Course Description Form

1. Co	urse Name: Analytical chemistry				
2. Co	urse Code: FHN23016				
3. Sei	mester / Year:second				
4. De	scription Preparation Date: ۲۰/4/۲۰۲۶				
5. Av	railable Attendance Forms: class				
6. Nu	mber of Credit Hours (Total) / Number of Units (Total):150/6				
7. Co	ourse administrator's name (mention all, if more than one name)				
	Name: Rana khadim Ridha				
En	nail:				
	urse Objectives				
	e student learns about the				
_	ortance of analytical mistry and its types.				
	e student learns the methods				
	inding concentrations of				
	micals and the types of				
che	chemical titration.				
- The	- The student learns the basic				
_	principles of quantitative and				
_	qualitative analysis methods in				
ana	lytical chemistry.				
9. Tea	aching and Learning Strategies				
Strategy	1- Lectures				
	2- Discussion				
	3- Brainstorming Problem solving				
	4- Practical presentations& Simulation Method				
	5- Lab works(Practical in computer Lab				

- 6- Projects Self-learning
- 7- Cooperative Learning.

10. 0	10. Course Structure					
Week	Hours	Required	Unit or subject	Learning method	Evaluation method	
		Learning	name			
		Outcomes				
1	2	Analytical chemistry classificati steps chemical analysis.		Theoretical- practical	Test	
2	2	Methods expression concentrat Examples solution of concentrat		Theoretical- practical	Test	
3		titrations simple system, a base,		Theoretical- practical	Test	
4	2	Volumetric analysis, Clarificatio of the gen principles volumetric analysis.		Theoretical- practical	Test	
5	2	neutralizat titrations simple system, a base,		Theoretical- practical	Test	
6	2	Report ab subjects week 1, 2 and 5.		Theoretical- practical	Test	
7	2	Precipitation titration	_	Theoretical- practical	Test	
8	2	Precipitation		Theoretical- practical	Test	
9	2	Complex-io Formation titration. Oxidation- reduction		Theoretical- practical	test	

		titrations		
10	2	Oxidation- reduction titrations .	Theoretical- practical	Discussion
11	2	Precipitations titration	Theoretical- practical	Discussion
12	2	Introductio to We Quantitativ Analysis v Explanatio of Method Weight Analysis. Detailed explanatio the we analysis	Theoretical- practical	Discussion
13	2	Step We Factor, General Ri Finding Weight Fac	Theoretical- practical	Discussion
14	2	Seminar	Theoretical- practical	Discussion
15	2	Analytical chemistry classificati steps chemical analysis.	Theoretical- practical	Discussion

30therotical test 10 practical test 10 report $_{\it 9}$ 35 therotical final test 15 practical final test

12.	Learning	and Tea	aching F	Resources
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Required textbooks (curricular books any)	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry
Main references (sources)	Modern Analytical Chemistry.
Recommended books and references (scientific journals, reports)	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry

Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical chemistry

Course Description Form				
1-Course Name: Biosafety and	l security			
2-Course Code: FHN12010				
3-Semester / Year:second				
4-Description Preparation Dat	te:٣٠ / 4 /٢٠٢٤			
5-Available Attendance Forms:	class			
6-Number of Credit Hours (Total	al) / Number of Units (Total):125/5			
7-Course administrator's nam	ne (mention all, if more than one name)			
Name: Asst.Prof. Dr. Ali R. Mulakhu Email:	dair			
8-Course Objectives				
 Demonstrate an understanding of the structural similarities and differences among microbes and the unique structure/function relationships of prokaryotic cells. Comprehend the fundamentals of dairy microbiology. Appreciate the diversity of dairy microorganisms and microbial communities in milk and milk products and recognize how microorganisms solve the fundamental problems their environments present. 4. Recognize how the underlying principles of epidemiology of disease and pathogenicity of in milk and milk products 	• •			

9-Teaching and Learning Strategies

Strategy

Type something like: The main strategy that will be adopted in delivering this more dule encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities are interesting to the students.

Week	Hours	Required	Unit or subject	Learning method	Evaluation meth	od
		Learning	name			
		Outcomes				
1	2	Introduction biosafety security		Theoretical-practica	Test	
2	2	Biosafety barriers in la		Theoretical-practica	Test	
3		Biosafety lev		Theoretical-practica	Test	
4	2	Biological agents		Theoretical-practica	Test	
5	2	Biorisk biohazard		Theoretical-practica	Test	
6	2	Containment level		Theoretical-practica	Test	
7	2	Mid-term Ex		Theoretical-practica	Test	
8	2	Biorisk management system		Theoretical-practica	Test	
9	2	Types biohazardous wastes		Theoretical-practica	Test	
10	2	Disinfection decontamina		Theoretical-practica	discuss	on

				i		
11 2	Accident response	Theoretical-practica	discuss	on		
12 2	Hazardous chemicals	Theoretical-practica	discuss	on		
13 2	Overview biological sa equipment	Theoretical-practica	discuss	on		
14 2	Overview security equipment	Theoretical-practica	discuss	on		
15 2	Biosecurity	Theoretical-practica	discuss	on		
	se Evaluation I test 10 practical	test 10 report و 35 therotical final test 15	practical fina	l te		
12-Learr	ning and Teaching I	Resources				
Required textbooks (curricular books any) Riedel S, & Hobden J.A., & Miller S, & Morse S.A. Mitchell T.G., & Sakanari J.A., & Hotez P, & Mejia Microbiology,			ia R(Eds.), (2019). 28e. N	awe cGr		
Main reference	es (sources)	https://accesspharmacy.mhmedical.com/content.asp WILLEY, J. M., SHERWOOD, L. M., WOOLVI (2012). Prescott's principles of microbiology. New Y	ERTON, C. J., & York, McGraw-Hill	RE		
Recommended references reports)	d books and (scientific journals,	Riedel S, & Hobden J.A., & Miller S, & Morse S Mitchell T.G., & Sakanari J.A., & Hotez P, & Mej Adelberg's Medical Microbiology, https://accesspharmacy.mhmedical.com/content.asp	ia R(Eds.), (2019). 28e. N	awe cGr		
Electronic References, Websites https://en.wikipedia.org/wiki/Analytical chemistry						
	Cou	rse Description Form				
1-Course	e Name: English La	nguage		l		
2-Course	e Code: UoB12345			l		
3-Semes	ter / Year:second					
4-Descri	ption Preparation	Date: * · /4/ * · * £				
5-Availal	ble Attendance Form	ns: class				
6-Numba	er of Credit Hours (Total) / Number of Units (Total):150/6		1		
0-1 valide	of Cicuit Hours (Total) / Intilition of Office (Total).130/0		i		

7-Course administrator's name (mention all, if more than one name)

Name: Mustafa Abdulkareem Mukheef

Email:

8-Course Objectives

- To assist the learner to develop the language, literacy and numeracy skills related to English as a Foreign Language through the medium of the module themes and content.
- To enable the learner to communicate effectively and appropriately in real life situation.
- To facilitate the learner to read, interpret and comprehend a variety of materials using a range of media.
- To develop interest in and appreciation of English language and grammar.
- To develop and integrate the use of the four language skills i.e.
 Reading, Listening, Speaking and Writing.
- To revise and reinforce structure already learnt..

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9-Teaching and Learning Strategies

Strategy

- Focus on academic language, literacy and vocabulary.
- Link background knowledge and culture to learning.
- Increase comprehensible input and language output.
- Promote classroom interaction..Stimulate higher-order thinking skills and use of learning strategies.

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	Greetings and Farewells.		Theoretical- practical	Test
2	2	Your Wo Countries Nationalities.		Theoretical- practical	Test
3		All about you/ Jo Personal Informat and So Expressions.		Theoretical- practical	Test
4	2	Family and Frier Adjective+ Nouns		Theoretical- practical	Test
5	2	The Way I li Languages : Nationalities/ Numbers and Price		Theoretical- practical	Test
6	2	Every day/ 7 Present Time/ D of the Week.		Theoretical- practical	Test
7	2	My Faviourites/ Fo / Drinks/ Spo Pronouns		Theoretical- practical	Test
8	2	Where I live/ Rocand Furnity Directions Prepositions.		Theoretical- practical	Test
9	2	Times past/ I tense/ Saying Yea Irregular Verbs		Theoretical- practical	test
10	2	We had a great tin Questions Negatives.		Theoretical- practical	Discussion
11	2	I can do that/ Requests and Offers/ Adverbs.		Theoretical- practical	Discussion
12	2	Please and thank y Some and any/ L and I would like.		Theoretical- practical	Discussion
13	2	Weather Forecast.		Theoretical- practical	Discussion

14	2	Here and no Present continu and Present simple	Theoretical- practical	Discussion
15	2	It's time to go/ Fut plans/ Revision.	Theoretical- practical	Discussion

30therotical test 10 practical test 10 report ${}_{\text{\tiny 9}}$ 35 therotical final test 15 practical final test

12-Learning and Teaching R	12-Learning and Teaching Resources			
Required textbooks (curricular books	John and Liz Soarse, New Headway Plus: Beginner. Oxford: Oxford University Press, 2014.			
any)				
Main references (sources)	John and Liz Soarse, New Headway Plus: Intermediate. Oxford: Oxford University Press, 2010.			
Recommended books and				
references (scientific journals,				
reports)				
Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical chemistry			

Course Description Form

7-Course administrator's name (mention all, if more than one name)

Name: Ahmed Abdulla Auda

Email:

8-Course Objectives

- Be able to apply problem-solving and logical skills
- Have a deeper understanding of mathematical theory.
- Have a solid knowledge of elementary statistics
- Mathematics provides an effective way of building mental discipline and encourages logical reasoning
- organize, represent, analyse, interpret data and make conclusions and predictions from its results

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9-Teaching and Learning Strategies

Strategy

This module provides a comprehensive introduction to fundamental concepts in mathematic and calculus. It covers topics such as functions, inequalities, limits, derivatives, and integrals. The module aims to develop students' mathematical skills and problem-solving abilities in various fields of study. Emphasis is placed on understanding the theoretical concepts and applying them to real-world scenarios. The module also includes regular quizzes, mid-term exams, and a final exam to assess students' progress and understanding of the material.

Week	Hours	Required Learning	Unit or	Learning method	Evaluation method
		Outcomes	subject		
			name		
1	2	Introduction to Functions		Theoretical-practi	Test
2	2	Inequalities		Theoretical-practi	Test

		1	The continual	Test
3			Theoretical-practi	1 est
		Limits		
		Emints		
4			Theoretical-practi	Test
	2	Derivatives (Part 1)		
			Theoretical-practi	Test
5	2	Derivatives (Part 2)		
		Applications of	Theoretical-practi	Test
6	2	Derivatives		
	_		Theoretical-practi	Test
7	2	Mid-Term Exam	1	
'			Theoretical-practi	Test
0	2	Indefinite Integrals	Theoretical Place	1000
8			Theoretical-practi	Test
	2	Practice problems and exercises	Theoretical-practi	1031
9	2	CACICISCS	The constinut process	Discussion
4.0		Definite Integrals (Pa	Theoretical-practi	Discussion
10	2	1)		
			Theoretical-practi	Discussion
11	2	Definite Integrals (Part 2)		
		Applications of	Theoretical-practi	Discussion
12	2	Integration		
		Differential Facetion	Theoretical-practi	Discussion
13	2	Differential Equation		
			Theoretical-practi	Discussion
14	2	Multivariable Calcult (Optional)		
		(Орионат)		
		Preparatory week	Theoretical-practi	Discussion
15	2	before the final Exa		

30therotical test 10 practical test 10 report $_{\mbox{\scriptsize J}}$ 35 theoretical final test 15 practical final test

12-Learning and Teaching Re	esources
Required textbooks (curricular books any)	An Introduction to Higher Mathematics, Patrick Kee,f2021
any)	AN INTRODUCTION TO MATHEMATICS، A. N. WHITEHEAD,2
Main references (sources)	COMMON CORE STATE STANDARDS for MATHEMAT

	William Schmidt 2018
	11 mm 5 m
Recommended books and	
references (scientific journals,	An Introduction to Higher Mathematics، Patrick Kee،f2021
reports)	AN INTRODUCTION TO MATHEMATICS, A. N. WHITEHEAD,2
Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical chemistry

Course Description Form

1-Course Name: Microbio	logy
2-Course Code: FHN23016	
3-Semester / Year:second	
4-Description Preparation	Date: * • /4/ * • * *
5-Available Attendance For	ms: class
6-Number of Credit Hours ((Total) / Number of Units (Total):175/7
o rumber of credit flours ((10tal) / 14talloci of Ollits (10tal).175/7
	name (mention all, if more than one name)
Name: Asst.Prof. Dr. Ali R. Mu Email:	ulakhudair
Lillan.	
8-Course Objectives	
1. Demonstrate an understanding of	•
the structural similarities and differences among microbes and the	•
unique structure/function	•
relationships of prokaryotic cells.	
2. Comprehend the fundamentals of dairy microbiology.	
3. Appreciate the diversity of dairy	
microorganisms and microbial	
communities in milk and milk	
products and recognize how	
microorganisms solve the fundamental problems their	
environments present.	
4. Recognize how the underlying	
principles of epidemiology of	
disease and pathogenicity of in milk	

and milk products.	
-	

9-Teaching and Learning Strategies

Strategy

Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	Introduction to microbial world		Theoretical- practical	Test
2	2	Microbial Structure Function		Theoretical- practical	Test
3		Microbial Metabolism		Theoretical- practical	Test
4	2	Microbial Grow		Theoretical- practical	Test
5	2	Microbial geneti		Theoretical- practical	test
6	2	Molecular Information F and Pro Processing		Theoretical- practical	Test
7	2	Mid-term Exam		Theoretical- practical	Test
8	2	Microbial Symbioses Humans		Theoretical- practical	Test
9	2	Virology		Theoretical- practical	Test
10	2	Person to Per Bacterial and V Diseases		Theoretical- practical	Discussion

11	2			Theoretical- practical	Discussion
12	2	Vectorborne Soilborne Bacto and Viral Diseas		Theoretical- practical	Discussion
13	2	Waterborne Foodborne Bacterial and V Diseases		Theoretical- practical	Discussion
14	2	Introduction mycology		Theoretical- practical	Discussion
15	2	Introduction Parasitology		Theoretical- practical	Discussion
		ning and Teach		n J.A., & Miller S, & Morse S.A	& Mietzner T A & Detrick
-	allirda t	extbooks (curricula	illineact b, ex moduci		
110		ooks, if any)	Adelberg's M	Medical Microbiology, acy.mhmedical.com/content.aspx	28e. McGraw Pbookid=2629§ionid=21776
	bo		Adelberg's M https://accesspharma WILLEY, J. M., SI (2012). Prescott's pr	Medical Microbiology, acy.mhmedical.com/content.aspx? HERWOOD, L. M., WOOLVER inciples of microbiology. New You	28e. McGraw Phookid=2629§ionid=21776 RTON, C. J., & PRESCOTT, 1 ork, McGraw-Hill.
Main Recor	reference mmende	ces (sources)	Adelberg's M https://accesspharma WILLEY, J. M., SI (2012). Prescott's pr Riedel S, & Hobden Mitchell T.G., & Sa Adelberg's Medical	Medical Microbiology, acy.mhmedical.com/content.aspx? HERWOOD, L. M., WOOLVER	28e. McGraw 2bookid=2629§ionid=21776 RTON, C. J., & PRESCOTT, Dork, McGraw-Hill. & Mietzner T.A., & Detrick B, & R(Eds.), (2019). Jawetz, Melnick
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Main Recor refere report Electr 2-	reference (sences (sences (sences -Course-Co	ces (sources) ed books and scientific journals, eferences, Website ee Name: Physic	Adelberg's M https://accesspharma WILLEY, J. M., SI (2012). Prescott's pr Riedel S, & Hobden Mitchell T.G., & Sa Adelberg's Medical https://accesspharma https://en.w Course Descr	Medical Microbiology, acy.mhmedical.com/content.aspx? HERWOOD, L. M., WOOLVER inciples of microbiology. New You J.A., & Miller S, & Morse S.A., kanari J.A., & Hotez P, & Mejia R Microbiology, 28e. McGraw Hill. acy.mhmedical.com/content.aspx? Tikipedia.org/wiki/Ana Tiption Form	28e. McGraw 2bookid=2629§ionid=21776 RTON, C. J., & PRESCOTT, I ork, McGraw-Hill. & Mietzner T.A., & Detrick B, & R(Eds.), (2019). Jawetz, Melnick bookid=2629§ionid=21776

	ourse administrator ame: Bashair saleh mehdi		l, if more than one name)
	mail:		
8-C	ourse Objectives	,	
cc - Th in - Tc th te - Tc an cc - Tc	nis course deals with the bancept of physics his is the basic subject for troduction of biophysics. It develop problem solving skrough the application of chniques. It demonstrates and interaction of his demonstrates of the managements of the solve some mathematic oblem for biophysics conceptions.	kills heat food	
		 _	
Strategy	 This is the basing To develop produce To understand 		f biophysics . the application of techniques. mperature ,pressure on food components.
	 This is the basing To develop produce To understand 	sic subject for introduction of oblem solving skills through dinteraction of heat and ten	f biophysics . the application of techniques. mperature ,pressure on food components.
10-0	2. This is the basi 3. To develop pro 4. To understand 5. To solve some	sic subject for introduction of oblem solving skills through dinteraction of heat and ten	f biophysics . the application of techniques. mperature ,pressure on food components.

2	2	The Mechani properties materials	Theoretical-practical
3		Heat Temperature	Theoretical-practical
4	2	Motion in ODimension	Theoretical-practical
5	2	Laser and med application	Theoretical-practical
6	2	Introduction optics	Theoretical-practical
7	2	Midterm exa Effects Radiation Humans	Theoretical-practical
8	2	Physical Properties Fluid	Theoretical-practical
9	2	Electric Curre	Theoretical-practical
10	2	Physical- Chemical Interactions food	Theoretical-practical
11	2	Pressure and temperature	Theoretical-practical
12	2	Conductive H Transfer	Theoretical-practical
13	2	Effect Irradiation Food safety quality	Theoretical-practical
14	2	Polymers Industry	Theoretical-practical
15	2	Preparatory week before final Exam	Theoretical-practical
11	1–Cou	rse Evaluation	

30therotical test 10 practical test 10 report $_{ extstyle 2}$ 35 therotical final test 15 practical final test

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12-Learning and Teachi	na Resources	
	Biophysics: An Introduction, Dadan Rosana, Mechanical and Electrical Technology	lo
	Wisnoe,2015	
Main references (sources)	APPLIED BIOPHYSICS, Paata J. Kervalishvili,2021	_
Recommended books and		
references (scientific journals,	Biophysics: An Introduction, Dadan Rosana, Mechanical and Electrical Te Wisnoe, 2015	hı
reports)		
,	https://ia800204.us.archive.org/30/items/biophysicscon	-
	Course Description Form	Ê
1-Course Name: Dairy r	•	
1 doubt runie. Dany 1	nanaraeta mg	
2-Course Code: FHN240)22	
3-Semester / Year:seco	nd	
5 Semester / Tear. 5000		
4 D	· D	
4-Description Preparati	ion Date: r · /4/f · f :	
5-Available Attendance l	Forms: class	
6-Number of Credit Hou	rs (Total) / Number of Units (Total):175/7	
7 Course administrate	r's name (mention all, if more than one name)	
Name: Dr.haneen Abdul A	,	
Email:		
8-Course Objectives		
1 Pacagnizing the importance	e of the •	
1- Recognizing the importance	practical	
course from the scientific and	practical	
course from the scientific and point of view.	•	
course from the scientific and	•	
course from the scientific and point of view. 2- Teaching students the nu	• utritional	
course from the scientific and point of view. 2- Teaching students the nuvalue of milk and its products.	utritional	

- 4- Teaching the student the precise chemical composition of the components of milk and its products.
- 5- Teaching students the equipment and chemicals used in dairy production.
- 6- Teaching the student how to manufacture ice cream and dairy products.
- 7- Teaching students modern methods and means in the dairy industry.
- 8-Study the technologies used in the manufacture of different cheeses.
- 9- Studying the steps to control the quality of the production of cheese and fermented milk products.
 - 10-Studying the importance of preparing and equipping tools, supplies and production conditions in dairy factories.

9-Teaching and Learning Strategies

Strategy

The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1		Introduction and introduct the curriculum		Theoretical- practical	Test
2		Nutritional value of products		Theoretical- practical	Test

3		The economic importan milk and its products	Theoretical- practical	Test
4	2	Diseases transmitted by m	Theoretical- practical	Test
5	2	milk components Water fatty substances	Theoretical- practical	Test
6	2	protein and the sugar lacto	Theoretical- practical	Test
7	2	Mid-term Exam	Theoretical- practical	Test
8	2	Vitamins and lactose sugar	Theoretical- practical	Test
9	2	enzymes and salts	Theoretical- practical	Test
10	2	Microorganisms in milk	Theoretical- practical	Discussion
11	2	secretion of milk	Theoretical- practical	Discussion
12	2	Milk treatment in treatment	Theoretical- practical	Discussion
13	2	Dairy production	Theoretical- practical	Discussion
14	2	Milk fermentation industry	Theoretical- practical	Discussion
15	2	Incidental dairy products	Theoretical- practical	Discussion

30therotical test 10 practical test 10 report $_{ extstyle extsty$

12-Learning and Teaching Resources				
Required textbooks (curricular books	Timespies of Dairy Manufacturing, edited by Dr. Helan Hammadi			
any)	Tikriti and Khaled Mohammed Al-Khal			
Main references (sources)	Al-Shabibi , M. M. A. , J. Tobias , S. Al-Fayadh , M. H. 1975. M . Sc. Thesis , University of Baghdad Iraq .			
	L. Tuckey , and E. Langner . 1964. J. Dairy Sci. 47 : 259.			

Recommended books and	
references (scientific journals,	Principles of Dairy Manufacturing, edited by Dr. Helan Hammadi Tikriti and Khaled Mohammed Al-Khal
reports)	
Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical chemistry
Cour	se Description Form

Course	Description Form
1Course Name: Food microbio	logy
	<u> </u>
2-Course Code: FHN23013	
3-Semester / Year:second	
, , ,	
4-Description Preparation Dat	e:٣٠ / 4 /٢٠٢٤
5-Available Attendance Forms:	21000
5-Available Attendance Politis.	Class
6 Number of Credit Hours (Tota	1) / Number of Units (Total):150/6
0-Number of Credit Hours (Total	1) / Number of Omits (Total).130/0
7-Course administrator's nam	e (mention all, if more than one name)
Name: Dr. Ali R. Mulakhudair	o (montion an, il moro than one name)
Email:	
Lindii.	
8-Course Objectives	
Demonstrate an understanding of the	
structural similarities and differences	•
among microbes and the unique	•
structure/function relationships of	•
prokaryotic cells.	
2. Comprehend the fundamentals of dairy	
microbiology.	
3. Appreciate the diversity of dairy	
microorganisms and microbial	
communities in milk and milk products	
and recognize how microorganisms solve	
the fundamental problems their	
environments present. 4. Recognize how the underlying	
principles of epidemiology of disease and	
principles of epidemiology of disease and	1

pathogenicity of in milk and milk products.

_

9-Teaching and Learning Strategies

Strategy

Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Week	Hours	Deguired	Unit or subject	Learning method	Evaluation method
week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	duction to the microb		Theoretical- practical	Test
2	2	portance of Microbes relationship with fo		Theoretical- practical	Test
3		d contamination by m		Theoretical- practical	Test
4	2	nsic Parameters of Fo Affect Microbial Gro		Theoretical- practical	Test
5	2	insic Parameters of Fo Affect Microbial Gro		Theoretical- practical	Test
6	2	at Microbiology and S		Theoretical- practical	Test
7	2	Mid-term Exam		Theoretical- practical	Test
8	2	ultry meat Microbiold Spoilage		Theoretical- practical	Test
9	2	and fish products mic and spoilage		Theoretical- practical	Test

10	2	etables and vegetable microbiology and spo	Theoretical- practical	Discussion
11	2	Fruits and fruit produ microbiology and spo	Theoretical- practical	Discussion
12	2	Cereals and cereal pro microbiology and spo	Theoretical- practical	Discussion
13	2	s, oilseeds, and dried nicrobiology and spo	Theoretical- practical	discussion
14	2	Milk and dairy produ microbiology and spo	Theoretical- practical	Discussion
15	2	Milk and dairy produ nicrobiology and spo	Theoretical- practical	Discussion

30therotical test 10 practical test 10 report $_{\mbox{\scriptsize J}}$ 35 therotical final test 15 practical final test

12-Learning and Teaching Resources				
Required textbooks (curricular books any)	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry			
Main references (sources)	Modern Analytical Chemistry.			
Recommended books and references (scientific journals, reports)	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry			
Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical chemistry			

Course Description Form

1-Course Name: Food safety and Hygiene;	
2-Course Code: FHN23017	
3-Semester / Year:second	

4-I	Descrip	tion Prepai	ration Date: r · /4	./ ۲ . ۲ £	
5-A	vailabl	e Attendand	ce Forms: class		
6-N	Jumber	of Credit H	Jours (Total) / Nur	mber of Units (Total):150	N/6
0-1	vullibel	of Cledit 11	ours (Totar) / Nur	inder of Offics (Total).130	// O
					,
		administra Prof. Dr. Ali R.	,	ntion all, if more than or	ne name)
	Email:	Prof. Dr. Ali K.	Mulaknudair		
8-0	Course	Objectives			
	onstrate a fety and h	n understandi	ng of •		
2. Comp	prehend t	he fundamenta		••••	
	•	ts importance diversity		••••	
termino	logy used	d to describe for	boo		
	nd hygiei gnize hov	ne w the underlyi	ng		
principl	es of foo	d safety contro			
and food	d storage				
9-	Teachin	g and Lear	ning Strategies		
Strategy	у				
		_		will be adopted in delivering this me time refining and expanding the	_
	be a	chieved through	classes, interactive tutor	rials and by considering types of si	=
	samp	oling activities th	nat are interesting to the s	students.	
10-	-Course	e Structure			
Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	_	I utual		Theoretical-practic	test
	2	ecognition of			
		tudents and urriculum that			
		vill be taught			
		er seme			
		ttendance ecognition r			
		nd o			
ŀ		bligations		<u> </u>	

2	2	listorical aspect	Theoretical-practic	test
		afe food produc		
3			Theoretical-practic	test
		The system of tafety management		
4		ystem of Ha:	Theoretical-practic	test
	2	nalysis	P	test
	-	ritical Con oint (HAC		
		rinciples		
		IACCP and CC		
		asic Principles	Theoretical-practic	test
5	2	ccording to		
		Vorld He		
	+	rganization The main cause	The constitution of the co	
_	1	pod disea	Theoretical-practic	test
6	2	nicrobiological,		
		hemical		
		hysical ri ontamination, c		
		ontamination,		
		rimary		
		econdary follution		
			Theoretical-practic	test
7	2	Mid-term Exam	•	
		Unsafe food	Theoretical-practic	test
8	2	for health		
O				
	1	Food Sa	Theoretical-practic	test
9	2	Control		
	+	Management	Theoretical-practic	discussion
10	2	food produ	process	aiscassion
10	1	Good Produc Practices, G		
		Agricultural		
		Practices, G		
	+	Hygienic Practi The	ml 1	11
	2	importance of	Theoretical-practic	discussion
11	2	sanitation,		
		sterilization,		
		disinfection, deratization in		
	\perp	Food Safety		
		Food hygiene	Theoretical-practic	discussion
12	2	Cooling of for Food process		
		Packaging,		
I	- I	1 07		

		Labeling, Declaration, Transportation.			
13	2	Personal hyg of staff, hyg facilities w food is produ and processed		Theoretical-practic	discussion
14	2	Food storage		Theoretical-practic	discussion
15	2	Food storage		Theoretical-practic	discussion
11	-Cour	se Evaluation			
test		·	ning Resources	port ₉ 35 therotical final	'
Requir			Riedel S, & Hobden	J.A., & Miller S, & Morse S.A., &	Mietzner T.A., & Detrick B
-	if any)	(Same	Mitchell T.G., & Sak Adelberg's Me	anarı J.A., & Hotez P, & Mejia R(E edical Microbiology, 2	ds.), (2019). Jawetz, Melnick 28e. McGraw F
Main re	eferenc	es (sources)		y.mhmedical.com/content.aspx?bool "Dairy microbiology handbook:	
Recom	mende	d books and		.A., & Miller S, & Morse S.A., & M	
referen	nces (so	cientific journals,		A., & Hotez P, & Mejia R(Eds.), (2	2019). Jawetz, Melnick, & A
reports	s)	-		<i>Microbiology,</i> 28e. sy.mhmedical.com/content.aspx?bool	McGraw kid=2629§ionid=217768′
reports		erences, Website	https://accesspharmac		
		erences, Website	https://accesspharmac	y.mhmedical.com/content.aspx?bool	
Electro	onic Ref	erences, Website	https://accesspharmac	y.mhmedical.com/content.aspx?bool	
Electro	onic Ref	erences, Website	https://accesspharmac	y.mhmedical.com/content.aspx?bool	
Electro	onic Ref	erences, Website	https://accesspharmace	y.mhmedical.com/content.aspx?bool	
Electro	onic Ref	erences, Website e Name: <mark>Orga</mark> n	https://accesspharmace	y.mhmedical.com/content.aspx?bool	
1-0	Course	erences, Website e Name: <mark>Orga</mark> n	https://accesspharmace	y.mhmedical.com/content.aspx?bool	
1-0	Course	erences, Website e Name: Organ e Code: FHN12	https://accesspharmace	y.mhmedical.com/content.aspx?bool	
1-0 2-0	Course Course Semes	erences, Website e Name: Organ e Code: FHN12 ter / Year:sec	https://accesspharmace	iption Form	
1-0 2-0	Course Course Semes	erences, Website e Name: Organ e Code: FHN12 ter / Year:sec	https://accesspharmaces Course Description chemistry 207	iption Form	
1-0 2-0 3-3	Course Course Semes	erences, Website e Name: Organ e Code: FHN12 ter / Year:sec	Course Descr nic chemistry 207 ond tion Date: * /4	iption Form	
1-0 2-0 3-3 4-1	Course Course Semes Descri	e Name: Organ e Code: FHN12 ter / Year:sec	Course Descr nic chemistry 207 ond tion Date: * / 4	iption Form	kid=2629§ionid=217768

7-Course administrator's name (mention all, if more than one name)

Name: Rana khadim Ridha

Email:

8-Course Objectives

9-Teaching and Learning Strategies

Strategy

- 1- Lecture method and the use of the interactive whiteboard
- 2- Explanation and clarification Providing students with the basics and additional topics related to the outputs of chemical thinking and analysis organic.
- 3- Forming discussion groups during lectures to discuss organic chemistry topics that require thinking and analysis.
- 4- Asking students, a set of reflective questions during the lectures, such as what, how, when, and why for specific topics

Giving students homework that requires self-explanations in causal ways

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	General principles organic chemistry		Theoretical- practical	test
2	2	Saturated aliphydrocarbons.		Theoretical- practical	test
3		Aliphatic compounds.		Theoretical- practical	test
4	2	Alkanes.		Theoretical- practical	test
5	2	Alkenes.		Theoretical- practical	test

6	2	Seminar	Theoretical- practical	test
7	2	Alkyne.	Theoretical- practical	test
8	2	Mid-term exam	Theoretical- practical	test
9	2	Ethers and Alcohols.	Theoretical- practical	test
10	2	Seminar	Theoretical- practical	discussion
11	2	Simple carbonyl compounds such as aldehydes and ketone	Theoretical- practical	discussion
12	2	Carboxylic acids.	Theoretical- practical	discussion
13	2	Seminar	Theoretical- practical	discussion
14	2	Amines and a compounds.	Theoretical- practical	discussion
15	2	Final exam	Theoretical- practical	discussion

30therotical test 10 practical test 10 report ${}_{\text{\tiny 9}}$ 35 therotical final test 15 practical final test

12-Learning and Teaching Resources						
Required textbooks (curricular books any)	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry					
Main references (sources)	Modern Analytical Chemistry.					
Recommended books and references (scientific journals, reports)	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry					
Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical_chemistry					

Course Description Form

1-Course Name: Pathogenic microbiology

			name	
Week	Hours	Required Learning Outcomes	Unit or subject	Learning method
10-	-Course	e Structure		
Strateg	Type while	something like: The main strategy that will e at the same time refining and expanding t dering types of simple experiments involving	heir critical thinking skills	. This will be achieved through c
9-	Teachin	g and Learning Strategies	1	
	-	s most relevant to current clinical laboratory	*	
diagnosis health an 2. The ir compour opportun	s and/or tread advance ncreasing inded by the distict infect	attment of pathogens of major significance to d practical training in this diverse field acidence of microbial infections worldwide is rapid evolution of drug-resistant variants and ions by other organisms ogram places particular emphasis on practical	public • s being d	
		ehensive theoretical knowledge of medical ding the spread of microorganisms, disease ca	ausation,	
8-0	Course	Objectives		
	Email:	Nalia Kilaulili Niulia		
		administrator's name (mentio	n all, if more than	one name)
6-N	Number	of Credit Hours (Total) / Number	er of Units (Total):1	50/6
5-A	Availabl	e Attendance Forms: class		
4-[Descrip	tion Preparation Date: • /4/•	. Y £	
3-5	Semeste	er / Year: first		
2 (Lourse	Code: FHN24018		
/ - 1	OUMOO!	Codo. EUNO 1010		

2	2	Classification of pathogenic microbes	Theoretical-pract	cal
3		Pathogenesis of Bacterial Infection	Theoretical-pract	cal
4	2	Normal human microflora	Theoretical-pract	cal
5	2	Spore-Forming Gram-Posi Bacilli: <i>Bacillus</i> and <i>Clostridium</i> Specie	Theoretical-pract	cal
6	2	The Staphylococci	Theoretical-pract	cal
7	2	Mid-term Exam	Theoretical-pract	cal
8	2	The Streptococci, Enterococci, and Rel Genera	Theoretical-pract	cal
9	2	Enteric Gram-Negative R (Enterobacteriaceae)	Theoretical-pract	cal
10	2	Pseudomonas, Acinetobacter, Burkholde and Stenotrophomonas	Theoretical-pract	cal
11	2	Vibrio, Aeromonas, Campylobacter, and Helicobacter	Theoretical-pract	cal
12	2	Antimicrobial Chemotherapy	Theoretical-pract	cal
13	2	Pathogenesis and Control of Viral Disea	Theoretical-pract	cal
14	2	Medical Mycology	Theoretical-pract	cal
15	2	and parasitology	Theoretical-pract	cal
11	1-Cours	se Evaluation		
30th	erotical	test 10 practical test 10 report $_{ extstyle 9}$ 35	therotical final test 15 practical fina	l tes
12	2-Learn	ing and Teaching Resources		
Requi	red textbo	ooks (curricular books, if any)	Riedel S, & Hobden J.A., & Miller S, & Morse S Mitchell T.G., & Sakanari J.A., & Hotez P, & Mej	.Α., & ι R(Εσ
			· · · · · · · · · · · · · · · · · · ·	

	Y . M.1.1 0 A.1.11 J. M. P. 1 C.
Main references (sources)	Jawetz, Melnick, & Adelberg's Medical Michellers://accesspharmacy.mhmedical.com/content.as x?l
Recommended books and references (scientific journals,	Riedel S, & Hobden J.A., & Miller S, & Morse S.A. Mitchell T.G., & Sakanari J.A., & Hotez P, & Mej
reports)	1 · · · // · · · · · · · · · · · · · · ·
Electronic References, Websites Course Description E	https://en.wikipedia.org/wiki/Analy
Course Description F	orm
1-Course Name: Monitoring of food quality	
2-Course Code: FHN36028	
3-Semester / Year:second	
4-Description Preparation Date:۳۰/4/۲۰۲۶	
5-Available Attendance Forms: class	
6-Number of Credit Hours (Total) / Number of U	nits (Total):150/6
7-Course administrator's name (mention all,	if more than one name)
Name: Asst.Prof. Dr. Ali R. Mulakhudair Email:	II More than one hamo,
8-Course Objectives	
1. Demonstrate an understanding of food safety and hygiene 2. Comprehend the fundamentals of food safety and its importance. 3. Appreciate the diversity terminology used to describe food safety and hygiene 4. Recognize how the underlying principles of food safety control and food storage	
9-Teaching and Learning Strategies	
,	

- 2. Comprehend the fundamentals of food safety and its importance .
- 3. Appreciate the diversity terminology used to describe food safety and hygiene
- 4. Recognize how the underlying principles of food safety control and food storage

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	Terms And Definitions food quality		Theoretical- practical	test
2	2	Food Sampling		Theoretical- practical	test
3		Specifications raw materials		Theoretical- practical	test
4	2	System of Had Analysis Critical Cont Point (HACO principles HACCP and CC		Theoretical- practical	test
5	2	Basic Principles Food Sa according to World He Organization		Theoretical- practical	test
6	2	The main cause food disea microbiological, chemical physical ri contamination, cross contamination, primary secondary f pollution		Theoretical- practical	test
7	2	Mid-term Exam		Theoretical- practical	test
8	2	Unsafe food for health		Theoretical- practical	test

		Food Sa	Theoretical-	test
9	2	Control	practical	
10	2	Management food produ Good Produc Practices, G Agricultural Practices, G Hygienic Practic	Theoretical- practical	discussion
11	2	The importance of sanitation, sterilization, disinfection, deratization in Food Safety	Theoretical- practical	discussion
12	2	Food hygiene Cooling of for Food process Packaging, Labeling, Declaration, Transportation.	Theoretical- practical	discussion
13	2	Personal hygien staff, hyg facilities wl food is produand processed	Theoretical- practical	discussion
14	2	Food storage	Theoretical- practical	discussion
15	2	Food storage	Theoretical- practical	discussion
11	_			

30therotical test 10 practical test 10 report $_{\mbox{\scriptsize J}}$ 35 therotical final test 15 practical final test

12-Learning and Teaching Resources						
Required textbooks (curric	Riedel S, & Hobden J.A., & Miller S, & Morse S.A., & Mietzner T.A., & Detrick F Mitchell T.G., & Sakanari J.A., & Hotez P, & Mejia R(Eds.), (2019). <i>Jawetz, Melnic</i>					
books, if any)	Adelberg's Medical Microbiology, 28e. McGraw https://accesspharmacy.mhmedical.com/content.aspx?bookid=2629§ionid=217768					
	Robinson, Richard K "Dairy microbiology handbook: the microbiology of milk and products." (2005).					
	Riedel S, & Hobden J.A., & Miller S, & Morse S.A., & Mietzner T.A., & Detrick I					
references (scientific journals,	Mitchell T.G., & Sakanari J.A., & Hotez P, & Mejia R(Eds.), (2019). <i>Jawetz, Melnic Adelberg's Medical Microbiology</i> , 28e. McGraw					
reports)	https://accesspharmacy.mhmedical.com/content.aspx?bookid=2629§ionid=217768					
Electronic References, Websites						

Course Description Form

1-Cou	ırse Name: <mark>Nutrition and ge</mark> r	ietics
2-Cours	se Code: FHN35025	
2 Con	caston / Vannisacond	
3-3611	nester / Year:second	
4-Des	cription Preparation Date: ••••••••••••••••••••••••••••••••••••	. /4/۲.7 £
	i i	1 -1
5-Ava	ailable Attendance Forms: class	S
6-Nur	nber of Credit Hours (Total) /]	Number of Units (Total):150/6
0 1 102	moor or crount from (10m)	Tumber of Child (Tollin), 12 of C
7-Col	ırse administrator's name (r	mention all, if more than one name)
	ime: Dr. Rabab Jawad Hassen Al Hassa	•
	nail:	<i></i> ,
8-C01	urse Objectives	
	e student learns about the	
	portance of analytical	
che	emistry and its types.	
	e student learns the methods	••••
	finding concentrations of	
	emicals and the types of	
	emical titration.	
	e student learns the basic	
_	nciples of quantitative and	
-	alitative analysis methods in	
ana	llytical chemistry.	
unc		
	aching and Learning Strategies	3
9-Tea	aching and Learning Strategies 5- Lectures	5
9-Tea		
9-Tea	5- Lectures	
9-Tea	5- Lectures 6- Discussion	solving
	5- Lectures 6- Discussion 7- Brainstorming Problem s	solving Simulation Method
9-Tea	5- Lectures 6- Discussion 7- Brainstorming Problem s 8- Practical presentations&	solving Simulation Method

1	N –	Coi	irse	Stri	icture

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	Introduction		Theoretical- practical	test
2	2	DNA and F structure		Theoretical- practical	test
3		Chromosome structure		Theoretical- practical	test
4	2	nutrigenetics		Theoretical- practical	test
5	2	Effect of the nutrit on genome		Theoretical- practical	test
6	2	Effect of the nutrit on Epigenetics		Theoretical- practical	test
7	2	Effect of the nutrit on histone		Theoretical- practical	test
8	2	Effect of carbohydrate genome		Theoretical- practical	test
9	2	Examination1		Theoretical- practical	test
10	2	Effect of the portion genome		Theoretical- practical	discussion
11	2	Effect of the fat on genome		Theoretical- practical	discussion
12	2	Food Mutagens		Theoretical- practical	discussion
13	2	Food carcinogenic		Theoretical- practical	discussion

14	2	Effect of the gend on select food	Theoretical- practical	discussion
15	2	Examination2	Theoretical- practical	discussion

30therotical test 10 practical test 10 report $_{\mbox{\scriptsize 9}}$ 35 therotical final test 15 practical final test

12-Learning and Teaching Resources						
Required textbooks (curricular books	MOLECULAR BASIS OF NUTRITION AND AGING					
any)	A Volume in the Molecular Nutrition Series MA					
Main references (sources)	MALAVOLTA(2010) الخفاجي محمود زهرة NUTRIGENETICS.2010					
, ,	MOLECULAR BASIS OF NUTRITION AND AGING					
Recommended books and	A Volume in the Molecular Nutrition Series MAR					
references (scientific journals,	MALAVOLTA(2010)					
reports)						
Electronic References, Websites	https://en.wikipedia.org/wiki/Analytical_chemistry					

Course Description Form

1-Course Name:	Recycling and	processing foo	d factory waste

2-Course Code: UoB12345

3-Semester / Year:second

- 4-Description Preparation Date: ** /4/ * * *
- 5-Available Attendance Forms: class
- 6-Number of Credit Hours (Total) / Number of Units (Total):150/6

7-Course administrator's name (mention all, if more than one name)

Name: Dr.haneen Abdul Ameer Lateef

Email:

8-Course Objectives

- 1- Reducing environmental pollution: The use of materials again reduces the resulting waste that leads to pollution of the globe, and thus reduces environmental pollution in a direct way.
- 2- Reducing marine pollution: by reducing the liquid, solid and gaseous industrial waste that factories and individuals dispose of towards the seas, oceans and rivers, it reduces the exposure of these water bodies to pollution, thus preserving the life of the organisms that live in them and increasing the opportunity to use the water of rivers and streams as a source of drinking water.
- 3- Reducing air pollution: by reducing the gaseous emissions that industries produce daily by recycling these gases in various ways, and thus reduces air pollution and maintains the main air composition as it is, thus reducing human exposure to diseases that result from that pollution, especially materials toxic.
- 4- Achieving sustainability: Reducing the use of raw materials and the factories' need for them from nature. This leads to ensuring the share of future generations of those natural materials, and thus directly achieving the concept of sustainable development.
 - 5- Reducing the required energy: Reusing various resources as energy sources leads to a reduction in the amount of energy used.

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9-Teaching and Learning Strategies

Strategy

The main strategy that will be adopted in delivering this module is encourage students' participation in the exercises, while at the same ti refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of sime experiments involving some sampling activities that are interesting to students

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	An introduction to f factory waste methods of recycling		Theoretical- practical	test
2	2	Dangers arising from accumulation of f processing waste		Theoretical- practical	test
3		Benefit from f processing waste		Theoretical- practical	test
4	2	Types of food proces waste		Theoretical- practical	test
5	2	Recycling and treatn of dairy industry wast		Theoretical- practical	test
6	2	By-products of the dindustry		Theoretical- practical	test
7	2	Mid-term Exam		Theoretical- practical	test
8	2	Whey waste resul from the manufacture cheese		Theoretical- practical	test
9	2	Milk churning residue		Theoretical- practical	test
10	2	Recycling and treatn of waste resulting f the processing vegetables and fruits		Theoretical- practical	discussion
11	2	Recycling and treatment of waste resulting from grain processing		Theoretical- practical	discussion
12	2	Recycling and treatr of waste resulting f the manufacture of su		Theoretical- practical	discussion
13	2	Recycling and treatn of waste resulting f meat slaughterhouses		Theoretical- practical	discussion
14	2	Recycling and treatn of waste resulting f		Theoretical- practical	discussion

		fish processing		
15	2	The use of find processing waste in production of biofuels	Theoretical- practical	discussion

30therotical test 10 practical test 10 report $_{ extstyle extsty$

12-Learning and Teaching Resources							
Required textbooks (curricular books	Residues from the dairy industry and soybean milk, their uses and health bene						
any)	by Dr. Nadia Abdel Majeed Abu Zaid 2011						
Main references (sources)	International Conference on: "New Role for the World Sugar Economy Changed Political and Economic Environment 2012"						
Recommended books and							
references (scientific journals,	Residues from the dairy industry and soybean milk, their uses and health bene by Dr. Nadia Abdel Majeed Abu Zaid 2011						
reports)							
Electronic References, Websites							

Course Description Form

1-Course Name: Recycling and processing food factory waste
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2-Course Code: UoB12345
3-Semester / Year:second
A.D. C. C. D. C. C. D. C. W. JAJN. N.
4-Description Preparation Date: ۲۰/۹/۲۰۲۶
5-Available Attendance Forms: class
6-Number of Credit Hours (Total) / Number of Units (Total):150/6
7-Course administrator's name (mention all, if more than one name)
Name: Dr.haneen Abdul Ameer Lateef
Email:

8-Course Objectives

- 1- Reducing environmental pollution: The use of materials again reduces the resulting waste that leads to pollution of the globe, and thus reduces environmental pollution in a direct way.
- 2- Reducing marine pollution: by reducing the liquid, solid and gaseous industrial waste that factories and individuals dispose of towards the seas, oceans and rivers, it reduces the exposure of these water bodies to pollution, thus preserving the life of the organisms that live in them and increasing the opportunity to use the water of rivers and streams as a source of drinking water.
- 3- Reducing air pollution: by reducing the gaseous emissions that industries produce daily by recycling these gases in various ways, and thus reduces air pollution and maintains the main air composition as it is, thus reducing human exposure to diseases that result from that pollution, especially materials toxic.
- 4- Achieving sustainability: Reducing the use of raw materials and the factories' need for them from nature. This leads to ensuring the share of future generations of those natural materials, and thus directly achieving the concept of sustainable development.
 - 5- Reducing the required energy: Reusing various resources as energy sources leads to a reduction in the amount of energy used.

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9-Teaching and Learning Strategies

Strategy

The main strategy that will be adopted in delivering this module is encourage students' participation in the exercises, while at the same ti refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of sime

experiments involving some sampling activities that are interesting to students

Week	Hours	Required	Unit or subject	Learning method	Evaluation method
		Learning	name		
		Outcomes			
1	2	An introduction to f factory waste methods of recycling		Theoretical- practical	test
2	2	Dangers arising from accumulation of f processing waste		Theoretical- practical	test
3		Benefit from f processing waste		Theoretical- practical	test
4	2	Types of food proces waste		Theoretical- practical	test
5	2	Recycling and treatn of dairy industry wast		Theoretical- practical	test
6	2	By-products of the dindustry		Theoretical- practical	test
7	2	Mid-term Exam		Theoretical- practical	test
8	2	Whey waste resul from the manufacture cheese		Theoretical- practical	test
9	2	Milk churning residue		Theoretical- practical	test
10	2	Recycling and treatm of waste resulting f the processing vegetables and fruits		Theoretical- practical	discussion
11	2	Recycling and treatment of waste resulting from grain processing		Theoretical- practical	discussion
12	2	Recycling and treatn of waste resulting f the manufacture of su		Theoretical- practical	discussion
13	2	Recycling and treatr of waste resulting f meat slaughterhouses		Theoretical- practical	discussion

14	2	Recycling and treatn of waste resulting f fish processing	Theoretical- practical	discussion
15	2	The use of f processing waste in production of biofuels	Theoretical- practical	discussion

30therotical test 10 practical test 10 report $_{9}$ 35 therotical final test 15 practical final test

12-Learning and Teaching Resources						
Required textbooks (curricular books	Residues from the dairy industry and soybean milk, their uses and health bene					
any)	by Dr. Nadia Abdel Majeed Abu Zaid 2011					
Main references (sources)	International Conference on: "New Role for the World Sugar Economy Changed Political and Economic Environment 2012"					
Recommended books and						
references (scientific journals,	Residues from the dairy industry and soybean milk, their uses and health bene by Dr. Nadia Abdel Majeed Abu Zaid 2011					
reports)						
Electronic References, Websites						

Course Description Form

4.0	•	. 1 1		C 1	•
1-Course Name:	Hmerging	technol	OOIES 1	n taad	nrocessing
I doubt manne.	Linersing		logics i	11 1000	processing

2-Course Code: FHN48039

3-Semester / Year:second

4-Description Preparation Date: * /4/ * • * £

5-Available Attendance Forms: class

6-Number of Credit Hours (Total) / Number of Units (Total):150/6

7-Course administrator's name (mention all, if more than one name)

Name: Dr.haneen Abdul Ameer Lateef

Email:

8-Course Objectives

- 1-One of the main advantages of food processing technologies
- 2-To understand who can help extend the shelf life of food products.
- 3-To Know what means that food can be stored for more extended periods without spoiling
 - 4-To figure food processing can also help improve food safety by reducing the risk of contamination

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9-Teaching and Learning Strategies

Strategy

The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Week	Hours	Required Learning	Unit or	Learning method	Evaluation method
		Outcomes	subject		
			name		
1	2	Introduction :High Press Processing of Foods		Theoretical- practical	test
2	2	Pulsed Electric F Processing for Food		Theoretical- practical	test
3		Other Non-ther Processing Technique Developments in Osm Dehydration		Theoretical- practical	test
4	2	Non-thermal Processing Radio Frequency Elec Fields		Theoretical- practical	test
5	2	Application of Ultrasound		Theoretical- practical	test
6	2	Irradiation of Foods		Theoretical- practical	test

			Theoretical-	test
7	2	Mid-term Exam	practical	
		New Chemical	Theoretical-	test
8	2	Biochemical Hurdles	practical	
		Recent Developments	Theoretical-	test
9	2	Microwave Heating	practical	
			Theoretical-	discussion
10	2	Radio-Frequency Processii	practical	
			Theoretical-	discussion
11	2	Ohmic Heating	practical	
		Combined Microw	Theoretical-	discussion
12	2	Vacuuum-drying	practical	
		Innovations in F	Theoretical-	discussion
13	2	Refrigeration: Vacuum Coo of Foods and High-Press	practical	
		Freezing		
		Introduction	Theoretical-	discussion
14	2	Nanotechnology in Food Dairy Science	practical	
		3D printing f	Theoretical-	discussion
15	2	manufacturing	practical	
		l l	1	

30therotical test 10 practical test 10 report ${}_{\mbox{\scriptsize 9}}$ 35 therotical final test 15 practical final test

12-Learning and Teaching Resources			
Required textbooks (curricular books	Residues from the dairy industry and soybean milk, their uses and health ber by Dr. Nadia Abdel Majeed Abu Zaid 2011		
any)			
Main references (sources)	International Conference on: "New Role for the World Sugar Economy Changed Political and Economic Environment 2012"		
Recommended books and			
references (scientific journals,	Residues from the dairy industry and soybean milk, their uses and health bene by Dr. Nadia Abdel Majeed Abu Zaid 2011		
reports)	J		
Electronic References, Websites			

Course Description Form

1-Course Name: Food Poisoning

2-Course Code: FHN48038				
3-Semester / Year:second				
4-Description Preparation Date	e: r · /4/r · r ٤			
5-Available Attendance Forms: c	class			
(Number of Credit Hours (Total	1) / Number of Units (Total), 150/6			
0-INUITIDET OF CIECUIT HOURS (TOTAL	l) / Number of Units (Total):150/6			
7-Course administrator's nam	e (mention all, if more than one name)			
Name: Asst.Prof. Dr. Ali R. Mulakhudair Email:				
8-Course Objectives				
1. Define the microbial toxicology	•			
2. Familiar with microorganisms produced toxins	•			
3. Differentiate between chemical •				
toxins and biological toxins 4. Compare between Endotoxins and				
Exotoxins				
5. Diagnose the symptoms of bacterial toxins and mycotoxins	5. Diagnose the symptoms of bacterial toxins and mycotoxins			
6. list the types of bacterial and				
mycotoxins 7. write briefly the structure of any				
microbial toxin				
8. Discuss the mechanism action of any toxin				
9. Describe the detoxification				
methods of the microbial toxins				
- List the method used for assaying the bacterial and myco-toxins				
9-Teaching and Learning Strate	gies			
Strategy Type something like: The main s students' participation in the exerciskills. This will be achieved through	trategy that will be adopted in delivering this module is to encourage ises, while at the same time refining and expanding their critical thinking bugh classes, interactive tutorials and by considering types of simpleing activities that are interesting to the students.			

10		Day to the sector	11.26	1	E al accountant
Week	Hours	Required Learning	Unit or	Learning method	Evaluation method
		Outcomes	subject		
			name		
1	2	An overview to micro toxins in food		Theoretical- practical	test
2	2	Part 1: Food poisoning toxins		Theoretical- practical	test
3		Staphylococcal 1 positioning		Theoretical- practical	test
4	2	Botulism food positioning		Theoretical- practical	test
5	2	Perfringens food positionir		Theoretical- practical	test
6	2	Escheichia coli 1 positioning		Theoretical- practical	test
7	2	Mid-term Exam		Theoretical- practical	test
8	2	Bacillus cereus 1 positioning		Theoretical- practical	test
9	2	Part 2: Food poisoning infections		Theoretical- practical	test
10	2	Salmonellosis		Theoretical- practical	discussion
11	2	Campylobacteriosis		Theoretical- practical	discussion
12	2	Virbriosis		Theoretical- practical	discussion
13	2	Yersinosis		Theoretical- practical	discussion

14	2	Food poisoning Mycotoxins	Theoretical- practical	discussion
15	2		Theoretical- practical	discussion

30therotical test 10 practical test 10 report $_{ extstyle extstyle extstyle extstyle extstyle 35}$ therotical final test 15 practical final test

12-Learning and Teaching Resources		
Required textbooks (curricular books any)	1- Microbial Toxins: Structure and Their Type Paperback – April 17, 2011 by Rajeeva Gaur (Author), Soni Tiwari (Author), Ranjan Singh (Author)	
Main references (sources)	1- Microbial Toxins: Current Research and Future Trends by Thomas Proft (Editor), Publisher: Caister Academic Press (April 14, 2009)	
Recommended books and references (scientific journals, reports)	1- Microbial Toxins: Structure and Their Type Paperback – April 17, 2011 by Rajeeva Gaur (Author), Soni Tiwari (Author), Ranjan Singh (Author)	
Electronic References, Websites		