ thống chính trị 4.Đấu tranh chống những biểu hiện suy thoái về tư tưởng chính trị, đạo đức, lối sống và, “tự diễn biến”, “tự chuyển hóa” trong nội bộ Học ngoài lớp: Đọc trước tài liệu chương 4	
5	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	LO.4 LO.5	Dạy: I. TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẢNG CỘNG SẢN VIỆT NAM 1.Tính tất yếu và vai trò lãnh đạo của Đảng Cộng sản Việt Nam 2.Đảng phải trong sạch, vững mạnh Dạy: Chấm thuyết trình & phản biện Học ở lớp: Thảo luận tại lớp II.TƯ TƯỞNG HỒ CHÍ MINH VỀ NHÀ NƯỚC CỦA NHÂN DÂN, DO NHÂN DÂN, VÌ NHÂN DÂN 1.Nhà nước dân chủ 2.Nhà nước pháp quyền 3.Nhà nước trong sạch, vững mạnh III.VẬN DỤNG TƯ TƯỞNG HỒ CHÍ MINH VÀO CÔNG TÁC XÂY DỰNG ĐẢNG VÀ XÂY DỰNG NHÀ NƯỚC 1.Xây dựng Đảng thật sự trong sạch, vững mạnh 2.Xây dựng Nhà nước Học ngoài lớp: Hoàn thiện bài thuyết trình	Thảo luận nhóm (DIC) Thi cuối kỳ (FEX)
6	Chương 5 TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT DÂN TỘC VÀ ĐOÀN KẾT QUỐC TẾ		Dạy: 1. TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT DÂN TỘC 1.Vai trò của đại đoàn kết dân tộc 2.Lực lượng của khối đại đoàn kết dân tộc 3.Điều kiện để xây dựng khối đại đoàn kết toàn dân tộc	

		4.Hình thức, nguyên tắc tổ chức của khối đại đoàn kết dân tộc - Mặt trận dân tộc thống nhất 5. Phương thức xây dựng khối đại đoàn kết dân tộc Dạy: Châm thuyết trình & phản biện Học ở lớp: Thảo luận tại lớp II.TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐOÀN KẾT QUỐC TẾ 1.Sự cần thiết phải đoàn kết quốc tế 2.Lực lượng đoàn kết quốc tế và hình thức tổ chức 3.Nguyên tắc đoàn kết quốc tế III.VẬN DỤNG TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT DÂN TỘC VÀ ĐOÀN KẾT QUỐC TẾ TRONG GIAI ĐOẠN HIỆN NAY 1.Quán triệt tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đoàn kết quốc tế trong hoạch định chủ trương, đường lối của Đảng 2.xây dựng khối đại đoàn kết toàn dân tộc trên nền tảng liên minh công - nông - trí thức dưới sự lãnh đạo của Đảng 3.Đại đoàn kết dân tộc phải kết hợp với đoàn kết quốc tế	
7	Chương 6 TƯ TƯỞNG HỒ CHÍ MINH VỀ VĂN HÓA, ĐẠO ĐỨC, CON NGƯỜI	Dạy: I. TƯ TƯỞNG HỒ CHÍ MINH VỀ VĂN HÓA 1.Một số nhận thức chung về văn hóa và quan niệm giữa văn hóa với các lĩnh vực khác 2.Quan điểm của Hồ Chí Minh về vai trò của văn hóa 3.Quan điểm của Hồ Chí Minh về xây dựng nền văn hóa mới Dạy: Châm thuyết trình & phản biện Học ở lớp: Thảo luận tại lớp II. TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẠO ĐỨC 1. Quan điểm về vai trò và sức mạnh của đạo đức cách mạng 2.Quan điểm về những chuẩn mực đạo đức cách mạng	

			3. Quan điểm về những nguyên tắc xây dựng đạo đức cách mạng III. TƯ TƯỞNG HỒ CHÍ MINH VỀ CON NGƯỜI 1. Quan niệm Hồ Chí Minh về con người 2. Quan niệm của Hồ Chí Minh về vai trò của con người 3. Quan niệm Hồ Chí Minh về xây dựng con người IV. XÂY DỰNG VĂN HÓA, ĐẠO ĐỨC, CON NGƯỜI VIỆT NAM HIỆN NAY THEO TƯ TƯỞNG HỒ CHÍ MINH 1. Xây dựng và phát triển văn hóa, con người 2. Về xây dựng đạo đức cách mạng	

7. Đánh giá môn học

ST T	Mã	Tên	Mô tả	Tỷ Trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.2, LO.3, LO.4, LO.5,
2	Quiz	Bài thi giữa kỳ	Giảng viên cho thi	20%	Trắc nghiệm (đề đóng) hoặc tự luận	LO.2, LO.3.
3	DIC	Thảo luận tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.3, LO.4, LO.5, LO.6.
4	FEX	Thi cuối kỳ	Thi đề chung Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận (đề mở)	LO.2, LO.3, LO.4, LO.5,
			Tổng cộng	100%		

8. Tiêu chí đánh giá chuẩn đầu ra môn học:

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	- Hiểu được khái niệm tư tưởng Hồ Chí Minh. - Nắm được đối tượng; phương pháp nghiên cứu tư tưởng Hồ Chí Minh và ý nghĩa học tập môn tư tưởng Hồ Chí Minh.	Chương 1	Hỏi - Đáp	Cộng điểm
LO.2	- Hiểu rõ cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh. - Nắm được giá trị tư tưởng Hồ Chí Minh đối với cách mạng Việt Nam và thế giới.	Chương 2	Thi giữa kỳ (Quiz)	Đề thi của GV
LO.3	- Nắm rõ nội dung tư tưởng Hồ Chí Minh về độc lập dân tộc và chủ nghĩa xã hội; mối quan hệ giữa độc lập dân tộc và chủ nghĩa xã hội. - Hiểu được sự vận dụng tư tưởng Hồ Chí Minh về độc lập dân tộc và chủ nghĩa xã hội của Đảng Cộng sản Việt Nam và Nhà nước ta.	Chương 3	Thuyết trình nhóm (GHW) Thi giữa kỳ (Quiz) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Đề thi của GV Ngân hàng đề thi của khoa Chính trị - Hành chính
LO.4	- Nắm rõ nội dung tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam và Nhà nước của dân, do dân, vì dân. - Hiểu được sự vận dụng của Đảng và Nhà nước ta vào công tác xây dựng Đảng và xây dựng Nhà nước.	Chương 4	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của khoa Chính trị - Hành chính
LO.5	- Nắm được nội dung tư tưởng Hồ Chí Minh về đại đoàn kết toàn dân tộc và đoàn kết quốc tế. - Hiểu được sự vận dụng của Đảng và Nhà nước ta trong việc hoạch định chủ trương, đường lối, chính sách về đại đoàn kết dân tộc và đối ngoại.	Chương 5	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của khoa Chính trị - Hành chính
LO.6	- Nắm được nội dung tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người. - Vận dụng tư tưởng Hồ Chí Minh về văn hóa, đạo đức và con người trong việc rèn luyện, tu dưỡng bản thân.	Chương 6	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của khoa Chính trị - Hành chính

9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
- 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 2.
- + 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 GHW 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.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2022
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

Course Title		
Vietnamese	Đạo đức và kỹ năng nghề nghiệp	
English	Engineering Ethics and Professional Skills	
Course ID	PE020IU	
Course level	☒ Undergrad ☐ Master ☐ Both	
Course type	☒ General ☐ Fundamental ☐ Specialization (required) ☐ Specialization (elective) ☐ Project/Internship/Thesis ☐ Others:	
Number of credits	3	
Lecture	3	
Laboratory	0	
Prerequisites	None	
Parallel Course	None	
Course it replaces		
Course standing in curriculum		

2. Course Description

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.

3. Textbooks and references

Textbooks

- Seebauer, E.G. and Barry, R.L. *Fundamental of Ethics for Scientists and Engineers* (New York: Oxford University Press, 2001).
- *C.E. Harris, Jr., M. S. Pritchard & M. J. Rabins, "Engineering Ethics - Concepts and Cases", Thomson Wadsworth, 4th ed.*
- *C. B. Fleddermann, "Engineering Ethics", Pearson Prentice Hall, 3rd or 4th ed.*

- References
- *M. W. Martin & E. Schinzinger, "Ethics in Engineering", McGraw Hill, 4th ed.*

4. Course Objectives

- An understanding of their duties and responsibilities as professionals through gaining knowledge of the philosophies of ethics, professional practice, and world culture.
- Basic knowledge to make informed ethical decisions when confronted with problems in the working environment.
- Team skills through working in teams on assignments and in-class assignments.
- Subjective analytical skills through investigation and evaluation of ethical problems in engineering settings using accepted tests for moral problem solving.
- An understanding of how societal morals varies with culture and how this influences ethical thought and action.
- Improvement of skills in both written and oral communication with regard to ethical and professional issues in engineering.
- Understanding some of the classic cases as well as contemporary issues in engineering ethics.

5. Learning Outcomes

Learning Outcome Codes	Course learning outcomes	Program Learning Outcomes (*)
G1	Understanding of intellectual property, copyright, and fair use of copyrighted materials and research data, and follows behaviour consistent with academic integrity and social responsibility.	d
G2	Be able to integrate professional ethics and equity to issues encountered during engineering practice.	b, d, g
G3	Be able to analyze social, environmental, legal aspects, safety and sustainability issues of engineering activities.	b, c, d, e, g

(*) Refer to ABET student outcomes

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics*
- 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*
- an ability to communicate effectively with a range of audiences*
- 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*
- 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*
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.*

6. Course Assessment

Assessment component (1)	Assessment form (A.x.x) (2)	Percentage % (3)
A1. Process assessment	A1.1 Homework	15
	A1.2 Quizzes	15
A2. Midterm assessment	A2.1 Midterm Exam	30
A3. Final assessment	A3.1 Final exam	40

7. Course Outline

Week	Content	Learning outcome	Teaching and learning activities	Assessment
1	Introduction to engineering professionalism and ethics	G1, G2	- Lecture - Class discussion	
2	Role of Professional Societies	G2	- Lecture - Class discussion	Homework
3	Academic & Research Ethics	G1, G2	- Lecture - Class discussion	Quiz
4	Engineers in Society	G, G2, G3	- Lecture - Class discussion	Homework
5	Philosophical ethics: Descriptive and prescriptive claims, Relativism theory	G1, G2	- Lecture - Class discussion	Quiz
6	Philosophical ethics: Utilitarian theory, Kantian theory	G1, G2	- Lecture - Class discussion	Homework
7	The importance of intention Truth in action and words	G2, G3	- Lecture - Class discussion	Quiz
MIDTERM EXAM				Written exam
9	Leadership in engineering and society	G2, G3	- Lecture - Class discussion	
10	Engineer at the Workplace and Organizations	G1, G2	- Lecture - Class discussion	Quiz
11	Commitment to Safety	G2, G3	- Lecture - Class discussion	Quiz
12	Internet ethics	G3	- Lecture - Class discussion	
13	Privacy Issues and Intellectual Property Rights	G1, G2	- Lecture - Class discussion	Quiz
14	Environmental ethics Sustainable engineering	G3	- Lecture - Class discussion	Homework
15	Globalization and international cultural considerations	G3	- Lecture - Class discussion	
FINAL EXAMINATION				Written exam

8. Course Policy

Class Participation: A minimum attendance of 80 percent is compulsory for the class sessions and 100 percent is compulsory for the laboratory sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Academic Honesty and Plagiarism: Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade. For this class, all assignments are to be completed by the individual student unless otherwise specified. Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for preparation, research, drafting, and the proper referencing of sources in preparing all assessment items.

9. Course Coordinator/Lecturer

- Course Coordinator/ Lecturer: Assoc. Prof. Huỳnh Kim Lâm
- Email: hklam@hcmiu.edu.vn



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
 Department of English

COURSE SYLLABUS

Course Name: Critical Thinking

Course Code: **PE008IU**

1. General information

Course name	- <i>(in English)</i> Critical thinking - <i>(in Vietnamese)</i> Tư duy phân tích
Course designation	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.
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Trần Thanh Tú (Ph.D) Nguyễn Thị Thủy (Ph.D) Phạm Ngọc (Ph.D) Nguyễn Văn Tiếp (Ph.D) Vũ Tiến Thịnh (MA) Đỗ Thị Diệu Ngọc (MA)
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, discussions, homework assignments, students' presentations
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (lecture, exercise): 45 Private study including examination preparation, specified in hours ¹ : 90
Credit points	3

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	This course will enable students to • develop the habits of assessing and defending the reasonableness of their beliefs and values as well as those of others • appreciate the importance of looking at an issue from a variety of perspectives • apply critical thinking skills in both public and personal settings								
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. Know the general concepts and standards of critical thinking; and comprehend the disadvantages of barriers to critical thinking in various contexts CLO2. Know the elements of an argument and two patterns of reasoning CLO3 Know the fallacies of relevance and insufficient evidence in arguments </td></tr> <tr> <td>Skill</td><td> CLO4. Construct and evaluate deductive and inductive arguments in spoken and written forms CLO5. Test the validity of deductive arguments using Venn diagram and truth tables CLO6. Analyze and standardize arguments CLO7. Evaluate truth claims and refute arguments CLO8. Analyze weaknesses in inductive arguments to strengthen them </td></tr> <tr> <td>Attitude</td><td> CLO9. Defend personal/group beliefs with good arguments and in appropriate manners (project presentations) </td></tr> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Know the general concepts and standards of critical thinking; and comprehend the disadvantages of barriers to critical thinking in various contexts CLO2. Know the elements of an argument and two patterns of reasoning CLO3 Know the fallacies of relevance and insufficient evidence in arguments	Skill	CLO4. Construct and evaluate deductive and inductive arguments in spoken and written forms CLO5. Test the validity of deductive arguments using Venn diagram and truth tables CLO6. Analyze and standardize arguments CLO7. Evaluate truth claims and refute arguments CLO8. Analyze weaknesses in inductive arguments to strengthen them	Attitude	CLO9. Defend personal/group beliefs with good arguments and in appropriate manners (project presentations)
Competency level	Course learning outcome (CLO)								
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Skill	CLO4. Construct and evaluate deductive and inductive arguments in spoken and written forms CLO5. Test the validity of deductive arguments using Venn diagram and truth tables CLO6. Analyze and standardize arguments CLO7. Evaluate truth claims and refute arguments CLO8. Analyze weaknesses in inductive arguments to strengthen them								
Attitude	CLO9. Defend personal/group beliefs with good arguments and in appropriate manners (project presentations)								

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 to Critical thinking	3	I, T, U
	Recognizing arguments	3	T, U
	Basic logical concepts	3	T, U
	A little categorical logic	3	T, U
	A little propositional logic	3	T, U
	Logical fallacies I	3	T, U
	Logical fallacies II	3	T, U
	Review for Midterm test	3	U
	Analyzing arguments	3	T, U
	Evaluating arguments and truth claims	3	T, U
	Inductive reasoning	3	T, U
	Project: Group presentation	9	U
	Review for Final Exam	3	U
Examination forms	40 multiple-choice questions for the midterm and final exams and group presentations for the final 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. Overall passing score: 50/100		
Reading list	[1] Bassham, Irwin, Nardone, and Wallace, <i>Critical Thinking: A Student's Introduction</i> , 6 th edition, McGraw-Hill Education, 2020. [2] Moore, B.N. et al. (2009). <i>Critical Thinking</i> , 9th ed. McGraw-Hill [3] Patrick J. Hurley (2012). <i>A Concise Introduction to Logic</i> (11 th ed.), Wadsworth, Cengage Learning + Relevant web resources		

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						
2						
3						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Critical thinking	1	HW 1/Quiz 1	Lecture, Discussion,	[1] Chapter 1

				Homework, Quiz	
2	Recognizing arguments	2	HW 2/Quiz 2	Lecture, Discussion, Homework, Quiz	[1] Chapter 2
3	Basic logical concepts	2	HW 3/Quiz 3	Lecture, Discussion, Homework, Quiz	[1] Chapter 3
4	A little categorical logic	3	HW 4/Quiz 4	Lecture, Discussion, Homework, Quiz	[1] Chapter 9
5	A little propositional logic	3	HW 5/Quiz 5	Lecture, Discussion, Homework, Quiz	[1] Chapter 10
6	Logical fallacies I	4	HW 6/Quiz 6	Lecture, Discussion, Homework, Quiz	[1] Chapter 5
7	Logical fallacies II	4	HW 7/Quiz 7	Lecture, Discussion, Homework, Quiz	[1] Chapter 6
8	Review for midterm exam + sample test				
9 + 10	Midterm exam: Chapters 1, 2, 3, 9, 10				
11	Analyzing arguments	5	HW 8/Quiz 8	Lecture, Discussion, Homework	[1] Chapter 7
12	Evaluating arguments and truth claims	5	HW 9/Quiz 9	Lecture, Discussion, Homework	[1] Chapter 8
13	Inductive reasoning	2	HW 10/Quiz 10	Lecture, Discussion, Homework	[1] Chapter 11
14	Project: Group presentation	6	Group work	Presentation, Discussion	
15	Project: Group presentation	6	Group work	Presentation, Discussion	
16	Project: Group presentation	6	Group work	Presentation, Discussion	
17	Review for final exam + sample test				
18	Reserved week				
19+20	Final exam: Chapters 5, 6, 7, 8, 11				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8	CLO9
Class participation and Assignments (30%)	80% Pass	80% Pass	80% Pass	80% Pass	80% Pass				80% Pass
Midterm exam (30%)						80% Pass	80% Pass	80% 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. Rubrics (optional)

Date revised: 15 August, 2022

By coordinator: Đỗ Thị Diệu Ngọc

Contact details:

Email: dtdngoc@hcmiu.edu.vn

Mobile: 0904361717



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:	
	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.
Content	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.
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 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	Assignment	20%	Midterm examination	30%	Final examination	50%	Total	100%
Assignment	20%								
Midterm examination	30%								
Final examination	50%								
Total	100%								

	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 <u>Legal Texts:</u> 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)

	Other Resources, Support and Information. 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. Books: • 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.

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
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 1 - 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 1 - 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	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance	Discussions Case studies, especially cases related	PPT– Criminal law available on Blackboard

	- Crimes - Punishments		evaluations	to corruption	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 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 - Definitions - Formation of contracts - Validity of contracts - Liability for breach of contracts	1-5 (Level M - Mastery)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT- Civil law available on Blackboard Civil code 2015 available on Blackboard
11	Civil Law (Part III) - Inheritance - Testamentary inheritance - Intestacy	1-5 (Level M - Mastery)	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 - Mastery)	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.)	1-5 (Level M -	Tests Peer evaluations	Discussions Case studies	PPT- Labor law available on

	• Employment contracts • Labor disciplines • Dispute settlements	Mastery)	Class-performance evaluations		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

No.	CLOs	Criteria	COMPLETELY FAIL Below 30%	INADEQUATE 30% – 49%	ADEQUATE 50% - 69%	ABOVE AVERAGE 70% - 89%	EXEMPLARY ≥ 90%
1	CLO 1	Organisation and clarification	No evidence of organization and coherence	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
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 facts 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	Shows limited ability to structure	Shows effort to link problems with the theoretical	Shows ability to structure problems in	Shows ability to structure problems in correspondence to

			problems in correspondence to theoretical frameworks	problems in correspondence to theoretical frameworks	frameworks. There are still some mistakes	correspondence to theoretical frameworks correctly. Minor mistakes in resolving problems	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


Huỳnh Khả Tú



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

COURSE SYLLABUS

Course Name: Writing AE1 (Academic Writing)

Course Code: EN007IU

1. General information

Course name	- <i>(in English)</i> Writing AE1 - <i>(in Vietnamese)</i> Tiếng Anh chuyên ngành 1
Course designation	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.
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, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 h Contact hours (lecture, exercise): 25 h Private study including examination preparation, specified in hours ² : 60 h
Credit points	2 credits (theory) ~ (3.1 ECTS)

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 fulfil ONE of the following requirements to attend this course: • hold TOEFL iBT certificate with score ≥ 61 • hold IELTS certificate with score ≥ 5.5 • have completed IE2 course																													
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. Understand and follow different steps in the writing process to produce a complete essay CLO2. Employ different methods to improve their writing such as peer feedback and teacher comments																												
	Skill	CLO3. Read critically, analyze and annotate an academic text CLO4. Use different functions of writing to successfully communicate their purposes to the audience (describe a process, discuss the causes and effects, compare and contrast, make arguments, paraphrase and summarize)																												
	Attitude	CLO5. Reason around ethical issues in writing academic essays and avoid committing plagiarism																												
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>The process of Academic Writing</td><td>1</td><td>I, T, U</td></tr><tr><td>Using Outside Sources</td><td>3</td><td>T, U</td></tr><tr><td>From Paragraph to Essay</td><td>4</td><td>T, U</td></tr><tr><td>Process Essays</td><td>4</td><td>T, U</td></tr><tr><td>Cause/Effect Essays</td><td>4</td><td>T, U</td></tr><tr><td>Comparison/ Contrast Essays</td><td>4</td><td>T, U</td></tr><tr><td>Argumentative Essays</td><td>6</td><td>T, U</td></tr><tr><td>Summarizing</td><td>2</td><td>U</td></tr></table>			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
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. <i>Writing Center (Room 509)</i> Students are encouraged to visit the Writing Center to schedule an appointment for additional help with essay writing.		
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)

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						
2						
3						
4						

3. Planned learning activities and teaching methods

Week	Coursebook		Homework
	Chapter	Pages	
1	The process of Academic Writing Step 1: Creating (Prewriting) Step 2: Planning (Outlining) Step 3: Writing Step 4: Polishing Using Outside Sources Paraphrasing Plagiarism and how to avoid plagiarism	[2] pp. 265-279 [1] pp. 58-65	- Do revising & editing exercises - Read pp. [1] pp. 66-72
2	Using Outside Sources (Cont'd) Strategies for writing a successful summary	[1] pp. 58 - 72	- Do paraphrasing exercises - Read [1] pp.74-100. Read, take notes and write the summary of ONE of the following articles: - The Challenge of Many Languages (p. 280) - Nice by Nature? (p. 281) - Marital Exchanges (pp. 283-4) - Why We Should Send a Manned Mission to Mars (pp. 286-7) - Let's Not Go to Mars (pp. 288-9)
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] pp. 74 - 100	- Read pp. 101-15 - Do exercises on: - Writing thesis statements - Writing topic sentences from the thesis statement provided - Writing restatements

5	Process Essays Introduction Analyzing the models Thesis statements for process essays Transitional signals Write together: Writing from a diagram (p.115)	[1] pp. 101 - 115	Write a short essay (150-200 words) describing how hydroelectric power is generated (or a topic of the lecturer's choice)
6	Process Essays (Cont'd) Review/ Correction: Lecturer gives feedback to one or two students' writings in class. <u>In-class Assignment:</u> Write a process essay about one of these topics or a topic of the 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.)	[1] pp. 101 - 115	Read [1] pp. 116-132
7	Cause/ Effect Essays Introduction Analyzing the models Organization Signal words and phrases Write together: Write the introduction, ONE body paragraph and the conclusion on one of the topics below 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 collegestudents - The effects of regular reading on students' lives	[1] pp. 116 - 132	- Practice 4, 5,6 /pp. 127-9 - Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice. The topic should be different from the one that has been used in class: - 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

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 insports on young children • The causes of stress in collegestudents The effects of regular reading on students' lives		• Give peer-feedback using the rubric provided
MID-TERM EXAMINATION			
9	Comparison/ Contrast Essays Introduction Analyzing the models Organization: • Points of comparison • Point-by-point organization • Block organization Comparison and Contrast signal words Write together: Write the introduction, ONE body paragraph and the conclusion on one of the topics below 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 culture in two different countries. • Compare and contrast the culture of a small town and a big city.	[1] pp. 133 - 151	• Practice 3, 4, 6, 7/pp.142-6 • Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice. The topic should be different from the one that has been used in class: - o Compare and contrast the relationship between parents and children in two different cultures. - o Compare and contrast the university culture in two different countries. - o Compare and contrast the culture of a small town and a big city.

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	[1] pp. 133 - 151	• Read [1] pp. 152-168
11 & 12	Argumentative Essays Introduction Analyzing the model	[1] pp. 152-168	• Write an argumentative essay (300 – 350 words) on ONE of the following topics or a topic

	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 Write together: Write the introduction, ONE body paragraph and the conclusion on one of the topics below 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?		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?
13	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?		• Give peer-feedback using the rubric provided
14	Review & Practice: Summarizing		Sample final test

15	Review/Correction: Lecturer gives feedback to one or two students' argumentative essays + sample final test in class. Lecturer has students check their own assignment scores.		
FINAL EXAMINATION			

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Homework completion (10%)	80% Pass	80% Pass	80% Pass		
Week 6: In-class writing assignment: Process essay (10%)				80% Pass	
Week 10: In-class writing assignment: Compare & Contrast essay (10%)				80% Pass	
Midterm exam (30%)	80% Pass			80% Pass	80% Pass
Final exam (40%)				80% Pass	80% Pass

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

5. Rubrics (optional)

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

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 1,4
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 1,4,5
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 1,4
Total	60	

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

Criteria/ word count	300-350 words (100%)	200-299 words (80%)	Under 200 words (60%)	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	16	12	CLO 1,4

Content: (20) The essay fulfills the task requirements, and the topic is fully addressed. The content is originally created by the students.	20	16	12	CLO 1,4,5
Organization: (60) Introduction: The introduction has a thesis statement. (10)	10	8	6	CLO 1,4
Body: At least one paragraph discusses the counter-arguments. (10)	10	8	6	
Each paragraph discusses a particular point and begins with a clear topic sentence. (10)	10	8	6	
Each paragraph has specific supporting details (fact, examples, etc.). There are no sentences that are off-topic. (10)	10	8	6	
Each paragraph has cohesion and coherence. There are transition signals to show the relationship among ideas and to link paragraphs. (10)	10	8	6	
Conclusion: 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	8	6	
Total	100	80	60	

Date revised: 15 August, 2022

Ho Chi Minh City, 15 August 2022



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

COURSE SYLLABUS

Course Name: Listening AE1 (Listening & Note-taking)

Course Code: EN008IU

1. General information

Course name	- <i>(in English)</i> Listening AE1 - <i>(in Vietnamese)</i> Tiếng Anh chuyên ngành 1
Course designation	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.
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
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 h Contact hours (lecture, exercise): 25 h Private study including examination preparation, specified in hours ³ : 60 h
Credit points	2 credits (theory) ~ (3.1 ECTS)

³ 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 fulfil ONE of the following requirements to attend this course: • hold TOEFL iBT certificate with score ≥ 61 • hold IELTS certificate with score ≥ 5.5 • complete IE2 course									
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><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Remember different strategies and techniques in listening to academic lectures and taking notes. CLO2. Improve their specialized knowledge of academic lectures</td></tr><tr><td>Skill</td><td>CLO3. Respond to academic lectures with appropriate strategies CLO4. Communicate effectively with their classmates and professors.</td></tr><tr><td>Attitude</td><td>CLO5. Respond to academic lectures with confidence</td></tr></table>		Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Remember different strategies and techniques in listening to academic lectures and taking notes. CLO2. Improve their specialized knowledge of academic lectures	Skill	CLO3. Respond to academic lectures with appropriate strategies CLO4. Communicate effectively with their classmates and professors.	Attitude	CLO5. Respond to academic lectures with confidence
Competency level	Course learning outcome (CLO)									
Knowledge	CLO1. Remember different strategies and techniques in listening to academic lectures and taking notes. CLO2. Improve their specialized knowledge of academic lectures									
Skill	CLO3. Respond to academic lectures with appropriate strategies CLO4. Communicate effectively with their classmates and professors.									
Attitude	CLO5. Respond to academic lectures 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) <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																																						
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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 and pen tests: Correct the mistakes, Fill in the blanks, Write short answers, Write 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																																							

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.

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						
2						
3						
4						

3. Planned learning activities and teaching methods

WEEK	P.	Chapter	Listening oriented activities	Speaking oriented activities
WEEK 1	2	ORIENTATION		
WEEK 2	2	<u>Chapter 1</u> New Trends in Marketing Research	Recognizing topic introducing and lectureplan presenting expressions Organizing ideas by outlining	Expressing ideas during a discussion
WEEK 3	2	<u>Chapter 2</u> Business Ethics	Recognizing transition expressions Using symbols and abbreviations	Asking for clarification and elaboration during a discussion
WEEK 4	2	REVIEW		
WEEK 5	2	<u>Chapter 3</u> Trends in Children's Media Use	Recognizing generalization and support expressions	Giving opinions and asking for opinions during a discussion

WEEK 6	2	<u>Chapter 4</u> The Changing Music Industry	Recognizing expressions for clarification or emphasis Organizing notes by using a split-page format	Expressing interest and asking for elaboration during a discussion
WEEK 7	2	<u>Chapter 5</u> The Placebo Effect	Recognizing cause and effect expressions Noting causes and effects	Agreeing and disagreeing during a discussion
WEEK 8	2	Sample test correction WRAP-UP AND REVIEW		
MID-TERM EXAMINATION				
WEEK 9	2	<u>Chapter 6</u> Intelligent Machines	Recognizing expressions used to predict causes and effects Using arrows to show the relationship between causes and effects	Learning to compromise and reach a consensus during a discussion
WEEK 10	2	REVIEW		
WEEK 11	2	<u>Chapter 7</u> Sibling Relationships	Recognizing expressions of comparison and contrast Noting comparison and contrast	Expanding on ideas during a discussion
WEEK 12	2	<u>Chapter 8</u> Multiple Intelligences	Recognizing non-verbal signals indicating important information Representing information in list form	Keeping the discussion on topic
WEEK 13	2	REVIEW		
WEEK 14	2	<u>Chapter 9</u> The Art of Graffiti	Recognizing expressions of definition Reviewing and practicing all note taking strategies	Indicating to other when preparing to speak or pausing

				to collect thoughts
WEEK 15	2	WRAP-UP AND REVIEW		
FINAL EXAMINATION				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
On-going assessment (30%) (participation, individual work, group work, assignments, etc.)	80% Pass	80% Pass	80% Pass	80% Pass	80% Pass
Midterm exam (30%)	80% Pass		80% Pass		
Final exam (40%)	80% Pass		80% Pass		

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

5. Rubrics (optional)

Date revised: 15 August, 2022



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

COURSE SYLLABUS

Course Name: Writing AE2 (Research Paper Writing)

Course Code: EN011IU

1. General information

Course name	- (in English) Writing AE2 - (in Vietnamese) Tiếng Anh chuyên ngành 2
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>
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, 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 ⁴ : 60

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.

Credit points	2	
Required and recommended prerequisites for joining the course	Students must complete Writing AE1 course	
Course objectives	Students are required to work on the tasks selected to maximize their exposure to written communication and are expected to become competent writers in the particular genre: the research paper. As writing is part of an integrated skill of reading and writing where reading serves as input to trigger writing, this course is designed to familiarize non-native students with academic literature in their major study by having them 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. Understand 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

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>Unit 1: The Academic Writing Process Introduction</td><td>4</td><td>I, T, U</td></tr><tr><td>Unit 2: Researching and Writing</td><td>2</td><td>T, U</td></tr><tr><td>Unit 3: Fundamentals & Feedback</td><td>2</td><td>T, U</td></tr><tr><td>Unit 4: Definitions, Vocabulary & Clarity</td><td>2</td><td>T, U</td></tr><tr><td>Unit 5: Generalizations, Facts and Honesty</td><td>4</td><td>T, U</td></tr><tr><td>Unit 6: Seeing Ideas and Sharing Texts</td><td>2</td><td>T, U</td></tr><tr><td>Unit 7: Description, Methods & Reality</td><td>2</td><td>T, U</td></tr><tr><td>Unit 8: Results, Discussion & Relevance</td><td>2</td><td>T, U</td></tr><tr><td>Unit 9: The Whole Academic Text</td><td>2</td><td>T, U</td></tr><tr><td>Unit 10: Creating the Whole Text</td><td>4</td><td>T, U</td></tr><tr><td>Course Review</td><td>2</td><td>U</td></tr></table>	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
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Unit 9: The Whole Academic Text	2	T, U																																			
Unit 10: Creating the Whole Text	4	T, U																																			
Course Review	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>Assignment (Literature review)</i> 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. <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 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> 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: <table border="1"> <thead> <tr> <th>Degree of magnitude</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Below 15%</td><td>Marked as it is.</td></tr> <tr> <td>15% - 25%</td><td>The score is deducted by 25%.</td></tr> <tr> <td>25% - 40%</td><td>The score is deducted by 50%.</td></tr> <tr> <td>Over 40%</td><td>The score is 0.</td></tr> </tbody> </table> Notes: Part of the test is marked as it is if no plagiarism is detected. Students who plagiarize over 40% <u>twice</u> will be prohibited from sitting the final examination. <i>Writing Center (Room 509)</i> Students are encouraged to visit the Writing Center or to schedule an appointment for additional help.	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 .
Degree of magnitude	Description										
Below 15%	Marked as it is.										
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Over 40%	The score is 0 .										
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. & Slaughter, 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)

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						
2						
3						
4						

3. Planned learning activities and teaching methods

WEEK	CONTENT—SUGGESTED TASKS	ASSIGNMENT/ HOMEWORK
1	Orientation of the Course Unit 1: The Academic Writing Process Introduction	
2	Unit 1: The Academic Writing Process (Cont.) Thinking about writing processes Distinguishing between academic and personal styles of writing Grammar of academic discourse	HW: Task 10
3	Unit 2: Researching and Writing Recognizing categories and classification The language of classification The structure of a research paper	HW: Task 17
4	Unit 3: Fundamentals & Feedback Exploring comparison and contrast structures The language of comparison and contrast Using comparisons and contrasts to evaluate and recommend	HW: Task 12
5	Unit 3: Fundamentals & Feedback (Cont.) The research paper Identifying a research gap The writing process	Assignment 1: Task 20
6	Unit 4: Definitions, Vocabulary & Clarity The clarity principle The language of definition The place of definition The writing process	HW: Task 15
7	Unit 5: Generalizations, Facts and Honesty Honesty principle The language of generalization	HW: Task 13
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/	Assignment 2: Writing Literature review
MID-TERM EXAMINATION		
9	Unit 6: Seeing Ideas and Sharing Texts Writing about events in time Connecting events Learning about peer reviews	HW: Tasks 12 & 13

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	HW: Tasks 9 & 11
11	Unit 8: Results, Discussion & Relevance What is an argument? The language of argument The Results and Discussion sections Finding an academic voice	HW: Task 9
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	HW: Task 9
13	Unit 10: Creating the Whole Text Structure of the research paper Creating your own research	
14	Unit 10: Creating the Whole Text Plagiarism Creating citations Paraphrase and summary Authorial identity	
15	Course Review	Submitting Literature review
FINAL EXAM		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Class participation and Assignments (30%)	80% Pass	80% Pass	80% Pass	
Midterm exam (30%)	80% Pass		80% Pass	80% 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. Rubrics

5.1. Midterm exam sample rubrics (100 points)

TASK 1: 30 points

CATEGORIES	CRITERIA	POINTS	CLO
Category	Farm animals seem to have more complex cognitive and social skills	7.5	CLO 1,2
Sub-category 1	1. Sheep experience stress a. increase stress (when isolated from the flock) b. reduce stress (when seeing familiar sheep faces)	7.5	
Sub-category 2	2. Cows' co-operative partnerships & physiological response on learning something new a. Those learning tasks experience an increase in heart rate (when facing same situation). b. Those not learning tasks do not experience a heart rate increase.	7.5	CLO 1,2
Sub-category 3	3. Pigs' different reactions react differently based on past experience a. avoid the place where they have been shut for long b. go for the place where they were released from quickly.	7.5	CLO 1,2
Total		30	

TASK 2: 70 points

CATEGORIES	CRITERIA	POINTS	CLO
Content	All main points relevant to topic Essay question fully answers	20	CLO 1,3,4
Organization	Topic and purpose of the essay discussed in the introduction Each main point discussed in a paragraph All main points summarized and rephrased in the conclusion	20	CLO 1,3,4
Coherence	Paragraphs ordered in a systematic manner based on, for example, importance, priority, etc. Comparison/contrast transitions are properly used.	15	CLO 1,3,4
Style and Tone	Formal writing with full forms Polite writing Academic vocabulary	15	CLO 1,3,4
Total		70	

5.2. Final exam rubrics: 100 points

CATEGORIES	CRITERIA	POINTS	CLO
Content	Presenting his/her view on the question clearly and persuasively	20	CLO 1,3,4

Structure of ideas	• Introduction with thesis statement, and conclusion with summary and comment • Topic sentences well supported with explanations, examples, etc.	40	CLO 1,3,4
Convincing argumentative techniques, e.g., counterargument		20	CLO 1,3,4
Language use: <i>use vocabulary and grammatical structures</i>		20	CLO 1,3,4
Total		100	

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 English

COURSE SYLLABUS

Course Name: Speaking AE2 (Effective Presentations)

Course Code: **EN012IU**

1. General information

Course name	- (in English) Speaking AE2 - (in Vietnamese) 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 ⁵ : 60
Credit points	2

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.

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 Needs analysis	2	I, T, U
	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:

CLO	SLO					
	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 7	Delivery techniques: Putting it all together	[2] <i>Effective Presentations</i> : p.50 + video clip Assignment: Topic(s) for group presentation)	Students will: • 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



INTERNATIONAL UNIVERSITY
DEPARTMENT OF ENGLISH

SPEAKING AE2 - MIDTERM EXAMINATION
RATING CHECKLIST

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.)	- 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: Posture, Gestures, Eye contact, Facial expression (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/Accurate, Informative and Persuasive	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
Visual Aids: Appropriateness, Clarity (Use of video clip exceeding 20 seconds – 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
Question response	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:**Yes No**

A. Introduction

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

☐	☐
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☐	☐
☐	☐
☐	☐

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

☐	☐

C. Ending

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

☐	☐
☐	☐
☐	☐
☐	☐

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 name	- <i>(in English)</i> Calculus 1 - <i>(in Vietnamese)</i> Toán cao cấp 1
Course designation	This course equip students with basic concepts of calculus: limits, continuity, differentiation, and integration. Applications of these concepts are extensively discussed.
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	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 ⁶ : 60
Credit points	4 ~ 6.2 ECTS

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.

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)		
	Topic	Weight	Level
	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
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:

CLO	PLO										
	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3										x	
4										x	
5										x	x

3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	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%

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

5. Date revised: April, 2024

6. Course coordinator/Lecturer

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

Ho Chi Minh City, 22/04/2024

HEAD/DEAN OF DEPARTMENT/SCHOOL

(Signature)



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

COURSE SYLLABUS

Course Name: Physics 1 (General Mechanics)

Course Code: PH013IU

1. General information

Course name	- <i>(in English)</i> Physics 1 - <i>(in Vietnamese)</i> Vật lý 1
Course designation	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.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. 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 ⁷ : 60
Credit points	2

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.

Required and recommended prerequisites for joining the course	None																										
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: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. An ability to understand of basic knowledge of law of conservations and dynamics of rigid body. CLO2. An ability to analysis and design a problem in science and engineering</td></tr><tr><td>Skill</td><td>CLO3. An ability in applying knowledge of physics</td></tr><tr><td>Attitude</td><td>CLO4. An ability to communicate effectively in writing manner</td></tr></table>			Competency level	Course learning outcome (CLO)	Knowledge	CLO1. An ability to understand of basic knowledge of law of conservations and dynamics of rigid body. CLO2. An ability to analysis and design a problem in science and engineering	Skill	CLO3. An ability in applying knowledge of physics	Attitude	CLO4. An ability to communicate effectively in writing manner																
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Attitude	CLO4. An ability to communicate effectively in writing manner																										
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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Chapter 1: Bases of Kinematics</td><td>2</td><td>I, T</td></tr><tr><td>Chapter 2: The Law of Motion</td><td>2</td><td>I, T</td></tr><tr><td>Chapter 3: Work and Mechanical Energy</td><td>3</td><td>I, T</td></tr><tr><td>Chapter 4: Linear Momentum and Collisions</td><td>2</td><td>I, T</td></tr><tr><td>Chapter 5: Rotation of a Rigid Object About a Fixed Axis</td><td>2</td><td>I, T</td></tr><tr><td>Chapter 6: Equilibrium and Elasticity</td><td>2</td><td>I, T</td></tr><tr><td>Chapter 7: Universal Gravitation</td><td>2</td><td>I, T</td></tr></table>			Topic	Weight	Level	Chapter 1: Bases of Kinematics	2	I, T	Chapter 2: The Law of Motion	2	I, T	Chapter 3: Work and Mechanical Energy	3	I, T	Chapter 4: Linear Momentum and Collisions	2	I, T	Chapter 5: Rotation of a Rigid Object About a Fixed Axis	2	I, T	Chapter 6: Equilibrium and Elasticity	2	I, T	Chapter 7: Universal Gravitation	2	I, T
Topic	Weight	Level																									
Chapter 1: Bases of Kinematics	2	I, T																									
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Chapter 6: Equilibrium and Elasticity	2	I, T																									
Chapter 7: Universal Gravitation	2	I, T																									
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] Halliday D., Resnick R. and Walker, J. (2011) Fundamentals of Physics, 9th edition, John Wiley and Sons, Inc. [2] Alonso M. and Finn E.J. (1992) Physics, Addison-Wesley Publishing Company. [3] Hecht, E. (2000) Physics: Calculus, 2nd edition, Brooks/Cole. [4] Faughn/Serway (2006) Serway's College Physics, Thomson Brooks/Cole.

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:

	PLO									
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: Bases of Kinematics	1	Quiz1	Lecture, Discussion, Inclass-Quiz	[1].0. [2].1.
3-4	Chapter 2: The Law of Motion	1	HW1	Lecture, Inclass, HW	[1].9.
5-6-7	Chapter 3: Work and Mechanical Energy	3	Quiz2	Lecture, Discussion, Inclass-Quiz	[2].2.
8-9	Chapter 4: Linear Momentum and Collisions	2	HW2, Quiz3	Lecture, Group work, HW	[1]. 2, 4 [2]. 2
10	Midterm				
11-12	Chapter 5: Rotation of a Rigid Object About a Fixed Axis	3	HW3	Lecture, Group work, HW	[2]. 4. [1]. 18.

13-14	Chapter 6: Equilibrium and Elasticity	3		Lecture, Group work	[3]. 10
15-16	Chapter 7: Universal Gravitation	3	HW4	Lecture, Discussion, HW	[2]. 8
17	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Attendance + Homework + in-class discussion (15%)				
Quizzes (Qz) / assignment (As) (15%)	Qz1, Qz3/ As.P1 50%Pass	Qz2, Qz4/ As.P2 50%Pass	Qz1, Qz2, Qz3, Qz4 / As.P3 50%Pass	Qz1, Qz2, Qz3, Qz4 / As.P4 50%Pass
Midterm exam (30%)	Q1, Q2, Q3 50%Pass	Q4, Q5 50%Pass	Q3, Q5 50%Pass	Q3, Q5 50%Pass
Final exam (40%)	Q1, Q2, Q3 50%Pass	Q4, Q5 50%Pass	Q3, Q5 50%Pass	Q3, Q5 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	Identifies own and others' assumptions and several relevant contexts when	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be	Shows an emerging awareness of present assumptions (sometimes

	carefully evaluates the relevance of contexts when presenting a position.	presenting a position.	more aware of others' assumptions than one's own (or vice versa).	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)	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies,

	make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	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.	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.	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: January 12, 2022



**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 ⁸ : 90

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.

Credit points	3 (theory) ~ 4.6 ECTS	
Required and recommended prerequisites for joining the course	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:		
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, 20/08/2023

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: CHE011IU

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 ⁹ : 90 hrs

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.

Credit points	3 ~ 4.6 ECTS
Required and recommended prerequisites for joining the course	
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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to General Chemistry for Engineers</td><td>0.2</td><td>I, T</td></tr><tr><td>Introduction to Matter</td><td>0.3</td><td>I, T</td></tr><tr><td>Measurements in Chemistry</td><td>0.5</td><td>I, T</td></tr><tr><td>Atoms, Molecules and Ions</td><td>1</td><td>I, T</td></tr><tr><td>Periodicity</td><td>1</td><td>I, T</td></tr><tr><td>Chemical Bonds</td><td>2</td><td>I, T</td></tr><tr><td>Intermolecular Forces</td><td>1</td><td>I, T</td></tr><tr><td>Gases and Their Properties</td><td>0.5</td><td>I, T</td></tr><tr><td>Solutions and Their Properties</td><td>0.5</td><td>I, T</td></tr><tr><td>Solids and Their Properties</td><td>0.5</td><td>I, T</td></tr><tr><td>Chemical Reactions</td><td>0.5</td><td>I, T</td></tr><tr><td>Chemical Kinetics</td><td>1</td><td>I, T</td></tr><tr><td>Chemical Equilibrium</td><td>1</td><td>I, T</td></tr><tr><td>Electrolytes, Acid- Base, pH and Buffer</td><td>2</td><td>I, T</td></tr><tr><td>Thermochemistry and Thermodynamics</td><td>2</td><td>I, T</td></tr></table>	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
Topic	Weight	Level																																															
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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	CLO	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, 20/08/2023

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 ¹⁰ : 30	
Credit points	1 (practical) ~ 2 ECTS	
Required and recommended prerequisites for joining the course	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.

¹⁰

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 (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	
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	Short lecture Experiment	

			Report	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	

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	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	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences

	discussed in priority order.	and implications) are identified clearly.	(consequences and implications) are identified clearly.	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, 20/8/2023
DEAN OF SCHOOL OF BIOTECHNOLOGY**



Assoc. Prof. NGUYEN VAN THUAN



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

COURSE SYLLABUS

Course Name: Calculus 2

Course Code: MA003IU

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 ¹¹ : 60
Credit points	4 (theory) ~ 6.2 ECTS

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.

Required and recommended prerequisites for joining the course	Calculus 1									
Course objectives	4. 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. 5. To introduce practical applications of these ideas and techniques, through practical examples taken from many areas of engineering, business, and life sciences. 6. 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:

CLO	PLO										
	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3										x	
4										x	
5										x	x

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 name	- <i>(in English)</i> Physics 2 - <i>(in Vietnamese)</i> Vật lý 2
Course designation	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.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. 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 ¹² : 60
Credit points	2 (theory) ~ 3.1 ECTS

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.

Required and recommended prerequisites for joining the course	None																	
Course objectives	This course will provide students with: 5. The basic knowledge of Fluid Mechanics and Thermal Physics 6. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques 7. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment 8. Confidence and fluency in discussing physics in English.																	
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. An ability to understand basic knowledge of the kinetic energy of ideal gas and the second law of thermal dynamics. CLO2. An ability to analysis and design a problem in science and engineering</td></tr><tr><td>Skill</td><td colspan="2">CLO3. An ability in applying knowledge of physics</td></tr><tr><td>Attitude</td><td colspan="2">CLO4. An ability to communicate effectively in writing manner</td></tr></table>			Competency level	Course learning outcome (CLO)		Knowledge	CLO1. An ability to understand basic knowledge of the kinetic energy of ideal gas and the second law of thermal dynamics. CLO2. An ability to analysis and design a problem in science and engineering		Skill	CLO3. An ability in applying knowledge of physics		Attitude	CLO4. An ability to communicate effectively in writing manner				
Competency level	Course learning outcome (CLO)																	
Knowledge	CLO1. An ability to understand basic knowledge of the kinetic energy of ideal gas and the second law of thermal dynamics. CLO2. An ability to analysis and design a problem in science and engineering																	
Skill	CLO3. An ability in applying knowledge of physics																	
Attitude	CLO4. An ability to 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) <table><tr><td>Topic</td><td>Weight</td><td>Level</td></tr><tr><td>Chapter 1: Fluid Mechanics</td><td>2</td><td>I, T</td></tr><tr><td>Chapter 2: Temperature, Heat, and the First Law of Thermodynamics</td><td>4</td><td>I, T</td></tr><tr><td>Chapter 3: The Kinetic Theory of Gases</td><td>5</td><td>I, T</td></tr><tr><td>Chapter 4: Entropy and the Second Law of Thermodynamics</td><td>4</td><td>I, T</td></tr></table>			Topic	Weight	Level	Chapter 1: Fluid Mechanics	2	I, T	Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	4	I, T	Chapter 3: The Kinetic Theory of Gases	5	I, T	Chapter 4: Entropy and the Second Law of Thermodynamics	4	I, T
Topic	Weight	Level																
Chapter 1: Fluid Mechanics	2	I, T																
Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	4	I, T																
Chapter 3: The Kinetic Theory of Gases	5	I, T																
Chapter 4: Entropy and the Second Law of Thermodynamics	4	I, T																
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] Halliday D., Resnick R. and Walker, J. (2011) <i>Fundamentals of Physics</i>, 9th edition, John Willey and Sons, Inc. [2] Alonso M. and Finn E.J. (1992) <i>Physics</i>, Addison-Wesley Publishing Company. [3] Hecht, E. (2000) <i>Physics: Calculus</i>, 2nd edition, Brooks/Cole. [4] Faughn/Serway (2006) <i>Serway's College Physics</i>, Thomson Brooks/Cole.

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:

CLO	PLO									
	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	1, 2	Quiz1	Lecture, Discussion, Inclass-Quiz	[1].0. [2].1.
3-6	Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	1, 2	HW1	Lecture, Inclass, HW	[1].9.
7-9	Chapter 3: The Kinetic Theory of Gases (part 1)	3, 4	Quiz2	Lecture, Group work	[2].2.
10	Midterm				
11-12	Chapter 3: The Kinetic Theory of Gases (part 2)	3, 4	Quiz3, HW2	Lecture, Group work, HW	[2]. 4. [1]. 18.
13-16	Chapter 4: Entropy and the Second Law of Thermodynamics	3, 4	HW3, HW4	Lecture, Group work	[3]. 10
17	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4

Attendance + Homework + in-class discussion (15%)				
Quizzes (Qz) / assignment (As) (15%)	Qz1, Qz3/ As.P1 50%Pass	Qz2, Qz4/ As.P2 50%Pass	Qz1, Qz2, Qz3, Qz4 / As.P3 50%Pass	Qz1, Qz2, Qz3, Qz4 / As.P4 50%Pass
Midterm exam (30%)	Q1, Q2, Q3 50%Pass	Q4, Q5 50%Pass	Q3, Q5 50%Pass	Q3, Q5 50%Pass
Final exam (40%)	Q1, Q2, Q3 50%Pass	Q4, Q5 50%Pass	Q3, Q5 50%Pass	Q3, Q5 50%Pass

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

5. Rubrics (optional)

5.2. 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		

5.3. 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.

5.4. 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: January 12, 2022

Ho Chi Minh City, 20/8/2023



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

COURSE SYLLABUS

Course Name: BIOSTATISTICS

Course Code: BT317IU

1. General information

Course name	- <i>(in English)</i> Biostatistics - <i>(in Vietnamese)</i> Thống kê sinh học
Course designation	This subject will provide knowledge on following: - Scope, nature, tools, language, and interpretation of elementary statistics. - Descriptive statistics; graphical and numerical representation of information; measures of location, dispersion, position, and dependence; exploratory data analysis. - Elementary probability theory, discrete and continuous probability models. - Inferential statistics, point and interval estimation, tests of statistical hypotheses. - Inferences involving one or two populations, ANOVA, correlation and regression analysis, and chi-square tests; use of statistical computer packages (SPSS).
Semester(s) in which the module is taught	4, 5
Person responsible for the module	A/Prof. Nguyen, Tan Khoi
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 ¹³ : 60 h	
Credit points	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the module		
Course objectives	After studying this course, the students will be able to: - Perform standard statistical tests with common statistical packages - Respect different opinions - Understand (of other's needs) - Be active in finding solution for challenges or problems - Enhance critical thinking in domains involving judgments based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook, through projects, interdisciplinary examples and exercises	
Course learning outcomes	Upon the successful completion of this course students will be able to:	
	Competency level	Course learning outcome (CLO)
	Knowledge	CLO1. Learn to understand the main features of statistics; Understand the role of statistics and data analytic methods. Understand the fundamental principles of statistical inference CLO2. Be able to distinguish the general principles underlying the most common tests
	Skill	CLO3. Be able to analyze statistical data properly CLO4. Know the assumptions of common tests and impacts of violations
	Attitude	CLO5. Active in finding solution for challenges or problems and be able to solve practical problems and analyze the solutions

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.

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i> Weight: lecture session (3 hours), lab 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>Basic concepts</td><td>1</td><td>I</td></tr><tr><td>Sample parameters</td><td>1</td><td>T</td></tr><tr><td>Continuous distribution of probability</td><td>1</td><td>T, U</td></tr><tr><td>Estimation of parameters</td><td>1</td><td>T, U</td></tr><tr><td>Hypothesis testing</td><td>1</td><td>T, U</td></tr><tr><td>ANOVA</td><td>1</td><td>T, U</td></tr><tr><td>Non-parametric tests</td><td>1</td><td>T, U</td></tr><tr><td>Regression analysis</td><td>1</td><td>T, U</td></tr></table>	Topic	Weight (theory)	Level	Basic concepts	1	I	Sample parameters	1	T	Continuous distribution of probability	1	T, U	Estimation of parameters	1	T, U	Hypothesis testing	1	T, U	ANOVA	1	T, U	Non-parametric tests	1	T, U	Regression analysis	1	T, U
Topic	Weight (theory)	Level																										
Basic concepts	1	I																										
Sample parameters	1	T																										
Continuous distribution of probability	1	T, U																										
Estimation of parameters	1	T, U																										
Hypothesis testing	1	T, U																										
ANOVA	1	T, U																										
Non-parametric tests	1	T, U																										
Regression analysis	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: • Jim Fowler, Lou Cohen, and Ph. Jarvis. 1998. Practical Statistics for Field Biology. John & Wiley & Sons. 2nd Edition. References: • Chap T. Le. 2003. Introductory Biostatistics. John & Wiley & Sons. • J. Susan Milton and Jesse C. Arnold. 2003. Introduction to Probability and Statistics. Mc Graw-Hill. 4th Edition.																											

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	1						
2	2						
3	3						
4	3						
5							1

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Basic concepts	1, 2	Midterm exam	Lecture, discussion
2	Sample parameters	1, 3, 4	Midterm exam	Lecture, discussion
3	Continuous distribution of probability	1, 3, 4	Midterm exam	Lecture, discussion
4	Estimation of parameters	1,2,3, 4	Midterm exam	Lecture, discussion
5	Hypothesis testing	1,2,5	Midterm exam	Lecture, discussion
6	ANOVA	1,2	Final exam	Lecture, discussion
7	Non-parametric tests	1, 2	Final exam	Lecture, discussion
8	Regression analysis	1, 2	Final exam	Lecture, discussion
9-10	Midterm			
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Class participation		10
Quiz		20
Mid-term exam	1	30
Final exam	1	40

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Class participation (10%)	Class participation 50%Pass				
Quiz (20%)			Quiz 50%Pass		
Midterm exam (30%)	Midterm exam 50%Pass	Midterm exam 50%Pass			
Final exam (40%)				Final exam 50%Pass	Final exam 50%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. **Date revised:** April, 2024

6. **Course coordinator/Lecturer**

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Nguyen Tan Khoi
- Email: ntkhoi@hcmiu.edu.vn

Ho Chi Minh City, 20/04/2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

COURSE SYLLABUS

Course Name: Practice in Biostatistics

Course Code: BT318IU

7. General information

Course name	- (in English) Practice in Biostatistics - (in Vietnamese) Thực hành thống kê sinh học
Course designation	<i>The course will introduce students to the scope, nature, tools, language, and interpretation of elementary statistics. It will include descriptive statistics, inferential statistics, types of hypothesis testing methods, usage of statistical computer packages (Data analysis in Excel)</i>
Course type	☒ General knowledge ☐ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the course is taught	2,3
Person responsible for the course	MSc. Do Ngoc Phuc Chau
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, lab works, project, lab exam
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 Private study including examination preparation, specified in hours ¹⁴ : 30
Credit points	1 (practical) ~ 2 ECTS
Required and recommended prerequisites for joining the course	Biostatistics (parallel)

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	<i>The student can use Excel to analyse the data, how to conduct a survey-experiment and present the collected data, distinguish between hypothesis tests</i>			
Course learning outcomes	<i>Upon the successful completion of this course students will be able to:</i>			
	Competency level	Course learning outcome (CLO)		
	Knowledge	CLO1. Present the collected data from experiment CLO2. Distinguish different hypothesis testing methods for analysis		
	Skill	CLO3. Use Excel to present and analyse the data CLO4. Apply different statistic methods to acquire the information from collected data		
	Attitude	CLO5. An ability to obtain relevant knowledge of ethical as well as the associated plagiarism issue		
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: L (Lecture); D (Demonstrate); U (Utilize)			
	Week	Topics	Weight	Level
	1	Introduction - Processing data and presenting data - Calculating simple discrete and continuous distributions	1	L, D, U
	2	Simple hypothesis testing - Carrying out simple hypothesis testing using Excel	1	L, D, U
	3	ANOVA and Non-parametric tests - Carrying out ANOVA and non-parametric tests using Excel	1	L, D, U
	4	Regression and Normality test - Performing regression using Excel - Perform normality test	1	L, D, U
	5	Present the group project	1	U
6	Lab examination	1	U	
Examination forms	<i>- Group project on survey experiment to know data collection, summary, and data analysis: written report and presentation - Lab exam includes multiple choice questions and solving problems.</i>			
Study and examination requirements	<i>- Attendance: A full attendance of 100% is compulsory for the class sessions. Students will be assessed based on their participations. Questions and comments are strongly encouraged. - Students must get more than 50/100 points overall to pass this module.</i>			
Reading list	<i>References</i> 1. Jim Fowler, Lou Cohen, and Ph. Jarvis. 1998. Practical Statistics for Field Biology. John & Wiley & Sons. 2nd Edition. 2. Chap T. Le. 2003. Introductory Biostatistics. John & Wiley & Sons. 3. J. Susan Milton and Jesse C. Arnold. 2003. Introduction to Probability and Statistics. Mc Graw-Hill. 4th Edition.			

8. 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						2	
2						3	
3				3		3	
4							

9. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction	1, 2, 3	Quiz 1	Lecture, Utilize, Labwork	
2	Simple hypothesis testing	2, 3	HW 1	Lecture, Utilize, Labwork	
3	ANOVA and Non-parametric tests	2, 3	HW 2	Lecture, Utilize, Labwork	
4	Correlation and Normality tests	2, 3	Quiz 2	Lecture, Utilize, Labwork	
5	Group project presentation	1, 2, 3, 4, 5	Written report	Presentation	
6	Lab examination	2, 3, 4	Written exam	Exam	

10. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Quiz (20%)	Quiz 1 70%Pass	Quiz 1, 2 70%Pass	Quiz 1, 2 70%Pass		
Homework (30%)		HW 1, 2 70%Pass	HW 1, 2 70%Pass		
Group project (20%)	Report 90%Pass	Report 90%Pass	Report 90%Pass	Presentation 90%Pass	Report 90%Pass
Lab examination (30%)		All questions 80%Pass	All questions 80%Pass	All questions 80%Pass	

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

11. Date revised: April, 2024

12. Course coordinator/Lecturer

- School/Department: School of Biotechnology
- Lecturer: MSc. Do Ngoc Phuc Chau
- Email: dnpchau@hcmiu.edu.vn

Ho Chi Minh City, 20/04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



**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 ¹⁵ : 90	
Credit points	3	
Required and recommended prerequisites for joining the course	None	
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, food 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.

¹⁵

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
	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 Quiz (30%)	IP1,2 Quiz1,2 60%Pass	IP3→5 Quiz3 60%Pass	IP6→8 Quiz4,5 60%Pass	IP9,10 Quiz6 60%Pass	IP1→10 60%Pass	
Midterm exam (30%)	PartI: Q3→16 PartII: Q1→8 PartIII: Q1→8 60%Pass	PartI: Q17→20 PartII: Q9,10 PartIII: Q9,10 60%Pass				PartI: Q1→2 60%Pass
Final exam (40%)			PartI: Q1→12 PartII: Q1→6 PartIII: Q1→6 60%Pass	PartI: 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	Milestone		Benchmark
	76-100	51-75	26-50	0-25
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is

	Capstone	Milestone		Benchmark
	76-100	51-75	26-50	0-25
	transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	transitions) is clearly and consistently observable within the presentation.	transitions) is intermittently observable within the presentation.	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	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or	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	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or

	Capstone	Milestone		Benchmark
	76-100	51-75	26-50	0-25
	presentation or establishes the presenter's credibility/ authority on the topic.	establishes the presenter's credibility/ authority on the topic.	presenter's credibility/ authority on the topic.	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.

6. Date revised: 11/3/2022

Ho Chi Minh City 20/8/2024



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Industrial Engineering and Management**

COURSE SYLLABUS

Course Name: Project Management

Course Code: IS050IU

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 ¹⁶ : 90 h
Credit points	3 credits (theory) ~ (4.6 ECTS)

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.

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:	
	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). 5 th Edition, Newtown Square, Pa. : Project Management Institute, Inc. [2] Project management: A managerial approach / Jack R. Meredith, Samuel J. Mantel. 7 th 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:

CLO	SLO						
	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	2, 3, 4	HW 5	Lecture, Group work	[1].

	- Bottom-Up budgeting - Improving the process of cost estimation				
10	Lecture 8: Risk management. - Risk management planning - Risk identification - Risk analysis - Risk monitoring and control - Using Crystal Ball software		HW 6	Lecture, Group work	
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%Pass	HW4, HW5, HW6 50%Pass	HW7-8 50%Pass	HW9-10 50%Pass
Midterm exam (30%)	Q1 50%Pass	Q2 50%Pass	Q3, Q4 50%Pass	
Final exam (40%)	Q1 50%Pass	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	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	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously	Issue/ problem to be considered critically is stated but description leaves some terms undefined,	Issue/ problem to be considered critically is stated without clarification or description.

	necessary for full understanding.	impeded by omissions.	ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	
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	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective,	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.

	view are synthesized within position (perspective, thesis/hypothesis).	thesis/hypothesis).		
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	Language choices are thoughtful and generally support the	Language choices are mundane and commonplace and partially	Language choices are unclear and minimally support the

	compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	effectiveness of the presentation. Language in presentation is appropriate to audience.	support the effectiveness of the presentation. Language in presentation is appropriate to audience.	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: March 23, 2022



VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Industrial Engineering and Management

COURSE SYLLABUS

Course Name: E-LOGISTICS IN SUPPLY CHAIN MANAGEMENT

Course Code: **IS062IU**

1. General information

Course name	- (in English) E-Logistics in Supply chain Management - (in Vietnamese) 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)

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			
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		
Course learning outcomes	Upon the successful completion of this course students will be able to:		
	Competency level	Course learning outcome (CLO)	
	Knowledge	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	
	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	
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)		
	Topic	Weight	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-	1	I, T, U	
	Lecture 7: e-Logistics	2	I, T, U	
	Lecture 8: e-Warehousing and e-fulfillment	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

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:

CLO	ILO						
	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

2. 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	
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		
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 & lecture8.	
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		

3. 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.

4. 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
3	Demonstrates partial understanding of the problem. Most requirements of task are
2	Demonstrates little understanding of the problem. Many requirements of task are
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	Issue/ problem to be considered critically is stated, described, and clarified so that	Issue/ problem to be considered critically is stated but description leaves some terms undefined,	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	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of	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	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'	Shows an emerging awareness of present assumptions (sometimes labels assertions as
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	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective,	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	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not

Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make
Central Message	Central message is compelling (precisely stated, appropriately repeated,	Central message is clear and consistent with the supporting material	Central message is basically understandable but is not often repeated and is	Central message can be deduced but is not explicitly stated in the

Source: Association of American Colleges and Universities

Date revised: 10/5/2022

Ho Chi Minh City, 10/05/2022
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
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.

3. Date revised: April 10th, 2023

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.	Draws upon sources to support most points. Some evidence may not support	Draws upon primary and secondary source information in useful and illuminating ways to support key points.

		Quotations may be poorly integrated into paragraphs. Some possible problems with source citations	arguments or may appear where inappropriate. Quotations integrated well into paragraphs. Sources cited correctly	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 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) ~ 4.6 ECTS

Required and recommended prerequisites for joining the course	Chemistry for Engineers		
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:

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

3. Planned learning activities and teaching methods

We ek	Topic	CL O	Assessm ents	Learning activities	Resour ces
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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ¹⁷ : 90 h								
Credit points	3 (theory) ~ 4.6 ECTS								
Required and recommended prerequisites for joining the module	Organic Chemistry								
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: <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. Understand technologies, challenges and issues involved in modern day food production, processing, distribution and marketing for both the food industry and consumers.</td></tr> <tr> <td>Skill</td><td>CLO2. Efficiently communicate well with lecturers during teaching and presentation.</td></tr> <tr> <td>Attitude</td><td>CLO3. Collaborate well with other students in homework and seminar sessions</td></tr> </tbody> </table>	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
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								

17

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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to Food Science and Technology</td><td>1</td><td>I, T</td></tr><tr><td>Introduction to food chemistry</td><td>2</td><td>I, T</td></tr><tr><td>Introduction to food microbiology</td><td>2</td><td>I, T</td></tr><tr><td>Sensory evaluation and labeling regulations</td><td>1</td><td>T</td></tr><tr><td>Industrial food processing and preservation</td><td>2</td><td>T</td></tr><tr><td>Cereal and oilseed products</td><td>1</td><td>T</td></tr><tr><td>Fruit and vegetable products</td><td>1</td><td>T</td></tr><tr><td>Milk and dairy products</td><td>1</td><td>T</td></tr><tr><td>Meat, poultry and eggs, fish and seafood</td><td>1</td><td>T</td></tr><tr><td>Food additives</td><td>1</td><td>T</td></tr><tr><td>Product development in the food industry</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 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
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		

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		

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

%Pass (Presentation): % 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: Assoc. Prof. Nguyen Vu Hong Ha
- Email: nvhha@hcmiu.edu.vn

Ho Chi Minh City, 20/ 04/ 2024

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 ¹⁸ : 120 h	
Credit points	4 (theory) ~ 6.2 ECTS	
Required and recommended prerequisites for joining the module	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

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.

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>Course overview. Basic variable of physics. Unit conversion. Ideal gas. Real gas</td><td>1</td><td>I</td></tr><tr><td>Systems and processes. Thermodynamics. Steam table</td><td>1</td><td>T</td></tr><tr><td>Mass balance</td><td>1</td><td>T, U</td></tr><tr><td>Energy balance</td><td>1</td><td>T, U</td></tr><tr><td>Fluid statics. Fluid dynamics</td><td>1</td><td>I, T</td></tr><tr><td>Basic equation of fluid flow</td><td>1</td><td>T, U</td></tr><tr><td>Fluid friction - MEB - Pump design</td><td>1</td><td>T, U</td></tr><tr><td>Heat transfer-Conduction</td><td>1</td><td>T, U</td></tr><tr><td>Heat transfer-Convection</td><td>1</td><td>T, U</td></tr><tr><td>Heat transfer- heat exchanger</td><td>1</td><td>T, U</td></tr><tr><td>Heat transfer – unsteady state</td><td>1</td><td>T, U</td></tr><tr><td>Psychrometrics</td><td>1</td><td>T, U</td></tr><tr><td>Refrigeration</td><td>1</td><td>T, U</td></tr><tr><td>In-class presentation (current trends, new techniques in food engineering)</td><td>2</td><td>T, U</td></tr></table>	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
	Topic	Weight	Level																																											
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	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																																											
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	Heat transfer- heat exchanger	1	T, U																																											
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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	25
Mid-term exam	1	35
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. **Date revised:** April, 2024

6. **Course coordinator/Lecturer**

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dq Tuan@hcmiu.edu.vn

Ho Chi Minh City, 20/ 04/ 2024

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 ¹⁹ : 90 h
Credit points	3 (theory) ~ 4.6 ECTS
Required and recommended prerequisites for joining the module	Organic Chemistry

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.

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			

5. 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.

13. Date revised: April, 2024

14. 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, 20/ 04/ 2024

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 ²⁰ : 60 h
Credit points	2 (theory) ~ 3.1 ECTS
Required and recommended prerequisites for joining the module	None

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.

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:		
	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)		
	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						
CLO	1	2	3	4	5	6	7
1				3			
2		4					
3							1

3.Planned learning activities and teaching methods

Week	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. **Date revised:** April, 2024

6. 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, 20/ 04/ 2024

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 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 ²¹ : 90 h
Credit points	3 (theory) ~ 4.6 ECTS
Required and recommended prerequisites for joining the module	Introduction to Food Science and Technology

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: - 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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to microbial world; history of food microbiology and significance of food microbiology</td><td>1</td><td>I</td></tr><tr><td>Basics of bacteriology, presence of bacteria in foods</td><td>1</td><td>T</td></tr><tr><td>Basics of fungi, virus and prions</td><td>1</td><td>T</td></tr><tr><td>Factors affecting growth and survival of microorganisms: temperature (effects, calculation for heat treatment)</td><td>2</td><td>T</td></tr><tr><td>Factors affecting growth and survival of microorganisms: redox potential and oxygen preferences</td><td>2</td><td>T</td></tr><tr><td>Factors affecting growth and survival of microorganisms: acids and water activity</td><td>1</td><td>T</td></tr><tr><td>Factors affecting growth and survival of microorganisms: antimicrobial content and nutrient content</td><td>1</td><td>T</td></tr><tr><td>Food spoilage and preservation techniques to control food microorganism</td><td>2</td><td>T</td></tr><tr><td>Foodborne diseases: classification and virulence factors</td><td>1</td><td>T</td></tr><tr><td>Foodborne diseases: pathogens and mechanisms</td><td>1</td><td>T</td></tr><tr><td>Application of food microbiology: fermentation and products</td><td>1</td><td>T, U</td></tr><tr><td>Application of food microbiology: prebiotics, probiotics and synbiotics.</td><td>1</td><td>T, U</td></tr></table>	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
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						
CLO	1	2	3	4	5	6	7
1		2					
2		4					
3					3		

3. Planned learning activities and teaching methods

We ek	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
4-5	Factors affecting growth and survival of microorganisms: temperature (effects, calculation for heat treatment)	1, 2, 3	Midterm exam	Lecture, discussion
6-7	Factors affecting growth and survival of microorganisms: redox potential and oxygen preferences	1, 2, 3	Midterm exam	Lecture, discussion
8	Factors affecting growth and survival of microorganisms: acids and water activity	1, 2, 3	Midterm exam	Lecture, discussion
9-10	Midterm			
11	Factors affecting growth and survival of microorganisms: nutrient content and naturally antimicrobial content of foods	1, 2, 3	Final exam	Lecture, discussion
12	Food spoilage and preservation techniques to control food microorganism	1, 2, 3	Final exam	Lecture, discussion
13	Foodborne diseases: classification and virulence factors	1, 2, 3	Final exam	Lecture, discussion
14-15	Foodborne diseases: pathogens and mechanisms	1, 2, 3	Final exam	Lecture, discussion

We ek	Topic	CLO	Assessments	Learning activities
16	Application of food microbiology: fermentation and products.	1, 2, 3	Final exam	Lecture, discussion
17	Application of food microbiology: prebiotics, probiotics and synbiotics	1, 2, 3	Final exam	Lecture, discussion
18- 20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignments	1-3	30
Mid-term exam	1	30
Final exam	1	40

Course assessment planh

Assessment Type	CLO1	CLO2	CLO3
Assignment (30%)			Assignment 70%Pass
Midterm exam (30%)	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. 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, 20/ 04/ 2024

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 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	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
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	01 (practical) ~ 2 ECTS
Required and recommended prerequisites for joining the module	Food microbiology (Parallel)

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 Escherichia coli – 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.

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. **Date revised:** April, 2024

6. **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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

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 ²² : 90 h
Credit points	3 (theory) ~ 4.6 ECTS

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 module	Biochemistry, Introduction to Food Science and Technology																							
Course objectives	After studying this course, the students will be able to: - Understand the roles of nutrients in 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 of 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><th>Competency level</th><th colspan="2">Course learning outcome (CLO)</th></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 habit.</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 habit.		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 habit.																							
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><th>Topic</th><th>Weight</th><th>Level</th></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 labelling</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 labelling	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 labelling	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

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 labelling	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

Week	Topic	CLO	Assessments	Learning activities
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			

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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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ²³ : 90 h	
Credit points	3 (theory) ~ 4.6 ECTS	
Required and recommended prerequisites for joining the module	Food Engineering Principles, Introduction to Food Science and Technology	
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

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.

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 unit operation, heat transfer</td><td>1</td><td>I, U</td></tr><tr><td>Water in food</td><td>1</td><td>T, U</td></tr><tr><td>Drying</td><td>3</td><td>T, U</td></tr><tr><td>Evaporation</td><td>2</td><td>T, U</td></tr><tr><td>Review</td><td>1</td><td>T, U</td></tr><tr><td>Freezing</td><td>2</td><td>T, U</td></tr><tr><td>Thermal preservation</td><td>2</td><td>T, U</td></tr><tr><td>Food Irradiation</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	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
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						
CLO	1	2	3	4	5	6	7
1	3						
2			3				
3					3		

3.Planned learning activities and teaching methods

Week	Topic	CL O	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%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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ²⁴ : 30 h
Credit points	1 (lab work) ~ 2 ECTS

²⁴

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 module	Food Unit Operation 1 (parallel)		
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:		
	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
	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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



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	- (in English) Food Physics and Colloids - (in Vietnamese) Vật lý thực phẩm và hệ keo
Course designation	<i>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.</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. 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 ²⁵ : 60 h									
Credit points	2 (theory) ~ 3.1 ECTS									
Required and recommended prerequisites for joining the module	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: <table><tr><td>Competency level</td><td>Course learning outcome (CLO)</td></tr><tr><td>Knowledge</td><td>CLO1. Apply knowledge in mathematics, physics and statistics in solving problems related to food processing.</td></tr><tr><td>Skill</td><td>CLO2. Communicate efficiently to present technical problems.</td></tr><tr><td>Attitude</td><td>CLO3. Acquire new knowledge through self-learning</td></tr></table>		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
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									

 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.

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
	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.

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

Week	Topic	CLO	Assessments	Learning activities
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			

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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ²⁶ : 90
Credit points	3 (theory) ~ 4.6 ECTS

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	Organic Chemistry 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:	
	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) <table><tr><th>Week</th><th>Content</th><th>Weight</th><th>Level</th></tr><tr><td>1</td><td>Introduction to food analysis</td><td>1</td><td>I</td></tr><tr><td>2</td><td>Total dried basis and moisture Ash and mineral analyses</td><td>1</td><td>T, U</td></tr><tr><td>3</td><td>Protein & Lipid analysis</td><td>1</td><td>T, U</td></tr><tr><td>4</td><td>Spectroscopy: basic principles UV/Visible Spectroscopy</td><td>1</td><td>T, U</td></tr><tr><td>5</td><td>- Spectroscopy: Quantitative analysis - Total protein analysis</td><td>1</td><td>T, U</td></tr><tr><td>6</td><td>Total carbohydrate and total phenolic analysis</td><td>1</td><td>T, U</td></tr><tr><td>7</td><td>Atomic absorption spectroscopy (AAS)</td><td>1</td><td>T, U</td></tr><tr><td>8</td><td>Group presentation 1</td><td>1</td><td>I, U</td></tr><tr><td>9</td><td>Principles of chromatography and Thin layer chromatography (TLC)</td><td>1</td><td>T, U</td></tr><tr><td>10</td><td>HPLC: column, mobile phase, sample, detector, analysis techniques</td><td>1</td><td>T, U</td></tr><tr><td>11</td><td>Gas Chromatography (GC): introduction, column, analysis theory, detector</td><td>1</td><td>T, U</td></tr><tr><td>12</td><td>Amino acid composition analysis</td><td>1</td><td>T, U</td></tr><tr><td>13</td><td>Fatty acid composition analysis</td><td>1</td><td>T, U</td></tr><tr><td>14</td><td>Sugar composition analysis</td><td>1</td><td>T, U</td></tr><tr><td>15</td><td>Vitamin & Mineral composition analysis</td><td>1</td><td>T, U</td></tr></table>	Week	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
Week	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	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: - 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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



**VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY**
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	<i>This subject will provide knowledge on following:</i> - <i>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.</i> - <i>Advanced methods in food analysis such as Gravimetric, volumetric, HPLC, Infrared chromatography, atomic absorption spectroscopy.</i>
Course type	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
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 works Private study including examination preparation, specified in hours ²⁷ : 30		
Credit points	1 (lab work) ~ 2 ECTS		
Required and recommended prerequisites for joining the course	Food Analysis (parallel)		
Course objectives	After studying this course, the students will 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. - Have good analysis technique in a 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

²⁷ 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.

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 Your - 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, 2ndedn. 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,

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	(%)
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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 reaction 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 ²⁸ : 90 h
Credit points	3 (theory) ~ 4.6 ECTS
Required and recommended prerequisites for joining the module	Introduction to Food Science and Technology

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	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 the food fermentation. - Understand 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 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. 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><th>Topic</th><th>Weight</th><th>Level</th></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, butter milk, 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, butter milk, 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, butter milk, 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, d., 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			

Week	Topic	CLO	Assessments	Learning activities
11-12	The traditional fermentation products: Chao, soy sauce, yogurt, tempeh, miso, sauerkraut & single cell protein	1,2	Final exam	Lecture, discussion
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.

5. **Date revised:** April, 2024

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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

COURSE SYLLABUS

Course Name: PRACTICE IN ENZYME AND FOOD FERMENTATION

Course Code: **BTFT256IU**

1. General information

Course name	- (in English) Practice in Enzyme and Food Fermentation - (in Vietnamese) Thực hành Enzyme và Lên men Thực phẩm
Course designation	<i>This subject will provide knowledge on following:</i> - Knowledge and skill of food enzymes, technological processes and equipment in the production of different fermented foods.
Course type	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
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 (lab work) ~ 2 ECTS
Required and recommended prerequisites for joining the module	Enzyme and Food Fermentation (Parallel)

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: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Knowledge on how to produce pectinase, determine its activity and its use in juice production as well as to produce beer</td></tr><tr><td>Skill</td><td>CLO2. Perform experiments and analyze data CLO3. Present the results well</td></tr><tr><td>Attitude</td><td>CLO4. Work well in a group</td></tr></table>	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				
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) <table><tr><th>Topic</th><th>Weight (lab)</th><th>Level</th></tr><tr><td>Medium preparation and microbial inoculation</td><td>2</td><td>T, U</td></tr><tr><td>Determination of pectinase activity and its effect on juice production</td><td>2</td><td>T, U</td></tr><tr><td>Sugar content determination of different types of beer</td><td>2</td><td>T, U</td></tr></table>	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
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 EEL. 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.

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, 20/ 04/ 2024

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: - 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.
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 ²⁹ : 90 h
Credit points	3 (theory) ~ 4.6 ECTS
Required and recommended prerequisites for joining the module	Introduction to Food Science and Technology, Nutrition and Functional Foods

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 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. - 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	1	I
	General principles of toxicology	3	T
	Factors affecting food toxicology	1	T
	Toxins in foods	1	T
	Residues in food	1	T
	Food safety	3	T
	System for food surveillance and risk prevention	2	T
	Food safety operation in food supply chain	2	T
	Seminar	1	T

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. - Mariott, 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

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	Introduction of food toxicology	1	Midterm exam	Lecture, discussion
2-4	General principles of toxicology	1,2	Midterm exam	Lecture, discussion
5	Factors affecting food toxicology	1,2	Midterm exam	Lecture, discussion
6	Toxins in foods	1,2,3	Midterm exam	Lecture, discussion
7	Residues in food	1,2,3	Midterm exam	Lecture, discussion
8	Food safety	1,2,3	Final exam	Lecture, discussion
9-10	Midterm			

Week	Topic	CLO	Assessments	Learning activities
11-12	Food safety	1,2,3	Final exam	Lecture, discussion
13-14	System for food surveillance and risk prevention	1,2,3	Final exam	Lecture, discussion
15-16	Food safety operation in food supply chain	1,2,3	Final exam	Lecture, discussion
17	Seminar	1,2		Presentation, Q&A
18-20	Reserve week and Final exam			

4. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Assignments	1-3	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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ³⁰ : 90 h

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.

Credit points	3 (theory) ~ 4.6 ECTS	
Required and recommended prerequisites for joining the course	None	
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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to food packaging</td><td>1</td><td>I</td></tr><tr><td>Metal packaging</td><td>1</td><td>T, U</td></tr><tr><td>Glass packaging</td><td>1</td><td>T, U</td></tr><tr><td>Plastic packaging</td><td>1</td><td>T, U</td></tr><tr><td>Paper and paper-based packaging</td><td>1</td><td>T, U</td></tr><tr><td>Packaging technology of foods: MAP and active packaging</td><td>1</td><td>T, U</td></tr><tr><td>Food Biodeterioration and preservation</td><td>1</td><td>T, U</td></tr><tr><td>Introduction and history of food additives</td><td>1</td><td>I</td></tr><tr><td>Risks and benefits of food additives</td><td></td><td></td></tr><tr><td>Nutritional additives and Sweeteners</td><td>1</td><td>T, U</td></tr><tr><td>Coloring agents</td><td>1</td><td>T, U</td></tr><tr><td>Flavoring agents</td><td>1</td><td>T, U</td></tr><tr><td>Antioxidants</td><td>1</td><td>T, U</td></tr><tr><td>Preservatives</td><td>1</td><td>T, U</td></tr><tr><td>Emulsifier</td><td>1</td><td>T, U</td></tr><tr><td>Texturizing agents</td><td>1</td><td>T, U</td></tr></table>	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
Topic	Weight	Level																																																		
Introduction to food packaging	1	I																																																		
Metal packaging	1	T, U																																																		
Glass packaging	1	T, U																																																		
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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						
CLO	1	2	3	4	5	6	7
1	3						
2	3						
3			3				
4					3		

3.Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	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

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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

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 hours³¹: 90 h								
Credit points	3 (theory) ~ 4.6 ECTS								
Required and recommended prerequisites for joining the module	Food Engineering Principles; Introduction to Food Science and Technology								
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: <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 in mathematics, physics and statistics in solving problems related to food processing.</td></tr> <tr> <td>Skill</td><td>CLO2: Communicate efficiently to present technical problems.</td></tr> <tr> <td>Attitude</td><td>CLO3: Collaborate well with other students in team work</td></tr> </tbody> </table>	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
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								

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.

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 Unit Operations. Engineering properties of food materials. Viscosity. Fluid classifications. Reynolds number. Flow patterns. Flow of Non-Newtonian fluids in pipe.</td><td>1</td><td>I</td></tr><tr><td>Fluid mixing. Blending. Mixing of Non-Newtonian fluids; Homogenization; Emulsification.</td><td>1</td><td>T, U</td></tr><tr><td>Filtration. Centrifugation. Sedimentation</td><td>2</td><td>T, U</td></tr><tr><td>Size reduction: Grinding, Slicing, Shredding, Smashing.</td><td>1</td><td>I, T, U</td></tr><tr><td>Sieving. Sorting; Particle Distribution; Solid mixing.</td><td>1</td><td>T, U</td></tr><tr><td>Mass Transfer. Diffusion Theory. Diffusion coefficient.</td><td>1</td><td>I, T</td></tr><tr><td>Mass transfer equations. Steady-state and transient mass transfer.</td><td>1</td><td>T, U</td></tr><tr><td>Membrane separation: Microfiltration. Ultrafiltration. Reverse Osmosis</td><td>2</td><td>T, U</td></tr><tr><td>Extraction-Leaching: principles and equipment.</td><td>2</td><td>T, U</td></tr><tr><td>Extrusion: theory and equipment</td><td>1</td><td>T, U</td></tr><tr><td>In-class presentation (current trends, new techniques in food engineering)</td><td>2</td><td>T, U</td></tr></table>	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
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																																			
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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						
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

Week	Topic	CLO	Assessments	Learning activities
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
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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 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	<i>This subject will provide practice on following:</i> - <i>Fluid rheology determination.</i> - <i>Particle size measurement</i> - <i>Mass transfer understanding</i>
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 ³² : 30 h
Credit points	1 (lab work) ~ 2 ECTS

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.

Required and recommended prerequisites for joining the module	Food Unit Operation 2 (parallel)		
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 insolving 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.

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	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.

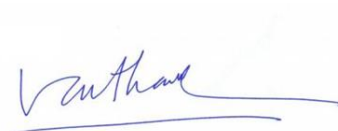
5. Date revised: April, 2024

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, 20/ 04/ 2024

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 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 ³³ : 90 h	
Credit points	3 (theory) ~ 4.6 ECTS	
Required and recommended prerequisites for joining the module	Biostatistics	
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 food quality assurance system. – Apply the principles of quality assurance system to control and assure the quality and safe of food products – Be aware the importance of 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 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:	
	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

33

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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Principles and concepts of Quality and Food Quality Food quality specifications and standards</td><td>2</td><td>I, T</td></tr><tr><td>Quality programs and Quality system for the food industry</td><td>1</td><td>I, T</td></tr><tr><td>Statistical tools and techniques for Food Quality Control and Food Process Control</td><td>3</td><td>T, U</td></tr><tr><td>Physico-chemical analysis of food</td><td>1</td><td>T, U</td></tr><tr><td>Food color and texture</td><td>1</td><td></td></tr><tr><td>HACCP systems</td><td>2</td><td>T, U</td></tr><tr><td>Prerequisite programs</td><td>1</td><td>T, U</td></tr><tr><td>TQM, Kaizen, Six-Sigma, ISO 9000 Standards</td><td>2</td><td>T, U</td></tr><tr><td>In-class presentation (Food laws, quality improvement, HACCP case study)</td><td>2</td><td>T, U</td></tr></table>	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
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. 3rd Ed. CTI Publications. • Hubbard, M. R. 2003. Statistical Quality Control for the Food Industry, 3rd 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

Week	Topic	CLO	Assessments	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	25
Mid-term exam	1	35
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. Date revised: April, 2024

6. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqtu@hcmiu.edu.vn

Ho Chi Minh City, 20/ 04/ 2024

Dean of School of Biotechnology



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	- (in English) Food Laws and Food Standards - (in Vietnamese) Luật thực phẩm và tiêu chuẩn thực phẩm
Course designation	<i>This subject will provide knowledge on following:</i> - <i>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.</i> - <i>Vietnam Food Law: Law No. 55/2010/QH12 on Food Safety.</i> - <i>International Food Laws and Regulations: International Food Regulation and International Food Regulatory Agencies. Food Laws and Regulations in some other countries.</i> - <i>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.</i>
Course type	☐ General knowledge ☒ Fundamental ☐ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
Semester(s) in which the module is taught	6, 7
Person responsible for the module	Dr. Nguyen, Minh Xuan Hong

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 ³⁴ : 60 h
Credit points	2 (theory) ~ 3.1 ECTS
Required and recommended prerequisites for joining the module	Introduction to Food Science and Technology
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 issue. - Interpret implications of local food laws and food standards on the manufacturer and sale of food.

³⁴ 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 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.	
	Skill	CLO2. Interpreting implications of food laws and regulation, recognize 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)		
	Topic	Weight	Level
	Introduction to Food Law and Food Standards	3	T
	Vietnam Food Law	3	T
	International Food Laws and Regulations	2	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 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
4-6	Vietnam Food Law	1, 2	Quiz, Midterm exam	Lecture, Discussion
7-8	International Food Laws and Regulations	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	

Note: %Pass (assignments): % students have scores greater than 65 out of 100.

%Pass (exam): % students have scores greater than 60 out of 100.

5. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 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.
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 hours Private study including examination preparation, specified in hours ³⁵ : 60 h
Credit points	2 (theory) ~ 3.1 ECTS

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 module	Food Microbiology		
Course objectives	The course is intended to demonstrate: - Microbiological concepts through laboratory procedures focusing on 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
	Microorganisms in foods	3	I, T, U
	Microbial factors in foods	2	T, U
	Testing methods of food microorganisms	3	T, U
	Basic principles in testing industrial microorganisms	1	T, U
Seminar	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: - Ray, B and Bhunia. A. (2013). Fundamental Food Microbiology (5th ed.). New York: CRC Press References: - Robert, D., & Greenwood, M. (2003). Practical Food Microbiology (3rd ed.) UK: Blackwell Publishing. - Shen. C & Zhang. Y. (2017). Food microbiology laboratory for the food science student: a practical approach.

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

Week	Topic	CLO	Assessments	Learning activities
1-3	Microorganisms in foods	1	Midterm exam	Lecture, discussion
4-5	Microbial factors in foods	1,2,3	Midterm exam	Lecture, discussion,
6-8	Testing methods of food microorganisms	1,2	Final exam	Lecture, discussion
9-10	Midterm			
11	Basic principles in testing industrial microorganisms	1,2	Final exam	Lecture, discussion
12	Seminar	1,2,3	Presentation	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

Seminar (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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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	- (in English) Practice in Food Microbiology Analysis - (in Vietnamese) Thực hành Phân tích vi sinh thực phẩm
Course designation	<i>This subject will provide knowledge on following:</i> - 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.
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	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	01 (practical) ~ 2 ECTS	
Required and recommended prerequisites for joining the module	Practice in Food Microbiology Food Microbiology Analysis (parallel)	
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 and 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 stuffs — 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:

	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	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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ³⁶ : 60 h
Credit points	2 (theory) ~ 3.1 ECTS
Required and recommended prerequisites for joining the module	Biostatistics

³⁶ 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) <table><tr><td>Topic</td><td>Weight</td><td>Level</td></tr><tr><td>Introduction and Overview</td><td>1</td><td>I</td></tr><tr><td>Physiological and Psychological Foundations of Sensory Function</td><td>1</td><td>T</td></tr><tr><td>Principles of Good Practice</td><td>1</td><td>T</td></tr><tr><td>Discrimination Testing</td><td>2</td><td>T</td></tr><tr><td>Descriptive Analysis</td><td>2</td><td>T</td></tr><tr><td>Consumer Research Methods. Sensory Evaluation in Quality Control</td><td>1</td><td>T</td></tr><tr><td>Data Relationships and Multivariate Applications</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 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
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.

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			

Week	Topic	CLO	Assessments	Learning activities
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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 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 ³⁷ : 30 h

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.

Credit points	1 (lab work) ~ 2 ECTS		
Required and recommended prerequisites for joining the module	Practice in Biostatistics Food sensory analysis (parallel)		
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.

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
Oral presentation (90%)	70%Pass	70%Pass	70%Pass

Note: %Pass: % students have scores greater than 80 out of 100.

5. **Date revised:** April, 20246. **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, 20/ 04/ 2024

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 ³⁸ : 60 h
Credit points	2 (theory) ~ 3.1 ECTS
Required and recommended prerequisites for joining the module	Food Sensory Analysis Food Laws and Standards

³⁸ 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)																											
	<table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction to food product development</td><td>1</td><td>T, U</td></tr><tr><td>Drivers of food product development</td><td>1</td><td>T, U</td></tr><tr><td>Idea generation and screening</td><td>1</td><td>T, U</td></tr><tr><td>Product design specification</td><td>1</td><td>T, U</td></tr><tr><td>Product design and process development</td><td>1</td><td>T, U</td></tr><tr><td>Product commercialization</td><td>1</td><td>T, U</td></tr><tr><td>Innovative food ingredients and food additives</td><td>1</td><td>T, U</td></tr><tr><td>Seminar</td><td>1</td><td>T, U</td></tr></table>	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
	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						
CLO	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
9-10	Midterm			
18-20	Reserve week and 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.*

7. Date revised: April, 2024

8. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Assoc. Prof. Lê Ngọc Liễu
- Email: lnlieu@hcmiu.edu.com

Ho Chi Minh City, 20/ 04/ 2024

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	- (in English) Practice in Food Product Development and Marketing - (in Vietnamese) 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	☐ 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. 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 Labwork time: 5 weeks (half day -5 periods per week) Market survey : 1 week Private study including examination preparation, specified in hours ³⁹ : 30 h

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.

Credit points	01 (practical) ~ 2 ECTS		
Required and recommended prerequisites for joining the course	Practice in Food Sensory Analysis Food product development and marketing (Parallel)		
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 CLO2. Demonstrate the understanding of specific needs of global, cultural, social, environmental and economic factors in new food product development	
	Skill	CLO3. Produce report and presentations of technical breadth and depth 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)		

	(Evaluated by IU instructors and industry partners)		
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

	PL O						
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	CL O	Assessments	Learning activities
1	Work in group: brainstorming ideas	1,2,3 ,4,5	Presentation	Lecture, labwork
2	Market survey	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

5	Cross-team to improve the other group's product in term of cost saving (Group 1 does cost savings of group 2's product and vice versa). (Evaluated by IU instructors and industry partners)	1,2,3,4,5	Presentation	Labwork
6	Product presentation (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	90
Total	100

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Lab behavior (10%)					80%Pass
Presentation (90%)	70%Pass	70%Pass	70%Pass	70%Pass	

Note: %Pass: Target that % of students having 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: MSc. Nguyen Thi Huong Giang
- Email: nthuonggiang@hcmiu.edu.vn

Ho Chi Minh City, 20/ 04/ 2024

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 ⁴⁰ : 90 h	
Credit points	3 (theory) ~ 4.6 ECTS	
Required and recommended prerequisites for joining the module	Biostatistics. In addition, students should attend relevant courses such as Business Communication, Critical Thinking before joining this course.	
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 a 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

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.

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, 20/ 04/ 2024

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 ⁴¹ : 90 h
Credit points	3 (theory)
Required and recommended prerequisites for joining the module	Introduction to Food Science and Technology, Food Chemistry and Biochemistry

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.

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: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Understand fundamental concepts and principles of postharvest technology</td></tr><tr><td>Skill</td><td>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.</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 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																
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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Introduction of post-harvest technologies</td><td>1</td><td>I</td></tr><tr><td>Postharvest physiology of plant materials</td><td>2</td><td>T</td></tr><tr><td>Postharvest handlings of plant materials</td><td>2</td><td>T</td></tr><tr><td>Preservation techniques for plant materials</td><td>3</td><td>T, U</td></tr><tr><td>General principles of postharvest changes in animal materials</td><td>2</td><td>T</td></tr><tr><td>Postharvest handlings of animal materials</td><td>2</td><td>T</td></tr><tr><td>Preservation of animal-derived raw materials</td><td>3</td><td>T, U</td></tr></table>			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
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.

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							1
4					3		

3.Planned learning activities and teaching methods

Week	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	Lecture,

Week	Topic	CLO	Assessments	Learning activities
			exam	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			
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
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 65 out of 100.

%Pass (exam): % students have scores greater than 60 out of 100.

5. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



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 ⁴² : 60 h									
Credit points	2 (theory) ~ 3.1 ECTS									
Required and recommended prerequisites for joining the module	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: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>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</td></tr><tr><td>Skill</td><td>CLO3. Provide reports with technical breadth and depth.</td></tr><tr><td>Attitude</td><td>CLO4. Self-acquire knowledge and skills in food plant design</td></tr></table>		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
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									

 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.

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:

	PLO						
CLO	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 lay out 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			
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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

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	☐ 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	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 ⁴³ : 60 h	
Credit points	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the module	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

 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.

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	Wei ght	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	2	T, U	

	- Shelf-life assessment - Date marking - Food traceability and authenticity		
	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

Weeks	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

Weeks	Topic	CLO	Assessments	Learning activities
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. **Date revised:** April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



**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)	<i>(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 Private study including examination preparation, specified in hours: 90</i>
Credit points	3
Required and recommended prerequisites	Genetics

for joining the course			
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.

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
CLO1						x		
CLO2				x				
CLO3		x						
CLO4							x	
CLO5								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. Date revised: August, 2022

Ho Chi Minh City, 20/ 04/ 2024

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	- <i>(in English)</i> PHYSICAL CHEMISTRY - <i>(in Vietnamese)</i> Hóa lý
Course designation	<i>On campus course</i>
Semester(s) in which the course is taught	3
Person responsible for the course	<i>Assoc. Prof. Nguyen Tan Khoi</i>
Language	English
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>lecture, lesson.</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: Contact hours: lecture: 45 credit hours; self-study: 90 hours Private study including examination preparation, specified in hours:</i>
Credit points	3 (4.6 ECTS equivalent)
Required and recommended prerequisites for joining the course	Prerequisites: General chemistry Recommended previous courses: Organic Chemistry 1, Biochemistry 1, Analytical Chemistry.

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 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	<i>Written exams (Midterm+Final)</i>
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							
CL O	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				

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. **Date revised:** April, 2024

6. **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, dhlhinh@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	<table border="1"> <thead> <tr> <th></th><th></th><th>Lecture</th><th>Lab</th><th>Project</th><th>Internship</th><th>Thesis</th></tr> </thead> <tbody> <tr> <td></td><td><i>Credit</i></td><td>3</td><td></td><td></td><td></td><td></td></tr> <tr> <td>Contact hours</td><td>37.5</td><td>37.5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>Self-Study hours</td><td>90</td><td>90</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>Total workload</td><td>127.5</td><td>127.5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </tbody> </table>									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
		Lecture	Lab	Project	Internship	Thesis																																				
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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 1</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: <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. When given a complex mass transfer problem, able to identify, formulate and solve</td></tr> </tbody> </table>							Competency level	Course learning outcome (CLO)	Knowledge	CLO1. When given a complex mass transfer problem, able to identify, formulate and solve																															
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) <table><tr><th>No.</th><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>1</td><td>Introduction</td><td>1</td><td>I,T,U</td></tr><tr><td>2</td><td>Diffusion (Fick’s 1st and 2nd law)</td><td>5</td><td>T,U</td></tr><tr><td>3</td><td>Adsorption and its applications</td><td>1</td><td>T,U</td></tr><tr><td>4</td><td>Absorption and its applications</td><td>4</td><td>T,U</td></tr><tr><td>5</td><td>Distillation, extraction process, phase diagram</td><td>4</td><td>T,U</td></tr></table>		No.	Topic	Weight	Level	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
No.	Topic	Weight	Level																							
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	CLO	Assessments	Learning activities	Resources
1.	1	Introduction to Operations Research: definition, classification. Basic concepts of phase equilibrium, phase contents, types of concentration and conversion equations.	1	Quiz 1	Lecture, Discussion, Inclass-Quiz	[1],[2],[3]
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	1	Quiz 2-6	Lecture, Inclass-Quiz	[1],[2],[3]

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
		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				
3.	7-8	Fundamentals of adsorption process Adsorption isotherm model: Langmuir, Freundlich, BET, Dubinin-Radushkevich, Tempkin and Pyzhev, Harkins-Jura, Halsey, Henderson.	2	Quiz 7-8	Lecture, Inclass-Quiz	[1],[2],[3]

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
		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 (T_{xy}, P_{xy}, 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	3,4	Presentation, Group problems 2	Lecture, Group work, Presentation, assignment, design problems	[1],[2],[3]

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
		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. 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. Revision Date: May 20, 2023

7. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer:
- Email:

Ho Chi Minh City, .../.../2024

HEAD/DEAN OF DEPARTMENT/SCHOOL

(Signature)



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

COURSE SYLLABUS

Course Name: DAIRY PRODUCT TECHNOLOGY

Course Code: **BTFT441IU**

1. General information

Course name	- (in English) Dairy Product Technology - (in Vietnamese) Công nghệ chế biến sữa và các sản phẩm sữa
Course designation	<i>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.</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	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 ⁴⁴ : 60 h	
Credit points	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the module	Food Unit Operation 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:	
	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

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.

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
	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		

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, dicussion
2	Milk components	1,2	Quiz & exam	Lecture, dicussion
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, dicussion
6-8	Dairy products: - Fermented products - Cream and butter - Cheese and condensed milk	1,2	Quiz & exam	Lecture, dicussion
9-10	Midterm			
11	Microbiology of milk Dairy plant sanitation HACCP	1,2	Quiz & exam	Lecture, dicussion
12	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 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. 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, 20/ 04/ 2024

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	☐ 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. 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, 15 hrs for field trip Private study including examination preparation, specified in hours ¹ : 30 h

Credit points	1 (lab work) ~ 2 ECTS																	
Required and recommended prerequisites for joining the course	Practice in Food Unit Operations 1 Dairy Product Technology (Parallel)																	
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><td>Competency level</td><td colspan="2">Course learning outcome (CLO)</td></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><td>Topic</td><td>Weight</td><td>Level</td></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, Edingburgh. 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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



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	- (in English) Beverage Product Technology - (in Vietnamese) Công nghệ đồ uống
Course designation	<i>This subject will provide knowledge on following:</i> - 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	☐ 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	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 ⁴⁵ : 60 h

⁴⁵ 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.

Credit points	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the module	Food Unit Operation 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 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. (4nd Eds). Academic Press. ●Philip R. Ashurst. (2016). Chemistry and Technology of Soft Drinks and Fruit Juices. (3rd Eds). John Wiley & Sons, Ltd. • Lectures and other documents will be on Blackboard of the International University																														

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 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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 ⁴⁶ : 30 h
Credit points	01 (practical) ~ 2 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.

Required and recommended prerequisites for joining the module	Practice in Food Unit Operations 1 Beverage Technology (Parallel)																				
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 fieldtrips. 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	Textbooks: • 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. References: • 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) <i>Wine and Must Analysis Standard</i> [Laboratory manual]. Retrieved from http://webdoc.agsci.colostate.edu/aes/wcrc/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

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. **Date revised:** April, 2024

6. **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, 20/ 04/ 2024

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	- (in English) Cereal Product Technology - (in Vietnamese) Công nghệ chế biến lương thực
Course designation	<i>This subject will provide knowledge on following:</i> - 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	☐ General knowledge ☐ Fundamental ☒ Specialized knowledge ☐ Internship/Project/Thesis ☐ Others:
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 ⁴⁷ : 60 h	
Credit points	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the course	Food Unit Operation 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

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.

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] Hoseney, R. Carl. 2010. Principles of Cereal Science and Technology. 3 rd Edition, American Association of Cereal Chemists. [2] <i>Gopal Kumar Sharma, Anil Dutt Semwal, Dev Kumar Yadav (2021). Advances In Cereals Processing Technologies. 1st edition, New India Publishing Agency- Nipa</i>		

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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

Dean of School of Biotechnology



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	<i>This subject will provide knowledge on following:</i> - <i>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.</i> - <i>Quality control and assurance in food processing.</i>
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 hours¹: 30
Credit points	1 (lab work) ~ 2 ECTS

Required and recommended prerequisites for joining the course	Practice in Food Unit Operations 1 Cereal Product Technology (Parallel)		
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)		
	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	Textbook: - Edwards, W. P. (2015). <i>The Science of Bakery Products</i>. Royal Society of Chemistry. References 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) <i>Starch Dictionary</i>. Agro by nature 3. Wadsworth, P. K., & Larsen, N. G. (1986). <i>Falling number interlaboratory study, December 1985</i>. Wheat Research Institute, Dept. of Scientific and Industrial Research.

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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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	- (in English) Vegetable Oil and Essential Oil Technology - (in Vietnamese) 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	☐ 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. 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 ⁴⁸ : 6 h
Credit points	02 (theory) ~ 3.1 ECTS
Required and recommended prerequisites for joining the module	Food Unit Operations 1
Course objectives	<i>By completing this course, the students should be able to:</i> - <i>Understand composition, chemical, physical properties of oil-bearing and essential oil-bearing materials; their production and trade;</i> - <i>Understand chemistry vegetable oils and essential oils; their production and consumption;</i> - <i>Understand the influences of processing conditions on properties of fat and oils</i> - <i>Explain unit operations and steps involved in production of vegetable oils and essential oils.</i> - <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>

⁴⁸ 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 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) <table><tr><td>Topics</td><td>Weight</td><td>Level</td></tr><tr><td>Introduction; Course Outline Chemistry of Lipids Vegetable oil production and chemistry Oil quality and Nutritional facts</td><td>1</td><td>I, T</td></tr><tr><td>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</td><td>1</td><td>T, U</td></tr><tr><td>Vegetable oil processing. Methods for oil extraction and refining. Vegetable oil refining.</td><td>2</td><td>T, U</td></tr><tr><td>Soybean, Palm, Rapeseed oils Specialty oils production: sesame, rice-bran, cashew nut,</td><td>2</td><td>T, U</td></tr><tr><td>Oil, fat modifications; Oil food products</td><td>1</td><td>T, U</td></tr><tr><td>Chemistry of terpenes; Flavors. Essential oil chemistry</td><td>1</td><td>T, U</td></tr><tr><td>Essential oil production, utilization and trade</td><td>1</td><td>T, U</td></tr><tr><td><i>Seminar: Essential oil extraction processes and equipment</i></td><td><i>1</i></td><td><i>U</i></td></tr></table>			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>
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.; 2nd 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:

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; 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

Week	Topic	CLO	Assessments	Learning activities
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. Date revised: April, 2024

6. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqtu@hcmiu.edu.vn

Ho Chi Minh City, 20/ 04/ 2024

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	- (in English) Practice in Vegetable Oil and Essential Oil Technology - (in Vietnamese) 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	☐ 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. 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	01 (lab work) ~ 2 ECTS

Required and recommended prerequisites for joining the module	Practice in Food Unit Operations 1 Vegetable Oil and Essential Oil Technology (Parallel)		
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	Weig ht	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
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. Date revised: April, 2024

6. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer: Dr. Dang Quoc Tuan
- Email: dqtu@hcmiu.edu.vn

Ho Chi Minh City, 20/ 04/ 2024

Dean of School of Biotechnology



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	☐ <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	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 ⁴⁹ : 60 h	
Credit points	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the module	Food Unit Operation 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

 49

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) <table><tr><th>Topic</th><th>Weight</th><th>Level</th></tr><tr><td>Meat production and consumption Composition and structure of meat</td><td>1</td><td>I, T, U</td></tr><tr><td>The slaughter of animals Post-mortem changes</td><td>1</td><td>T, U</td></tr><tr><td>Meat process</td><td>3</td><td>T, U</td></tr><tr><td>Meat products</td><td>3</td><td>T, U</td></tr><tr><td>Meat microbiology HACCP in meat processing</td><td>1</td><td>T, U</td></tr><tr><td>Seminar</td><td>1</td><td>T, U</td></tr></table>	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
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.																					

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. 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, 20/ 04/ 2024

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	- (in English) Practice in Meat Product Technology - (in Vietnamese) 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	01 (practical) ~ 2 ECTS			
Required and recommended prerequisites for joining the course	Practice in Food Unit Operations 1 Meat product technology (parallel)			
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:			
	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)			
		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. References: 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.

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
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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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 Cacao - <i>(in Vietnamese)</i>
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 ⁵⁰ : 60 h

⁵⁰

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	2 (theory) ~ 3.1 ECTS	
Required and recommended prerequisites for joining the module	Food Unit Operation 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:	
	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																															
	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																																
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

Week	Topic	CLO	Assessments	Learning activities
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. Date revised: April, 2024

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, 20/ 04/ 2024

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 Cacao - <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	01 (practical) ~ 2 ECTS

Required and recommended prerequisites for joining the course	Practice in Food Unit Operations 1 Technology of coffee, tea and cocoa (Parallel)		
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:		
	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)		
	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	
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. Francl, 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, 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.

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. Date revised: April, 2024

6. 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, 20/ 04/ 2024

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	☐ 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	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 ⁵¹ : 60 h

⁵¹ 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	2 (theory) ~ 3.1 ECTS									
Required and recommended prerequisites for joining the module	Food Unit Operation 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 – Proteins, starch, pectin, gum – Others	1,2	Quiz & exam	Lecture, discussion
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. 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, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

COURSE SYLLABUS

**Course Name: PRACTICE IN CONFECTIONERY PRODUCT
TECHNOLOGY**

Course Code: BTFT457IU

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 ⁵² : 30 h	
Credit points	1 (lab-work) ~ 2 ECTS	
Required and recommended prerequisites for joining the module	Practice in Food Unit Operation 1 Confectionery Product Technology (Parallel)	
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:	
	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

⁵²

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: practical session (5 hours)		
	Teaching levels: I (Introduce); T (teach); U (Utilize)		
	Topic	Weight (theory)	Level
	Physicochemical properties of sugars, natural and artificial sweeteners Different stage of sugar cookery	1	I, T, U
	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

Week	Topic	CLO	Assessments	Learning activities
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. **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, 20/ 04/ 2024

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	☒ Compulsory

	☐ Fundamental ☐ Specialization ☐ Project/Internship/Thesis	☐ Elective																																			
Teaching methods	☒ Lecture ☐ Lesson ☐ Project ☐ Seminar Others, please specify:																																				
Workload	<table border="1"> <tr> <td></td><td></td><td>Lecture</td><td>Lab</td><td>Project</td><td>Internship</td><td>Thesis</td></tr> <tr> <td></td><td><i>Credit</i></td><td>2</td><td>1</td><td></td><td></td><td></td></tr> <tr> <td>Contact hours</td><td>50</td><td>25</td><td>25</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>Self-Study hours</td><td>90</td><td>60</td><td>30</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>Total workload</td><td>140</td><td>85</td><td>55</td><td>0</td><td>0</td><td>0</td></tr> </table>				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
		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 border="1"> <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> </table>		Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Understand drawing instruments to sketch by hand, and construct geometry on engineering drawings																															
Competency level	Course learning outcome (CLO)																																				
Knowledge	CLO1. Understand drawing instruments to sketch by hand, and construct geometry on engineering drawings																																				

	<table><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>	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																																								
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																																												
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><tr><td>8</td><td>Practice layer and printing management</td><td>1</td><td>T, U</td></tr><tr><td>9</td><td>Introduction to environmental drawings Conceptual drawings of a water treatment plant, air treatment plant, and solid waste treatment plant.</td><td>2</td><td>I, U</td></tr><tr><td>10</td><td>Practice an environmental drawings</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	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
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	<table><tr><td>☐ Multiple-choice questions</td><td>☐ Oral examination</td></tr><tr><td>☐ Report</td><td>☐ Written examination</td></tr></table>	☐ Multiple-choice questions	☐ Oral examination	☐ Report	☐ Written examination																																								
☐ Multiple-choice questions	☐ Oral examination																																												
☐ Report	☐ Written examination																																												

	☐ Presentation ☐ Assignments ☒ Others, please specify: 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	3,4	Attendance Q&A	Reading materials before class;	[4] 1 [5] 1

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
		Practice drawing commands		Homework 4	Doing the lecture; Discussion;	
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	Reading materials before class;	[3] 1 [4] 4 [5] 4

No.	Week	Topic	CLO	Assessments	Learning activities	Resources
				In-class practice	Doing the lecture; Discussion; and doing Quiz in class	
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
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
Home works (25% of PA)				HW1-8, Submitted 80%Pass
Midterm exam (Mid, 30%)	Q1-2, 60%Pass	Q3-4 60%Pass		

Assessment Type	CLO1	CLO2	CLO3	CLO4
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.
Attitude	
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. Date revised: April, 2024

6. Course coordinator/Lecturer

- School/Department:
- Lecturer:
- Email:

Ho Chi Minh City, .../.../2024

HEAD/DEAN OF DEPARTMENT/SCHOOL



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

COURSE SYLLABUS

Course Name: INTERNSHIP 1

Course Code: **BTFT419IU**

1.General information

Course name	- <i>(in English)</i> Internship 1 - <i>(in Vietnamese)</i> Thực tập ngành nghề 1
Course designation	- To whom working at manufacturing factories: Observing and understanding the technological process of main product(s) in the factories. Understanding the structure and operating manufacturing machines and equipment, and product QA and QC activities. - To whom working at research institutes: Learning how to do research: doing research. Understanding research methods. Understanding analytical equipment and techniques. Operating research equipment and apparatus. Learning how to write a scientific paper. - To whom 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.
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: 180 h Practice hours: at least 90 h Private study including report writing, specified in hours ⁵³ : 90 h									
Credit points	3 (practical) ~ 6.5 ECTS									
Required and recommended prerequisites for joining the module	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: <table><tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr><tr><td>Knowledge</td><td>CLO1. Acquire new knowledge from the work at the internship unit</td></tr><tr><td>Skill</td><td>CLO2. Establish and meet objectives CLO3. Communicate well during internship and defence</td></tr><tr><td>Attitude</td><td>CLO4. Respect advisors and others in the internship</td></tr></table>		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 defence	Attitude	CLO4. Respect advisors and others in the internship
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 defence									
Attitude	CLO4. Respect advisors and others in the internship									

⁵³ 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 outline	- Student has to work at manufacturing factories, research institutes or food service providing organizations for a period of 2 months with at least 90 hours. - Student has to identify the internship opportunities by him/herself or with assistance from the Academic Advisor. - Student has to fill a Form for Internship Proposal (Form BT18-FT) before starting their internship. - Student has to fill the Form for Internship Registration before going to the field (Form BT20-FT) before starting their internship. - Student has to Fill the Form of Internship Conformation (Form BT19-FT) after completion of the internship period with signature of the On-site Supervisor and submit it to the School of BT. - Student has to write and submit the Internship Report, following the Report requirements. In general, the report should be at least 10 pages in lengths, and be submitted latest 4 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 Adviser 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		

3.Assessment plan

Course assessment policy

Methods	Frequency	(%)
Report (IU advisor)	1	35
Presentation (Committee)	1	30
Evaluation from site supervisor	1	35

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4

Report (IU advisor) (35%)	70%Pass			
Presentation (Committee) (30%)			70%Pass	
Evaluation from site supervisor (35%)		70%Pass		70%Pass

Note: %Pass: % students have scores greater than 80 out of 100.

4. Date revised: April, 2024

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
- Lecturer:
- Email:

Ho Chi Minh City, 20/ 04/ 2024

Dean of School of Biotechnology



Nguyễn Văn Thuận



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

COURSE SYLLABUS

Course Name: INTERNSHIP 2

Course Code: **BTFT469IU**

1. General information

Course name	- <i>(in English)</i> Internship 2 - <i>(in Vietnamese)</i> Thực tập ngành nghề 2
Course designation	- To whom working at manufacturing factories: Understanding the structure and operating manufacturing machines and equipment, and product QA and QC activities. Find possible solutions for the technical issues in the factories. - To whom working at research institutes: Learning how to do research: doing research. Understanding research methods. Understanding analytical equipment and techniques. Identifying research issues and doing research to tackle them. Learning how to write a scientific paper. - To whom working at food service establishments: Observing and understanding procedures, regulations, and structures of organizations providing food services (food training, certification, food quality and safety). 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: 180 h Practice hours: 90 h Private study including report writing, specified in hours ⁵⁴ : 90 h

⁵⁴ 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	3 (practical) ~ 6.5 ECTS								
Required and recommended prerequisites for joining the module	Accumulated at least 90 Credits								
Course objectives	It is an opportunity for students to: - Have a deeper and wider view of current research trends in Food Technology, Food Sciences, and Nutritional Sciences in the food industry. - Get equipped with practical skills in experimental design, experiment performance and presentation. - Identify current and potential technical issues in the organization. - Apply classroom knowledge and research experience to tackle practical issues occurring in the organization. - Develop skills in scientific writing for literature review, research proposal and research report.								
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. Solve engineering problems at the internship units</td></tr> <tr> <td>Skill</td><td>CLO2. Communicate well during internship and defence</td></tr> <tr> <td>Attitude</td><td>CLO3. Follow the ethical and professional responsibilities</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Solve engineering problems at the internship units	Skill	CLO2. Communicate well during internship and defence	Attitude	CLO3. Follow the ethical and professional responsibilities
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1. Solve engineering problems at the internship units								
Skill	CLO2. Communicate well during internship and defence								
Attitude	CLO3. Follow the ethical and professional responsibilities								
Course outline	- Student has to work at manufacturing factories, research institutes or food service providing organizations for a period of 2 months with at least 90 hours. - Student has to identify the internship opportunities by him/herself or with assistance from the Academic Advisor. - Student has to fill a Form for Internship Proposal (Form FT22) by latest June 13th (if the internship is to be taken in the summer semester). - Student has to fill the Form for Internship Registration before going to the field (Form FT23). - Student has to Fill the Form of Internship Conformation (Form FT24) after completion of the internship period with signature of the On-site Supervisor and submit it to the School of BT. - Student has to write and submit the Internship Report, following the Report requirements. In general, the report should be at least 10 pages in lengths, and be submitted latest 4 weeks after student return from the site								
Examination forms	Written report and oral defence								

Study and examination requirements	Student to send a report to and get advice from his/her Academic Adviser on a weekly basis.
Reading list	Documents: supplied by the hosting company

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			3				
3				4			

3. Assessment plan

Course assessment policy

Methods	Frequency	(%)
Report (IU advisor)	1	35
Presentation (Committee)	1	30
Evaluation from site supervisor	1	35

Course assessment plan

Assessment Type	CLO1	CLO2	CLO3
Report (IU advisor) (35%)	70%Pass	70%Pass	70%Pass
Presentation (Committee) (30%)	70%Pass	70%Pass	70%Pass
Evaluation from site supervisor (35%)	70%Pass	70%Pass	70%Pass

Note: %Pass: % students have scores greater than 80 out of 100.

4. Date revised: April, 2024

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
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Ho Chi Minh City, 20/ 04/ 2024

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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> Luận văn 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 ⁵⁵ : at least 2 hours/day	
Credit points	12 (practical) ~ 26.2 ECTS	
Required and recommended prerequisites for joining the module	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

⁵⁵ 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 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) (35%)	80%Pass	80%Pass	80%Pass	80%Pass	80%Pass

Presentation (Committee) (30%)	80%Pass		80%Pass	80%Pass	
Reviewer (35%)				80%Pass	80%Pass

Note: %Pass: % students have scores greater than 80 out of 100.

4. Date revised: April, 2024

5. Course coordinator/Lecturer

- School/Department: School of Biotechnology, Department of Food Technology
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Ho Chi Minh City, 20/ 04/ 2024

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Nguyễn Văn Thuận

Phụ lục 3:

**BẢNG MÔ TẢ SỐ TÍN CHỈ THỰC TẬP CỦA CTĐT ĐƯỢC THỂ HIỆN
CỤ THỂ THEO MÔN HỌC ĐỂ ĐẢM BẢO 8TC THỰC TẬP THEO QUY
ĐỊNH TẠI THÔNG TƯ 17/2021/TT-BGDĐT**

*(Kèm theo Quyết định số 760 /QĐ-ĐHQT ngày 09 tháng 7 năm 2024
Của Hiệu trưởng Trường Đại học Quốc tế)*

Theo Thông tư số 17 về chương trình đào tạo kỹ sư, CTĐT ngành CNTP đã thỏa yêu cầu 150 tín chỉ bao gồm 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:

- 03 buổi thực hành – 15 tiết được thực hiện trong PTN của Bộ môn (tương đương 0.5 tín chỉ);

- 03 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.

STT	Môn học	Số tín chỉ	Ghi chú
1	Internship 1	03	Bắt buộc
2	Internship 2	03	Bắt buộc
3	Practice in Food Product Development and Marketing	0.5	Bắt buộc
4	Practice in Dairy Product Technology	0.5	Chọn 4/ 7 môn học tự chọn
5	Practice in Beverage Technology	0.5	
6	Practice in Cereal Product Technology	0.5	
7	Practice in Meat Product Technology	0.5	
8	Practice in Technology of Coffee, Tea and Cacao	0.5	
9	Practice in Vegetable oil and essential oil technology	0.5	
10	Practice in Confectionery Product Technology	0.5	
Tổng cộng		8.5	