

MODULE DESCRIPTION FORM

Module Information			
Module Title	Agricultural Informatics		Module Delivery
Module Type	Core learning activity	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☒ Seminar	
Module Code	AGI1080		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1		
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGE1979, AETT1979, AGME1986	College	AGFO1964
Module Leader	zwaïd fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhîm Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy	e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Title	Professor		
Title	Assistant Professor		
Module Tutor	N.A.	e-mail	N.A.
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	1/2/2026	Version Number	1.0

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	This Module introduces students to the principles and applications of informatics in agriculture. Students will learn to utilize information technology, data analysis, and decision-support systems to enhance agricultural productivity while ensuring sustainable practices.
Module Learning Outcomes LOs	The student should be able to: LO#1. Understand the Role of IT in Agriculture and Forestry LO#2. Identify Key Digital Technologies for Modern Farming and Forestry LO#3. Recognize Foundational Concepts in Data Security and E-Commerce Explore Future Innovations in Agricultural Informatics
Indicative Contents	The Agricultural Informatics module links information technology with agriculture, emphasizing modern tools such as IoT, GIS, AI, and big data to improve productivity and sustainability. It encompasses data management, precision farming, remote sensing, and decision support systems. Students acquire hands-on experience with GIS mapping, IoT configurations, and AI models, preparing them to address challenges like resource efficiency, climate adaptation, and food security through innovative, data-driven approaches. This module equips graduates to deploy advanced solutions in agriculture for a sustainable future.

Learning and Teaching Strategies	
Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Show examples for writing scientific reports in the correct formats.

1

Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	4
Total SWL (h/sem)	125		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4,11	LO#1, LO#3
	Assignments	2	10% (10)	9,13	LO#2, LO#4
	Projects/ Seminar	1	10% (10)	All	All
	Report	1	10% (10)	15	All
Summative	Midterm Exam	2hr	10% (10)	8	LO#1, LO#2

assessment	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Agricultural Informatics
Week 2	Agricultural Data Management Systems (ADMS)
Week 3	Internet of Things (IoT) in Agriculture
Week 4	Machine Learning and Artificial Intelligence in Agriculture
Week 5	Decision Support Systems (DSS) in Agriculture
Week 6	Using Drones in Agriculture
Week 7	Data Analysis in Agriculture
Week 8	Mid-term Exam
Week 9	Blockchain Technology and Food Traceability
Week 10	Mobile Applications in Agricultural Extension
Week 11	Forest Monitoring and Desertification Control Using Remote Sensing
Week 12	Agricultural Machinery Management and Robotics: Self-Driving Tractors
Week 13	E-Commerce in the Agricultural Sector
Week 14	Data Security and Protection in Smart Agriculture
Week 15	The Future of Agricultural Informatics: Prospects and Innovations
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Projects Syllabus)
--

	Material Covered
Week 1	Discussion on Agricultural Informatics Applications in Iraq.
Week 2	Designing a Simple Database for a Virtual Farm
Week 3	Using Spreadsheets for Yield Analysis
Week 4	Automated Pest and Disease Detection Using AI Algorithms
Week 5	Setting up a Simple Soil Monitoring Device Using Local Tools and Creating a Simple Irrigation DSS Model Using Excel
Week 6	Aerial Drone Surveys and Spectral Image Analysis
Week 7	Simulating GPS Use for Agricultural Mapping and Creating a Local Agricultural Map Using GIS
Week 8	Simulating Crop Tracking from Farm to Market
Week 9	Prototyping a Mobile Application for Agricultural Extension
Week 10	Designing a Simple Prototype of a Manual Robot
Week 11	Building a Small Greenhouse Using Local Materials
Week 12	Developing an E-Commerce Marketing Plan for an Agricultural Product
Week 13	Applications of Data Security in Smart Farming
Week 14	The Future and Innovations in Agricultural Informatics
Week 15	Final Project Presentations that present practical projects addressing local agricultural challenges focusing on feasible technology-based solutions.

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Choudhury, A., Biswas, A., Prateek, M., & Chakraborty, A. (2021). Agricultural Informatics: Automation Using IoT and Machine Learning. Wiley-Scrivener.	No
Recommended Texts	- Pierce, F. J., & Zhang, Q. (2016). Agricultural Automation: Fundamentals and Practices. CRC Press. - Shamtsyan, M., Pasetti, M., & Beskopylny, A. (2021). Robotics, Machinery and Engineering Technology for Precision Agriculture. Springer. - Li, D. (2016). Computer and Computing Technologies in Agriculture: Proceedings of CCTA. Springer. - Satapathy, S., Mishra, D., Vargas, A. R., & El-Bendary, N. (2022). Innovation in Agriculture with IoT and AI. Springer. - Singh, R., Gehlot, A., Singh, B., & Choudhury, S. (2022). Internet of Things (IoT) Enabled Automation in Agriculture. CRC Press. - Boote, K. J. (Ed.). (2021). Advances in Crop Modelling for Sustainable Agriculture. CAB International.	

Websites	
----------	--

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				



MODULE DESCRIPTION FORM

Module Information			
Module Title	BIODIVERSITY		Module Delivery
Module Type	Core learning activity		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	BIO1070		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986	College	AGFO1964
Module Leader	zwaid fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhim Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz massa Sumood Husain Ai Al-Hadedy	e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Title	Professor Assistant Professor	Qualification	Ph.D. MSc.
Module Tutor	N.A.	e-mail	N.A.
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	/ /	Version Number	1.0

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Enable students to appreciate the importance of biodiversity conservation in addressing environmental challenges and climate change. 2. Provide students with fundamental concepts of biological diversity and the role of living organisms in ecosystems..
Module Learning Outcomes LOs	The student should be able to: LO#1: Identify classifications of living organisms and patterns of biological diversity in various environments. LO#2: Understand the evolutionary and genetic mechanisms that contribute to the emergence of biodiversity over time. LO#3: Evaluate threats to biodiversity and analyze the impact of human activities on ecosystems. LO#4: Propose suitable strategies for biodiversity conservation and the sustainable use of natural resources. L
Indicative Contents	Indicative content includes the following. <u>Theoretical</u> The course covers fundamental concepts of biological diversity and taxonomic classifications, extending to ecosystem studies and methods for species and habitat conservation, with a focus on current threats and future challenges. Total hrs = = SSWL - (Exam hrs) = 63-3 = 60 hrs (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	1. (Interactive Lectures) 2. (Project-Based Learning) 3. (Case Studies) 4. (Field Trips) 5. (Group Discussions and Presentations) L

Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	
Total SWL (h/sem)	125		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 11	LO#1 and LO#2
	Home Assignments	2	10% (10)	2 and 13	LO#1 and LO#3
	College Assignments		10% (10)	All	All
	Report	1	10% (10)	14	LO#1, LO#2 and LO#4
Summative assessment	Midterm Exam	hr	10% (10)	7	LO#1, LO#2 and LO#3
	Final Exam	hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to Biological Diversity B
Week 2	Taxonomy and Scientific Nomenclature
Week 3	Genetic Diversity and Evolution B
Week 4	Ecological Diversity and Ecosystems
Week 5	Measuring Biodiversity and Its Indicators
Week 6	Factors Affecting Biological Diversity
Week 7	Mid-term Exam
Week 8	Environmental and Economic Value of Biodiversity B
Week 9	Current Threats to Biodiversity
Week 10	Species Extinction and Conservation Strategies
Week 11	Biodiversity in Aquatic Ecosystems
Week 12	Biodiversity in Terrestrial Ecosystems
Week 13	Climate Change and Its Impact on Biodiversity B
Week 14	Biodiversity and Sustainable Development
Week 15	Natural Resource Management and Sustainable Use B
Week 16	Future Directions in Biodiversity Enhancement B

Delivery Plan (Weekly Laboratory Syllabus)	
	Material CoveredB
Week 1	Future Directions in Biodiversity Enhancement
Week 2	Collection and Classification of Plant and Animal Samples B
Week 3	Practical Applications of Scientific Nomenclature in the Lab
Week 4	Genetic Diversity Measurements and DNA Analysis Techniques
Week 5	Field Survey of Ecosystems (Forest or Agricultural)
Week 6	Biodiversity Assessment in Soil and Water Samples
Week 7	Monitoring Environmental Threats (e.g., Pollution and Biological Invasions) B
Week 8	Community Analysis of Biotic Assemblages B
Week 9	In-situ and Ex-situ Conservation Techniques B
Week 10	Studying the Impact of Climate Change on Biotic Communities B
Week 11	Field Visit to High-Biodiversity Areas B
Week 12	Data Documentation and Analysis Using Statistical Software B
Week 13	Designing Models for Biodiversity Conservation and Sustainable Use B
Week 14	Developing Management Plans for Species Protection B
Week 15	Presentation and Discussion of Research Findings and Practical Reports

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Gaston, K. (2010) Chapter 2: Biodiversity. In N.S. Sodhi & P. R. Ehrlich, Conservation Biology for All (pp. 27 - 43). Society for Conservation Biology.	-
Recommended Texts		-
Websites		

Grading Scheme

Group	Grade	Marks %	Definition
Success Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX ☐ Fail	(45-49)	More work required but credit awarded
	F ☐ Fail	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



MODULE DESCRIPTION FORM

Module Information			
Module Title	BIOSAFETY and SECURITY		Module Delivery
Module Type	Suport learning activity		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	BSS1050		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	1	Semester of Delivery	2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGE1979, AETT1979, AGME1986	College	AGFO1964
Module Leader	zwaïd fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhîm Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy	e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Acad. Title	Professor Assistant Professor	Qualification	Ph.D. MSc.
Module Tutor	N.A.	e-mail	N.A.
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	/ /	Version Number	1.0

Relation with other Modules			
Prerequisite module	ACE1020	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Equip students with fundamental knowledge of biosafety and biosecurity principles and their practical application in agricultural, forestry, and food-related settings. 2. Enable students to develop the skills necessary to identify, assess, and manage biological hazards, ensuring the protection of human health, the environment, and food products. B
Module Learning Outcomes LOs	The student should be able to: LO#1: Identify common biological hazards in agriculture, forestry, and food sectors, and assess their level of risk. LO# : Apply biosafety and biosecurity principles and practices in accordance with recognized international standards and levels. LO# : Design and implement prevention and control programs for biological hazards in laboratories and agricultural/food production facilities. LO# : Adhere to ethical and legal considerations when handling biological materials, ensuring public health and environmental protection. B
Indicative Contents	Indicative content includes the following. <u>Theoretical</u> The course covers the concepts of biosafety and biosecurity, risk assessment, regulations, and safe laboratory techniques, with practical training on using personal protective equipment, sterilization, and waste disposal. It also enhances understanding of emergency response and designing biosecurity protocols in agricultural and food sectors, aiming to ensure worker safety and protect products and the environment. Total hrs = = SSWL - (Exam hrs) = 47-2 = 28 hrs (Time table hrs x 15 weeks)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. (Interactive Lectures) 2. (Project-Based Learning) 3. (Case Studies) 4. (Workshops and Hands-On Training) 5. (Group Discussions and Presentations) B

Student Workload (SWL)			
Structured SWL (h/sem)	47	Structured SWL (h/w)	3
Unstructured SWL (h/sem)	28	Unstructured SWL (h/w)	2
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 11	LO#1 and LO#2
	Home Assignments	2	10% (10)	2 and 13	LO#1 and LO#3
	College Assignments	2	10% (10)	All	All
	Report	1	10% (10)	14	LO#1, LO#2 and LO#4
Summative assessment	Midterm Exam	hr	10% (10)	7	LO#1, LO#2 and LO#3
	Final Exam	hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to Biosafety and Biosecurity B
Week 2	Types of Biological Hazards in the Agricultural and Food Sectors
Week 3	Risk Assessment and Management
Week 4	Biosafety Levels and International Standards
Week 5	Personal Protective Equipment (PPE) and Safe Work Practices
Week 6	Sterilization, Disinfection, and Biological Waste Disposal
Week 7	Mid-term Exam
Week 8	Safe Storage, Handling, and Transport of Biological Materials B
Week 9	Good Laboratory Practices (GLP) and Quality Standards
Week 10	Biosecurity in Agriculture and Protection of Plant and Animal Resources
Week 11	Emergencies and Rapid Response to Biological Incidents
Week 12	Local and International Regulations on Biosafety and Biosecurity
Week 13	Ethical Considerations and Dual-Use of Biological Technologies B
Week 14	Case Studies and Practical Applications in Biosafety and Biosecurity
Week 15	Workshops and Simulations for Biosafety Protocol Design B
Week 16	Comprehensive Review and Final Assessment B

Delivery Plan (Weekly Syllabus)	
	Material CoveredB
Week 1	Introduction to Biosafety and Biosecurity
Week 2	Types of Biological Hazards in the Agricultural and Food Sectors
Week 3	Risk Assessment and Management
Week 4	Biosafety Levels and International Standards
Week 5	Personal Protective Equipment (PPE) and Safe Work Practices
Week 6	Sterilization, Disinfection, and Biological Waste Disposal
Week 7	Safe Storage, Handling, and Transport of Biological Materials
Week 8	Good Laboratory Practices (GLP) and Quality Standards
Week 9	Biosecurity in Agriculture and Protection of Plant and Animal Resources
Week 10	Emergencies and Rapid Response to Biological Incidents
Week 11	Local and International Regulations on Biosafety and Biosecurity
Week 12	Ethical Considerations and Dual-Use of Biological Technologies
Week 13	Case Studies and Practical Applications in Biosafety and Biosecurity
Week 14	Workshops and Simulations for Biosafety Protocol Design
Week 15	Comprehensive Review and Final Assessment

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Basics of Biological and Occupational Safety in Laboratories and Scientific Institutions / Ministry of Higher Education - University of Kufa / College of Agriculture - Department of Food Sciences	-
Recommended Texts	Biosafety and Biosecurity Training and Education Materials/Biorisk Management Guide May 2020 - This guide was issued in cooperation with the Ministry of Higher Education and the Iraqi Ministry of Health	-
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	Marks %	Definition
Success Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX - Fail	(45-49)	More work required but credit awarded
	F - Fail	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



MODULE DESCRIPTION FORM

Module Information				
Module Title	AGRICULTURAL STATISTICS		Module Delivery	
Module Type	Core learning activity		☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	AGS1060			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	1		Semester of Delivery	
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986		College	AGFO1964
Module Leader	zwaïd fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhîm Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy		e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firmasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Title	Professor Assistant Professor			Ph.D. MSc.
Module Tutor	N.A.		e-mail	N.A.
Peer Reviewer Name	N.A.		e-mail	N.A.
Scientific Committee Approval Date	/ /202		Version Number	1.0

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1– Knows statistics and its types, and differentiates between descriptive statistics and inferential or inferential statistics 2– Explains what descriptive variables are, and recognizes the difference between a sample and a population 3– Organizes and draws a frequency distribution table and identifies its parts 4– Organizes a relative frequency distribution table and ascending and descending summation 5– Finds the arithmetic mean – and recognizes the properties of the arithmetic mean 6– Works on how to find the range, mean deviation, variance, and standard deviation
Module Learning Outcomes	LO#1: Is able to compile and classify data, and present it with tables and graphics LO#2: Is able to calculate descriptive statistics of numerical data LO#3: Can build hypothesis and test the hypothesis, and can make a statistical deduction LO#4: Can build relation between the data using statistics and make interpretations on them in order to make decisions
Indicative Contents	Enriching the student with knowledge regarding the conduct and benefit of the agricultural statistical process, and learning how to measure the measurement of centering, mediation and correlation and how to employ them in the field of agricultural engineering sciences and techniques for implementing integration correctly to reach quantity and quality Total hrs = = SSWL - (Exam hrs) = - = (Time table hrs x 15 weeks)

Learning and Teaching Strategies

Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Show examples for writing scientific reports in the correct formats.
-------------------	--

Student Workload (SWL)			
Structured SWL (h/sem)		Structured SWL (h/w)	5
Unstructured SWL (h/sem)		Unstructured SWL (h/w)	3
Total SWL (h/sem)			

Module Evaluation					
		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO#2
	Collage Assignments	2	10% (10)	2 and 12	LO#1, LO#2 and LO#3
	Home Assignments	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO#3
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO#2
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to the nature of statistics and the most important sections of statistics - the nature of data and statistical symbols
Week 2	The nature of statistical data - the difference between quantitative and descriptive variables, with examples of each type
Week 3	The difference between society and sample with mathematical examplesB
Week 4	Tabular and Graphing - Frequency Distribution Table - How to Create Classes and Find Class Length
Week 5	Clustered Distributions - Descending Cumulative Frequency Distribution Table - Frequency Curve - Graph of Cumulative Frequency Distribution TableB
Week 6	Measures of mediation and centering - arithmetic mean - geometric meanB
Week 7	Measures of centering and centering - harmonic mean - squared mean - median - modeB
Week 8	Measures of dispersion or variation - range - mean deviation - variance and standard deviationB
Week 9	Measures of dispersion or variation - the most important properties of variation or standard deviation - standard error - standard score
Week 10	Principles of probability theory - factorial - permutations - combinations - random experiment

Week 11	Discrete Probability Distributions - Binomial Distribution - Properties of Binomial DistributionB
Week 12	Hypothesis Testing - Statistical Hypothesis - Null Hypothesis - Alternative HypothesisB
Week 13	Types of Error - General Steps in Hypothesis Testing
Week 14	T-test - Z-test
Week 15	Simple Correlation and Regression - Correlation Coefficient B
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Syllabus)	
B	
	Material Covered
Week 1	The nature of statistical data
Week 2	The nature of statistical dataB
Week 3	Statistical symbol
Week 4	Graphical representation and display of data
Week 5	Graphical representation and display of data
Week 6	Measures of central tendency and centering
Week 7	Measures of central tendency and centering
Week 8	Measure of dispersion or different
Week 9	Measure of dispersion or different
Week 10	Midterm exam
Week 11	Probability theory B
Week 12	Statistical test
Week 13	Statistical test
Week 14	Correlation coefficient data analysis
Week 15	Preparatory week before the final Exam

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	introduction to Statistics - Principles of Statistics	Yes
Recommended Texts	Statistics and Statistical Methods Book	No
Websites	https://www.udemy.com/course/bmwqjwxb/?srsltid=AfmBOoesbV6jEmBd_tAQSa288D_QY0Hc1yK1i3seCLaNTyAT4ckpyn	

Grading Scheme

Group	Grade		Marks %	Definition
Success Group (50 - 100)	A - Excellent		90 - 100	Outstanding Performance
	B - Very Good		80 - 89	Above average with some errors
	C - Good		70 - 79	Sound work with notable errors
	D - Satisfactory		60 - 69	Fair but with major shortcomings
	E - Sufficient		50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail		(45-49)	More work required but credit awarded
	F Fail		(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



MODULE DESCRIPTION FORM

Module Information					
Module Title	AGRICULTURAL MARKETING TECHNIQUES			Module Delivery	
Module Type	Core learning activity			☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	AMT1100				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		Semester of Delivery		
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986		College	AGFO1964	
Module Leader	zwaid fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhim Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy		e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq fitasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq	
		Professor Assistant Professor			Ph.D. MSc.
Module Tutor	N.A.		e-mail	N.A.	
Peer Reviewer Name	N.A.		e-mail	N.A.	
Scientific Committee Approval Date	/ /202		Version Number	1.0	

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. The student gains a basic understanding of the food marketing system in the country. 2. The student describes the agricultural marketing chain. 3. The student identifies various economic principles and how they relate to agricultural marketing. 4. The student discusses consumer demand and the impact of marketing on consumer demand. 5. The student discusses specialty products and value-added products. 6. The student understands the importance of agricultural cooperatives. 7. The student describes the structure of agricultural marketing. 8. The student develops a marketing plan for an agricultural product
--------------------------	--

Module Learning Outcomes	The student should be able to: LO#1: Explain the basic marketing functions of buying, selling, transportation, storage, financing, standardization, pricing, and risk bearing. LO#2: Apply economic principles to the marketing of agricultural products. LO#3: Identify alternatives in the marketing of agricultural commodities/products. LO#4: Study the structure of agricultural markets.
Indicative Contents	Indicative content includes the following. <u>Part A - Circuit Theory</u> Developing the correct management skills for agricultural marketing in the precise specialization and determining the appropriate means for marketing agricultural products in the fastest time, highest marketing efficiency and lowest costs, and working to transport agricultural commodities through good and fast transportation methods to ensure transportation in the fastest times because agricultural crops are susceptible to rapid spoilage if they are not transported and stored in storage methods. Various types, and work on packing agricultural products in glass, cardboard, plastic or wooden boxes. The most important modern means of shopping will be discussed, such as electronic marketing via the Internet. Students will also be taught how to shop practically by visiting wholesale marketing places and teaching students how a merchant or broker works in shopping. Total hrs = 32 = SSWL - (Exam hrs) = 32 - 2 = 30 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Show examples for writing scientific reports in the correct formats.

Student Workload (SWL)			
Structured SWL (h/sem)		Structured SWL (h/w)	
Unstructured SWL (h/sem)		Unstructured SWL (h/w)	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	15% (15)	4,6,9	LO#2, LO#4
	Home Assignments	2	10% (10)	2 and 12	LO#1, LO#4
	Collage Assignments	1	5% (5)	10 and 11	LO#3
	Report	1	10% (10)	13	LO#4
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO#1, LO#2
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introductions and Course Overview; Types of Markets, Role of Agriculture Marketing in economic development.
Week 2	Agricultural Marketing system, Marketing system productivity.
Week 3	Analysis of Agricultural Marketing system and approaches.
Week 4	Market organizations.
Week 5	Marketing tools.
Week 6	Market Efficiency and Margins and costs.
Week 7	Midterm Exam.
Week 8	Agricultural Marketing in Iraq.
Week 9	Agricultural Marketing problems and solutions.
Week 10	Role of Private and public sector in agricultural marketing.
Week 11	Government Marketing services, Agricultural Marketing information system.
Week 12	Agricultural Extension services, Marketing legislation, Agricultural prices, Agricultural price policy in Iraq, Agricultural wholesale markets.
Week 13	Development and Characteristics of Wholesales Markets, Commodity Marketing in Iraq.
Week 14	International Agricultural Marketing.
Week 15	Methods of exporting, Export process, WTO and its implementation in Iraq.
Week 16	Preparing the student for the final exam

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Principles of Agricultural Marketing, Abu Saeed Al-Duwaihi, Al-Hamid Publishing House, 2001, Amman.	Yes
Recommended Texts	— Ali Faleh Al-Zaib, “Marketing Management - A Strategic Applied Perspective,” Dar Al-Yazouri Scientific, 2019. - Ali Faleh Al-Zouaib, “Marketing Communications: An Applied Methodological Approach,” 9th Edition, Dar Al-Masiriya for Publishing and Distribution, Amman-Jordan, 2191 – Issa Hammoud Al-Hassan, “Commercial Promotion of	No

	Goods and Services,” 9th edition, Zahran Publishing and Distribution House, Oman, .2191 - Ghassan Qasim Daoud Al-Almi, “Marketing Management New Ideas and Directions,” 9th edition, Safaa Publishing House. Distribution, Amman	
Websites	-	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	راسب قيد المعالجة	(45-49)	More work required but credit awarded
	F Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				



MODULE DESCRIPTION FORM

Module Information				
Module Title	SUSTANIBLE DEVELOPMENT		Module Delivery	
Module Type	Core learning activity		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☒ Seminar	
Module Code	SUD1090			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level		Semester of Delivery		
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986	College	AGFO1964	
Module Leader	zwaid fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhim Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy	e-mail	zu-kh1985@uomosul.edu.iq dr.omarallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firmaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq	
Title	Professor Assistant Professor			Ph.D. MSc.
Module Tutor	N.A.	e-mail	N.A.	
Peer Reviewer Name	N.A.	e-mail	N.A.	
Scientific Committee Approval Date	/ /202	Version Number	1.0	

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents
--

Module Objectives	1. Understand the concept of sustainable development and its various dimensions. 2. Analyze the impact of environmental and social changes on achieving sustainability. 3. Study the role of government policies and innovation in supporting sustainable development. 4. Raise awareness of the importance of achieving social justice within the goals of sustainability.
Module Learning Outcomes	LO#1: How sustainability considerations can actually be embedded within an individual's and community's day to day activities and decision-making processes. LO#2: How existing sustainable development tools and methods can be adjusted/fine-tuned accordingly, and how to design sustainability performance metric to assess the impact on community's sustainable development. LO#3: How to design feedback systems that can readjust the pathways of processes and procedures to ensure success in implementing sustainable development initiatives. LO#4: How to empower communities set sustainability targets using appropriate metrics.
Indicative Contents	The theoretical and cognitive foundation of the concept of sustainable development will be developed and an experiential understanding of emerging global challenges for sustainable environmental and community governance systems will be gained through theoretical lectures in the fifteen weeks. By focusing on seminars related to sustainable development and simulating successful country experiences, the capacity of communities and students will be enhanced and their research role and development in establishing the necessary information links and feedback loops within the system will be raised to allow system actors to have a sound understanding of developing sustainable solutions. This will enable visualization of the different factors that affect sustainability and proposing an action plan for building sustainable communities. Total hrs = 2 = SSWL - (Exam hrs) = 62-2= 60 (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Show examples for writing scientific reports in the correct formats.

Student Workload (SWL)

Structured SWL (h/sem)	62	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	63	Unstructured SWL (h/w)	4
Total SWL (h/sem)	125		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	15% (15)	3, 9 ,11	LO#1, LO#2, LO#3 and LO#4
	Collage Assignments	2	10% (10)	2 and 12	LO#1 and LO#3
	Projects	1	10% (10)	Continuous	All
	Report	1	5% (5)	14	LO#4
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO#1, LO#2
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Theory Syllabus)

	Material Covered
Week 1	Introduction to Sustainable Development
Week 2	Economic, Social, and Environmental Dimensions of Sustainable Development
Week 3	History and Evolution of the Concept of Sustainable Development
Week 4	(Sustainable Development Goals (SDGs
Week 5	Sustainability in Natural Resource Management
Week 6	Climate Change and Its Impact on Sustainable Development

Week 7	Midterm Exam
Week 8	The Role of Education and Awareness in Achieving Sustainable Development
Week 9	Renewable Energy and Sustainability
Week 10	Sustainability in the Agricultural and Food Sector
Week 11	Government Policies and Their Role in Achieving Sustainable Development
Week 12	Innovation and Technology in Supporting Sustainability
Week 13	Social Justice and Equality in Sustainable Development
Week 14	Global Challenges Facing Sustainable Development
Week 15	The Future of Sustainable Development
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Seminars Syllabus)	
	Material Covered
Week 1	Analysis of environmental challenges and opportunities in sustainable development.
Week 2	Analyzing the role of technology in supporting sustainability.
Week 3	Workshop on sustainability applications in local projects.
Week 4	Netherlands: Circular farming in the dairy sector, reusing animal waste for energy and bioplastics, using bioreactor technology integrated with IoT sensors
Week 5	Smart Pastures project in Mongolia, rotational grazing systems based on satellite monitoring, to restore 15% of degraded pastures annually

Week 6	Intensive Rice Project in Madagascar, implementing SRI (System of Rice Intensification) to increase production by 50% while saving water in a geography: highland areas in Antananarivo
Week 7	Smart Sustainable Farms in Ethiopia, integrating conservation agriculture with drought early warning systems: to increase crop resilience by 40% in Tigray regions
Week 8	Brazil: Low Carbon Agriculture Model (ABC Program), reducing methane emissions by 38% through integrated livestock waste management
Week 9	China: Loess Plateau Rehabilitation, largest ecological restoration project (35,000 km²), using terraced terraces + water harvesting + selective afforestation.
Week 10	Jordan: "Water Rationing" project, micro-drip irrigation technology with big data analysis, by reducing water consumption by 70% in vegetable cultivation.
Week 11	Zambia: Conservation agriculture with FAO, zero tillage + permanent mulch + crop rotation, to increase maize production by 120% in 5 years
Week 12	"Palm Oasis" project in Morocco, combating desertification through solar drip irrigation systems.
Week 13	African Drylands Program (Senegal), cultivation of salt-resistant sorghum with fog harvesting, to reduce rural youth migration by 55%
Week 14	"Integrated Farming" project in the Niger Delta, fish farming with rice cultivation in the same water body, to increase income by 300% while improving biological fertility
Week 15	Project presentations and discussions on feasibility and conclusions. •

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Omar bin Akhdar Khalfawi "Sustainable Development"	No
Recommended Texts	Abdullah bin Abdulrahman Al-Baridi "Sustainable Development: An Integrated Approach to Sustainability Concepts and Applications"	
Websites		

Grading Scheme

Group	Grade	Marks %	Definition
Success Group (50 - 100)	A Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C Good	70 - 79	Sound work with notable errors
	D Satisfactory	60 - 69	Fair but with major shortcomings
	E Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	(45-49)	More work required but credit awarded
	F Fail	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



MODULE DESCRIPTION FORM

Module Information					
Module Title	ARABIC LANGUAGE 1			Module Delivery	
Module Type	Basic learning activities			☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOM1011				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level					
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986		College	AGFO1964	
Module Leader	zwaïd fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhîm Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy		e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq	
		Professor Assistant Professor			Ph.D. MSc.
Module Tutor	N.A.		e-mail	N.A.	
Peer Reviewer Name	N.A.		e-mail	N.A.	
Scientific Committee Approval Date	1/ /202		Version Number	1.0	

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. Introducing students to the basics of the Arabic language. Also breaking the barrier of shyness and increasing their confidence inside and outside the classroom. 2. Engaging them in short discussions where they can write or express themselves orally. 3. Improving their reading, writing, listening and speaking skills as students, and strengthening students' literary ability to appreciate the styles of the language and realize its beauty .
--------------------------	--

. 1

Module Learning Outcomes	The student should be able to: LO#1: Create a full awareness of the correct use of Arabic grammar in writing and speaking. LO#2: Students will improve their ability to speak Arabic in terms of fluency and comprehension. LO#3: Students will review the grammatical forms of Arabic and use these forms in specific communicative contexts, which include: classroom activities, homework, reading texts, and writing. LO#4: Students will enhance their ability to write short paragraphs and summaries .using a process approach
Indicative Contents	Indicative content includes the following. Theoretical Introduction to communication in general and the Arabic language in particular, with an introduction to word categories (parts of speech) in Arabic {4 hours}. Explanation of each part of speech in Arabic such as nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions and conjunctions {16 hours}. Basic skills in learning Arabic: reading and writing are gradually introduced over the past weeks {6 hours}. The last part is dedicated to some error correction and feedback sessions {4 hours}. -Total hrs = 32 = SSWL - (Exam hrs) = 32 - 2 = 30 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies

Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Show examples for writing scientific reports in the correct formats.
-------------------	--

Student Workload (SWL)

Unstructured SWL (h/sem)		Unstructured SWL (h/w)	
Total SWL (h/sem)			

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	15% (15)	4,6,9	LO# , LO#
	Home Assignments	2	10% (10)	2 and 12	LO#1, LO#4
	Collage Assignments	1	5% (5)	10 and 11	LO#
	Report	1	10% (10)	13	LO#4
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO#1
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Speech and its parts B
Week 2	Punctuation marks
Week 3	Subject and predicate
Week 4	An and its sisters
Week 5	Kan and its sisters
Week 6	Rules for writing numbers
Week 7	Midterm exam
Week 8	Surat Al-Fajr B
Week 9	Its importance and explanation in addition to rhetorical, grammatical and semantic images
Week 10	The medial hamza and the extreme hamza
Week 11	The difference between the letter B B B B
Week 12	Literature Nazik Al-Malaika with her collections
Week 13	Prose styles Al-Jahiz and Abu Hayyan Al-Tawhidi
Week 14	The difference between the open taa and the closed taa
Week 15	Say and do not say
Week 16	Preparing the student for the final exam B

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	ين ذريل، عدنان B اللغة والأسلوب دراسة B الطبعة الثانية ،	No
Recommended Texts	B بحيري، سعيد حسن، الأساس في فقه اللغة العربية	No
Websites	-	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	راسب قيد المعالجة	(45-49)	More work required but credit awarded
	F Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



MODULE DESCRIPTION

Module Information			
Module Title	Beneficial insects		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	PE12180		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level		Semester of Delivery	
Administering Department	BAGRPP73	College	Type College Code
Module Leader	FirasBKadhim Aljuoori	e-mail	Firasaljuboori@uomosul.edu.iq
	assistant professor		Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	1/2/2026	Version Number	

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents
--

Module Objectives	1- Introduce the concept of beneficial insects and their agricultural and environmental importance. 2- Understand honeybee biology, social organization, and economic value. 3- Develop skills in honeybee colony management and seasonal care. 4- Identify honeybee products and apply proper methods for harvesting and utilization. 5- Diagnose honeybee diseases and pests and apply prevention and control methods. 6- Explain the role of honeybees and other insects in pollination and crop yield improvement. 7- Apply methods of honeybee reproduction and queen rearing. 8- Understand silkworm biology, rearing practices, and silk production. 9- Learn principles of biological control using predators and parasitoids. 10- Distinguish beneficial insects from agricultural pests in the field. 11- Build practical skills in field collection, observation, and evaluation. 12- Promote awareness of the role of beneficial insects in ecological balance and sustainable agriculture.
Module Learning Outcomes	LO#1 Understand the scientific and ecological principles of beneficial insects and their roles in agro-ecosystems. LO#2. Know honeybee biology, colony social organization, and roles of colony members. LO#3. Identify honeybee and silkworm diseases and pests, and relevant prevention and control measures. LO#4. Apply skills in apiary management, queen rearing, and natural and artificial reproduction. LO#5. Appreciate the roles of pollinators, predators, parasitoids, and scavenger insects in pollination, biological control, and sustainability.
Indicative Contents	The first four weeks focus on introducing honeybees in terms of their economic and environmental importance, common races, and social organization within the colony. The course then covers honeybee biology, life cycle, external and internal anatomy, and the roles of different colony members. Students learn the principles of establishing and managing an apiary, including essential tools, equipment, and seasonal care, with practical training in hive inspection. In addition, the course addresses honeybee products, their importance, and practical methods for harvesting and utilization. [SSWL=15 hrs]. Weeks five to eight cover honeybee diseases and pests, including their identification, diagnosis, and methods of prevention and control. The course highlights the role of honeybees in pollination and their importance in increasing agricultural productivity,

	with field visits to observe pollinators. It also addresses natural and artificial methods of honeybee reproduction, such as swarming and colony division. In addition, students learn the principles and practical steps of queen rearing and artificial insemination through applied training. [SSWL=15 hrs] . Week nine focuses on introducing the silkworm and its economic importance. It covers the silkworm life cycle, rearing practices, and feeding methods, with practical training on cocoon identification, silk extraction, and prevention of common diseases.. [SSWL=10 hrs] Weeks ten, eleven, and twelve focus on the concepts and applications of biological control. These weeks cover the role of predatory and parasitic insects in controlling agricultural pests, including their types and mechanisms of predation and parasitism. The content also addresses biological control of weeds using insects, with practical training in field sampling, observation of feeding behavior, and evaluation of field effectiveness. [SSWL=10 hrs] Weeks thirteen and fourteen focus on pollinating insects and decomposer insects and their environmental roles. The content covers the concept of pollination, types of pollinating insects, and their importance in biodiversity and agricultural production, with field observation of pollination behavior. It also introduces scavenger and decomposer insects, their common examples, and their role in organic matter decomposition, soil fertility improvement, and ecological balance, supported by practical sampling and activity assessment. [SSWL=10 hrs] Total hrs = = SSWL - (Exam hrs) = = hr (Time table hrs x 15 weeks)
Learning and Teaching Strategies	
Strategies	1- Interactive lecture 2- Brainstorming 3- Dialogue and discussion 4-Field Training 5- Practical exercises 6- Field project 7- Self-education

Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	2
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	2
Total SWL (h/sem)	200		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 B
	Assignments	2	10% (10)	2 and 12	LO # , # B
	Projects / Lab.	1	10% (10)	Continuous	LO # , # , , #5 B
	Report	1	10% (10)	13	LO # , # , , #5 B
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1, #2 , , #3 B
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to honeybees, including their economic and environmental importance, common races, and social organization within the colony.
Week 2	Honeybee biology, including the life cycle, external and internal anatomy, and the functions of workers, the queen, and drones.
Week 3	Honeybee colony management, including apiary establishment, tools and equipment, and seasonal feeding and care.
Week 4	Honeybee products, including honey, beeswax, royal jelly, pollen, propolis, and bee venom.
Week 5	Honeybee diseases and pests, including bacterial, fungal, and viral diseases, insect and non-insect pests, and methods of prevention and control.

Week 6	The role of honeybees in pollination, their importance in increasing agricultural productivity, and the management of honeybee colonies for pollination purposes.
Week 7	Methods of honeybee reproduction, including natural reproduction, swarming and its types, and artificial colony division.
Week 8	B Queen rearing and artificial insemination in honeybees
Week 9	Silkworms: introduction and economic importance, life cycle, rearing practices, silk production, and common diseases with methods of prevention.
Week 10	Predators: the concept of biological control, types of predatory insects, mechanisms of predation, use of predators in controlling agricultural pests, and applied examples from agricultural fields.
Week 11	Parasitoids: the concept of biological control, types of parasitic insects, mechanisms of parasitism, use of parasitoids in controlling agricultural pests, and applied examples from agricultural fields.
Week 12	Biological control of weeds, including weed-feeding insects, their types, and their importance.
Week 13	Pollinating insects: the concept of pollination, types of pollinating insects, their role in biodiversity, their impact on agricultural crops, and methods for their conservation.
Week 14	Scavenger and decomposer insects: definition, common examples, their role in organic matter decomposition, and their importance in soil fertility.
Week 15	General review and monthly examination
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Apiary visit to identify honeybee colonies and races.
Week 2	Laboratory dissection of honeybee colony members and identification of the main internal organs and structures.
Week 3	Identification of essential tools and equipment used in beekeeping and honeybee colony inspection.
Week 4	Practical application of methods for collecting honeybee products.
Week 5	Diagnosis of diseases and pests affecting honeybees.

Week 6	Apiary visit and identification of different types of pollinating insects.
Week 7	Methods of handling, hiving swarms, and artificial colony division.
Week 8	Practical application of queen rearing and artificial insemination methods.
Week 9	Silkworm stages, feeding and rearing practices, identification of cocoons, and silk extraction.
Week 10	Collection of predatory insects and their identification in comparison with agricultural pests.
Week 11	Parasitic insects, observation of parasitism, and applications of biological control.
Week 12	Field sample collection, observation of feeding behavior, and evaluation of field activity.
Week 13	Collection of pollinating insects, observation of pollination behavior, and evaluation of their field activity.
Week 14	Collection of scavenger insects, study of their role in decomposition, and their relationship to soil fertility.
Week 15	General review, final practical examination, and submission of reports.

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Beekeeping and Silkworms Book / Written by Dr. Louay Karim Al-Naji	
Recommended Texts	The bees of the world /Charles D. Michener	
Websites	https://www.google.com/search?q=%D9%83%D8%AA%D8%A8+%D8%AA%D8%B1%D8%A8%D9%8A%D8%A9+%D8%A7%D9%84%D9%86%D8%AD%D9%84&oq=%D9%83%D8%AA%D8%A8+%D8%AA%D8%B1%D8%A8%D9%8A%D8%A9+%D8%A7%D9%84%D9%86%D8%AD%D9%84&aqs=chrome..69i57j0i22i30l2j0i15i22i30l2.6551j0j15&sourceid=chrome&ie=UTF-8	

Grading Scheme				
Group	Grade		Marks %	Definition
Success Group (50 - 100)	A - Excellent		90 - 100	Outstanding Performance
	B - Very Good		80 - 89	Above average with some errors
	C - Good		70 - 79	Sound work with notable errors
	D - Satisfactory		60 - 69	Fair but with major shortcomings
	E - Sufficient		50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail		(45-49)	More work required but credit awarded
	F Fail		(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION

Module Information			
Module Title	BIOCHEMICAL ANALYSIS		Module Delivery
Module Type	Core learning activity		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	BIA2200		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UG11		
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986	College	AGFO1964
Module Leader	Dr. Omar Almallah Dr. Asmaama Dr. Yousif Yakoub Dr. Tahataqi Dr. Firas Aljuboory Dr. Khalid Anwar Dr. Wisam Yako Dr. Sumod Husain	e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboory@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Acad. Title	Professor Assistant Professor		
Module Tutor	N.A.	e-mail	N.A.
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	1/2/2026	Version Number	1.0

Relation with other Modules

Prerequisite module	BSS1050	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1- To introduce students to the basic concepts of biochemical analysis and its relationship with analytical and physical chemistry. 2- To enable students to prepare solutions, perform simple titrations, and calculate concentrations. 3- To provide students with a simplified understanding of energy concepts, reaction rate, and the physical properties of solutions.
-------------------	--

	4- To train students to link theoretical aspects with practical laboratory applications. 5-
Module Learning Outcomes LOs	Upon completion of the course, the student will be able to: LO#1: Calculate the concentrations of different solutions and accurately prepare standard and diluted solutions. LO#2: Perform simple chemical titrations and correctly analyze the results. LO#3: Use basic measuring instruments such as the pH meter and the spectrophotometer. LO#4: Interpret the results of physical measurements (turbidity, conductivity, viscosity) and write a simplified practical report.
Indicative Contents	The guidance content includes the following: Guidance Content (Theoretical): Introducing the student to the basic principles of biochemical analysis and its role in understanding the chemical and physical properties of biological materials, with clarification of the importance of solution preparation, titrations, and spectrophotometric measurements in laboratory work, and linking these concepts to their general applications in the fields of food science and health. Providing simplified applications of biochemical analysis concepts such as concentration calculations, spectrophotometric measurements, and the measurement of some physical properties of solutions, while discussing the challenges faced by students in understanding these concepts and proposing practical educational methods that contribute to enhancing understanding and correct application inside the laboratory. Total hrs = = SSWL - (Exam hrs) = 63-3= 60 (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	1- Interactive lectures. 2- Classroom discussions. 3- Demonstration presentations. 4- Practical application in the laboratory. 5- Example-based learning. 6- Mini field visits (real or virtual).

Student Workload (SWL)			
الحمل الدراسي المنتظم للطالب خلال الفصل	63	الحمل الدراسي المنتظم للطالب أسبوعياً	4
الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعياً	4
الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 11	LO#1 and LO#2
	Assignments	2	10% (10)	2 and 13	LO#1 and LO#3
	Projects/ Practical	3	10% (10)	4, 8 and 12	All
	Report	1	10% (10)	14	LO#1, LO#2 and LO#4
Summative assessment	Midterm Exam	3hr	10% (10)	7	LO#1, LO#2 and LO#3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	B B B B B B B B B molarity, normality, dilution.
Week 2	B B B B Concept of analytical errors (accuracy and precision).
Week 3	B B B B B B B
Week 4	B B B B B B B B
Week 5	B B B B B B B B
Week 6	B B B B s B B B B B B B B B B B B B examples from biological reactions.
Week 7	Mid-term Exam
Week 8	B Acid B B B B B B B
Week 9	Introduction to chemical kinetics: reaction rate and affecting factors.
Week 10	B B B B B B B B B Lambert law in a simplified form.
Week 11	B B B B B B B B B
Week 12	B B B B B
Week 13	B B B B B B
Week 14	B B B B B methods.
Week 15	B B B B B B B B B turbidity, emulsions, and viscosity.
Week 16	Scientific visit

Delivery Plan (Weekly Practical Syllabus)	
	Material Covered
Week 1	B B B B B B B B B
Week 2	B B B B B B B

Week 3	base titration using color indicators.
Week 4	base titration using a pH meter.
Week 5	B B B B B
Week 6	B Bgc C B B B B B
Week 7	B B BB B B B x B
Week 8	B B B B B B B B B
Week 9	B B BB B B B B BB B
Week 10	B B B B B T B B B
Week 11	B turbidity in a suspended solution.
Week 12	B B BB B B B B B
Week 13	B B B BB B B BB B
Week 14	• Comprehensive final experiment: measurement of pH + turbidity + viscosity + emulsion.
Week 15	Final practical exam + self-assessment of the practical course

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	N.A.	-
Recommended Texts	Printed Lectures-BIOCHEMICAL ANALYSIS	Yes
Websites		

Grading Scheme

Group	Grade		Marks %	Definition
Success Group (50 - 100)	A - Excellent		90 - 100	Outstanding Performance
	B - Very Good		80 - 89	Above average with some errors
	C - Good		70 - 79	Sound work with notable errors
	D - Satisfactory		60 - 69	Fair but with major shortcomings
	E - Sufficient		50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail		(45-49)	More work required but credit awarded
	F Fail		(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION

Module Information			
Module Title	COMPUTER SKILLS2	Module Delivery	
Module Type	Basic learning activities	☐ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOM2032		
ECTS Credits			
SWL (hr/sem)	75		
Module Level	UGII	Semester of Delivery	4
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986	College	AGFO1964
Module Leader	zwaid fathiy abd Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz Yousif Yakoub Hilal Taha Mohammed Taki Firas Kadhim Dawood Aljuboori Khaled Anwer Khaled ALKHALED wisam yako aziz masso Sumood Husain Ai Al-Hadedy	e-mail	zu-kh1985@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq Yousif.Yakoub@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq wisam_yako@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Title	Lecturer	L L	Ph.D. MSc.
Module Tutor	N.A.	e-mail	N.A.
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	1/2/2026	Version Number	1.0

Relation with other Modules			
Prerequisite module	NoneB	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Enable the student to learn about security and networks: types of networks, basic components of networks, basics of network security, understanding network threats, troubleshooting network errors. 2. Enable the student to learn about e-commerce: concepts of electronic banking services, including online banking services. 3. Enable the student to troubleshoot computer errors. 4. Enable the student to know artificial intelligence, artificial intelligence techniques and methods. 5. Provide the student with skills to deal with artificial intelligence in our daily lives.
Module Learning Outcomes	LO#1: Differentiate between various network types and components, and apply essential cybersecurity measures to protect systems against digital threats LO#2: Diagnose technical faults in computer hardware and networks, and implement effective maintenance strategies to ensure operational continuity and workflow efficiency. LO#3: Utilize electronic banking services and Fintech applications efficiently, adhering to strict security and privacy standards during online transactions LO#4: Employ Artificial Intelligence techniques and applications to generate solutions for real-world problems and interact effectively with modern smart systems.
Indicative Contents	Indicative content includes the following. Security and Networks, will be covered. [SSWL= hrs] E-commerce: E-banking concepts will be covered [SSWL= hrs] The semester also includes Computer troubleshooting [SSWL= hrs] The semester also includes Introduction to Artificial Intelligence , AI in Our Daily Lives, Applications of AI, AI and Society, Ethical Challenges in AI, The Future of AI [SSWL=21 hrs] Total hrs = = SSWL - (Exam hrs) = - = hr (Time table hrs x 15 weeks)
Learning and Teaching Strategies	
Strategies	• Practical Sessions: Lectures should be regularly applied where students can apply theoretical experience in network configuration. Practical workshops will be organized to allow students to deal with real faults and solve them in a real environment. • Project-Based Learning: Assign students applied projects that require the use of AI techniques to solve real-world agricultural problems. This encourages collaboration and critical thinking in problem solving. Provide real-world scenarios faced by businesses for students to practice troubleshooting. • Blended Learning: Integrate face-to-face learning with online resources and platforms. Use e-learning tools, such as educational videos, quizzes, and discussion forums, to provide additional support outside of classroom. Students can learn at their own pace while reinforcing what they have learned in class. Interactive lessons with explanatory videos on e-banking and how it works, with discussion sessions to enhance understanding. • Discussion and Peer Learning: Include group discussions and peer review activities. For example, after a practical lecture, we encourage students to present their solutions or projects to the class and provide feedback to each other. This promotes engagement, critical thinking, and communication skills. Extracurricular tools and applications Encourage students to use different AI tools outside the classroom to expand their skills and strengthen their applications

Student Workload (SWL)			
Structured SWL (h/sem)		Structured SWL (h/w)	
Unstructured SWL (h/sem)		Unstructured SWL (h/w)	
Total SWL (h/sem)			

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	10% (10)	1,2, 3	LO #1
	Assignments	2	10% (10)	5 and 11	LO #1, #2
	Projects / Lab.	2	10% (10)	6 and 12	LO #1, #2
	Report	1	10% (10)	14	LO #3, #4
Summative assessment	Midterm Exam	hr	10% (10)	7	LO #1, #2
	Final Exam	hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Lab 1: Security and Networks: What is a network? Types of networks, Basic components of L networks
Week 2	Lab 2: Network Security: Network security basics, Understanding network threats
Week 3	Lab 3: Network troubleshooting
Week 4	Lab 4: E-commerce: E-banking concepts including online banking: ATM and debit card services
Week 5	Lab 5: Phone banking, SMS banking, e-alert, Mobile banking
Week 6	Lab 6: Computer troubleshooting: Identify and resolve common hardware and software problems faced by computer users.
Week 7	Midterm Exam
Week	Lab 8: Basic troubleshooting techniques and tools to diagnose and resolve problems.
Week	Lab 9: Introduction to Artificial Intelligence: Definition of Artificial Intelligence, History of Artificial Intelligence.
Week	Lab 10: Artificial Intelligence techniques and methods, Challenges and ethical considerations.
Week	Lab 11: Artificial Intelligence in our daily lives: Artificial Intelligence in smartphones and virtual

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
	assistants such as Siri or Google Assistant.)
Week	Lab : Applications of Artificial Intelligence: Education, healthcare, finance, transportation, marketing and advertising.
Week	Lab : AI and Society: (How AI affects social, AI and international relations, AI and the future of humanity.)
Week	Lab : Ethical Challenges in AI :(AI ethics, privacy and surveillance, the impact of AI on the job market.)
Week	Lab : The Future of AI (Future trends in AI, recent research and emerging technologies.)
week 16	Preparing for final exams

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	1- Graham Brown, David Watson. "Cambridge IGCSE Information and Communication Technology", 3rd Edition 2- Alan Evans, Kendall Martin, Mary Anne Poatsy, B Ahmed Banafa, "Introduction to Artificial Intelligence B AI", 1st Edition	Yes (Digital)
Recommended Texts	- BA Brief Overview of Networks, by Essam Sarhan Dhiab - Information Security in Simple Language, by Dr. Khalid bin Sulaiman Al-Ghatbar and Dr. Eng. Mohammed bin Abdullah Al-Qahtani - E-commerce, prepared by Jamal Qasim Hassan and Mahmoud Abdel Salam	Yes (Digital)
Websites	- https://www.edlibre.com - https://eduhub21.com - https://albawaabh.com - https://www.mosoah.com	

Grading Scheme				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria

Fail Group (0 49)	FX Fail	راسب قيد المعالجة	(45-49)	More work is required but credit awarded
	F Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example, a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				



MODULE DESCRIPTION

Module Information					
Module Title	AGRICULTURAL PRODUCTION MECHANIZATION TECHNIQUES		Module Delivery		
Module Type	Core		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar		
Module Code	APT2130				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		UGII	Semester of Delivery		3
Administering Department		AGME1986	College	AGFO1964	
Module Leader	Yousif Yakoub Hilal		e-mail	yousif.yakoub@uomosul.edu.iq	
		Assistant Professor			Ph.D.
Module Tutor	N.A.		e-mail	N.A.	
Peer Reviewer Name		N.A.	e-mail	N.A.	
Scientific Committee Approval Date		1/2/2026	Version Number		1.0

Relation with other Modules			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1-Teaching students the fundamentals of agricultural machinery and equipment and their applications in the agricultural sector. 2-Practically applying these fundamentals in various agricultural fields. 3-Preparing advanced personnel in this field who can utilize these tools in different agricultural sectors. 4-Understanding the theories behind the design and operation of specialized agricultural equipment, as well as maintenance methods to ensure the sustainability of agricultural operations. 5-Keeping up with the rapid advancements in the agricultural sector to meet local market demands and export surplus production to global markets.
	B

Module Learning Outcomes	LO#1: Technical and Operational Efficiency of Machinery Understanding the operating principles of machinery, managing and operating them efficiently in the field, and acquiring the ability to perform maintenance and repairs. LO#2: Plant Production and Harvesting Technologies Focusing on the "crop life cycle," starting from the use of modern machinery for seeding and crop care, through to harvesting operations, while minimizing quantitative and qualitative losses. LO#3: Resource Management and Agricultural Expansion Relating to strategic planning, which involves land reclamation for agricultural expansion and the rationalization of water resources using modern irrigation systems. LO#4: Entrepreneurship in Agricultural Projects Aiming to enable students to transform theoretical knowledge into commercial application by establishing and managing small-scale production projects (plant or animal).
Indicative Contents	Introduction to Agricultural Tractors: Definition and Classification Agricultural tractors serve as the primary source of power on farms, used for various agricultural operations such as towing and hauling equipment. They are classified based on their size, horsepower, and the type of tasks they perform, including wheeled and tracked tractors. Tractor Engines and Farm Power Sources Agricultural tractors rely on internal combustion engines powered by diesel or gasoline. Other power sources on farms include electricity, solar energy, and mechanical power derived from animals. Engine Operation: Four-Stroke and Two-Stroke Cycles Engines operate using either a four-stroke cycle (intake, compression, power, exhaust) or a two-stroke cycle, with the choice affecting fuel efficiency and overall engine performance. Power Transmission Systems in Agricultural Tractors Power is transmitted from the engine to the wheels or equipment through components such as the gearbox (manual or automatic), clutch, and hydraulic transmission systems, allowing for precise control of speed and power. Ground Contact Mechanisms, Hydraulic System, and Power Take-Off (PTO) Ground contact mechanisms include wheels or tracks to ensure stability and traction. The hydraulic system is used for raising and lowering implements, while the PTO drives mechanical attachments. Primary Soil Preparation Equipment This category includes various plows such as the moldboard plow, chisel plow, disc plow, vertical disc plow, and rotary plow, all designed to break up and turn the soil, improving aeration and preparing it for planting. Secondary and Specialized Soil Preparation Equipment Equipment such as harrows and leveling tools are used after plowing to refine the soil surface and optimize growing conditions. Other tools include subsoilers, cultivators, furrow openers, and undercut cultivators. Seeding Equipment Seeding machinery includes conventional and precision seeders that ensure uniform seed distribution at the proper depth for optimal germination. Planting and Transplanting Equipment These machines are used for planting seedlings and crops that require systematic placement, such as vegetables and field crops. Fertilization Equipment This includes manure spreaders and chemical fertilizer applicators, which help distribute nutrients efficiently across fields. Sprinkler Irrigation Equipment Sprinkler irrigation systems, either stationary or mobile, deliver water evenly to crops, enhancing water use efficiency. Drip Irrigation Systems and Pumps Drip irrigation systems provide a slow and steady water supply directly to plant roots through perforated pipes, while pumps transfer water from various sources to

	agricultural fields. Pest and Fire Control Equipment This category includes sprayers and dusters used to combat agricultural pests and diseases, along with fire control equipment for fields and forests. Grain Harvesting and Fruit Picking Equipment This includes combine harvesters and their functional units, which are essential for efficient harvesting operations. Post-Harvest Equipment post-harvest operations involve drying, sorting, storage, and packaging systems designed to maintain crop quality and minimize losses before marketing.
--	---

Learning and Teaching Strategies			
Strategies	Quizzes		
	Reports		
	Homework		
	Discussion and solving exercises within the lecture, student interaction.		
Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	4
Total SWL (h/sem)	125		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	10% (10)	Continuous	LO #1, #2 #3
	Assignments-class	2	10% (10)	Continuous	LO #4, #5
	Assignments-homework	2	10% (10)	Continuous	All
	Report	1	10% (10)	Continuous	All
Summative	Midterm Exam	2hr	10% (10)	7	All

assessment	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction to Agricultural Tractors: Definition, Classification, and Power Sources Used on Farms, Agricultural Tractor Engines and Power Sources.
Week 2	Engine Operation Mechanism: Four-Stroke and Two-Stroke Cycles
Week 3	Power Transmission and Drive Systems in Agricultural Tractors
Week 4	Ground Engagement Systems, Hydraulic System, and Power Take-Off (PTO) Shaft
Week 5	Primary Soil Preparation Equipment
Week 6	Secondary and Specialized Soil Preparation Equipment
Week 7	Seeding Equipment
Week 8	Planting and Transplanting Equipment
Week 9	Fertilization Equipment
Week 10	Sprinkler Irrigation Equipment and Pumps
Week 11	Drip Irrigation Equipment
Week 12	Weed, Pest and Fire Control Equipment
Week 13	Grain Harvesting and Fruit Picking Equipment
Week 14	Mechanization of animal farm
Week 15	Final Examination

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Components and Assembly of Internal Combustion Engines
Week 2	Training on Operating Agricultural Tractors
Week 3	Timing System and Fuel System
Week 4	Cooling System and Lubrication System
Week 5	Field Training on Equipment Usage
Week 6	Field Training on Equipment Usage
Week 7	Field Training on Equipment Usage
Week 8	Field Training on Equipment Usage
Week 9	Field Training on Equipment Usage
Week 10	Field Training on Equipment Usage

Week11	Field Training on Equipment Usage
Week12	Field Training on Equipment Usage
Week13	Field Training on Equipment Usage
Week14	Field Training on Equipment Usage
Week15	Final Examination

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	- Agricultural Machinery and Equipment, authored by Dr. Yassin Hashim Al-Tahan and Dr. Mohammed Jasim Al-Naama. Mechanization of animal farm, authored by Dr. Mohammed Jasim Al-Naama	Yes
Recommended Texts	- CIGR Handbook of Agricultural Engineering. Vol., 1, 2, 3, 4, 5. American Society of Agricultural Engineers. USA	BNO
Websites	https://asabe.org/ https://www.fao.org/home/ar	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	راسب قيد المعالجة	(45-49)	More work required but credit awarded
	F Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

[illegible]

Relation with other Modules

1

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	(Scientific Structural Competence) (Analytical Reading & ESP Terminology) (Translation Accuracy) (Critical Communication & Fluency)II
Module Learning Outcomes LOs	I The student should be able to: LO#1: Demonstrate grammatical accuracy by using advanced verb aspects (Progressive & Perfect) and Passive Voice to describe agricultural processes and scientific experiments effectively. LO#2: Analyze specialized agricultural and literary texts to identify main ideas, deduce the meaning of technical terms within context, and deconstruct complex sentence structures. LO#3: Apply translation techniques to accurately transfer scientific concepts and texts from English into Arabic, maintaining terminological precision and appropriate scientific style. LO#4: Engage in critical discussions and debates regarding cultural and controversial topics, demonstrating the ability to articulate opinions and evaluate arguments confidently.
Indicative Contents	Indicative content includes the following. <u>Theoretical</u> Advanced Grammar & Diagrams: Progressive and Perfect Tenses, Passive Voice, and Morphology. ESP Reading: Analysis of specialized agricultural texts and scientific reports. Translation: English-to-Arabic translation of scientific and geographical concepts. Oral Skills & Culture: Debates, cultural discussions, and media analysis to enhance fluency. Total hrs = 32 = SSWL - (Exam hrs) = 32-2= 30 (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Show examples for writing scientific reports in the correct formats.

Student Workload (SWL)			
Structured SWL (h/sem)	32	Structured SWL (h/w)	2
Unstructured SWL (h/sem)	18	Unstructured SWL (h/w)	2
Total SWL (h/sem)	50		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 11	LO#1 and LO#2
	Assignments	2	22% (10)	2 and 13	LO#1 and LO#3
	Projects / Lab.	2	2	2	2
	Report	1	10% (10)	14	LO#1, LO#2 and LO#4
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO#1, LO#2 and LO#3
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Continuous Aspect & Verb Types
Week 2	The Perfect Aspect
Week 3	Scientific Voice (Passive)
Week 4	Logical Connectives & Cohesion
Week 5	Terminology & First Reading
Week 6	Deep Analysis

MODULE DESCRIPTION FORM

Module Information			
Module Title	FOREST TREES TAXONOMY		Module Delivery
Module Type	Core		Theory ☐ Lecture Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FTT3540		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	3	Semester of Delivery	
Administering Department	FORE1964	College	AGFO1964
Module Leader	Sumod hussain ali	e-mail	sumod_husain@uomosul.edu.iq
	Assistant Professor		Ph.D.
Module Tutor	Haees Sayel Jarjes	e-mail	Haees_sayel@uomosul.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/02/2026	Version Number	1.0

Relation with other Modules			
Prerequisite module	BO1070	Semester	1
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1) The student has a deep understanding of the fundamentals of cultural classification, a brief history of the science of classification, and the stages of civilization. 2) The student is familiar with the vegetative and reproductive parts of the tree. 3) Preparing cadres capable of identifying methods for identifying, afforestation, and classifying forests. 4) The student is often familiar with forest tree species according to international standards for plant tolerance.

	5) The student has a broad knowledge of the major and major taxonomic ranks. 6) The student is familiar with dense forest types, including bare and covered, local and introduced forests. 7) Selecting a range of emerging tree species for small-scale conditions. 8) Knowing how to use clear classification to solve problems arising from similarity in appearance and to identify and distinguish tree species based on their commercial compounds.
Module Learning Outcomes	The student will be able to define the basic principles and foundations of forest tree classification. The student will be able to distinguish among different forest tree species based on their vegetative and reproductive characteristics. The student will be able to identify tree species using diagnostic keys and classification methods. The student will be able to classify tree species according to the recognized taxonomic ranks. The student will be able to apply tree identification and diagnostic methods practically using morphological characteristics. The student will be able to collect and preserve plant specimens from different environments using scientific methods. The student will be able to analyze the similarities and differences among tree species for the purpose of their identification and differentiation. The student will be able to prepare scientific reports on the results of activities and practical experiments related to forest tree classification.
Indicative Contents	Indicative content includes the following. Im laforestation based on knowledge of deciduous and evergreen trees.

Learning and Teaching Strategies	
Strategies	- Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting - Assigning students to collect and preserve models from various environments - Assigning group work to uncover leadership skills - Assigning tasks and reporting for each experiment

Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	7
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	6
Total SWL (h/sem)	125		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	A1 Learn the principles and foundations of plant taxonomy
Week 2	A2 Understands the objectives of taxonomy and some taxonomy terms. A4 Understands the stages and eras through which taxonomy has passed.
Week 3	A6 Understands the historical background of plant taxonomy
Week 4	E3 Identify the foundations of plant evolution and the basic trends of evolution

Week 5	A3 Defines major and minor taxonomic ranks.
Week 6	B1 Uses correct scientific names
Week 7	Exam 1
Week 8	A5 Choose one of the modern classification systems.
Week 9	C1 explains the most important diagnostic methods used.
Week 10	C2 suggests classification traits and clues.
Week 11	D1 leads discussion sessions on the most important traits used in plant classification.
Week 12	E1 Justifies the importance of using chemical classification and by-products.
Week 13	E2 Defines the appropriate classification for the plant kingdom.
Week 14	A7 Identify the most important families of dicotyledons. A23 Some angiosperm families are recognized.
Week 15	Exam 2 Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Lab 1: A9 Introduction to plant identification sources B2 How to collect, dry, and load plant specimens into the herbarium - Use the necessary tools to collect data
Week 2	Lab 2: A10: Identify leaves - Definition of a leaf - Leaf structure - Understand the arrangement of leaves on the stem - B3: Use and view models and diagrams of simple and compound leaves and the arrangement of leaves on the stem
Week 3	Lab 3: A12- Identify leaves - Leaf types based on leaf blade shape. B4- Identify leaf types based on leaf blade edge. C3- Experiment with models and diagrams of leaf blade and leaf blade edge shapes.
Week 4	Lab 4: C4: Sees leaf veining - leaf surface characteristics B5: Apply and observe models and diagrams of leaf veining, its types, and leaf surface characteristics
Week 5	Lab 5: A13 Identify the flower - Flower structure C6 - Draw and show symmetry in the flower - Flower arrangement
Week 6	Lab 6: A14 Recognizes indeterminate inflorescences - circumscribed inflorescences - Familiarizes with methods of studying floral quadrature
Week 7	Lab 7: Exam.1

Week 8	A15 Identify fruits - Types of fruits - Other characteristics that help in classification - Branches - Bark
Week 9	A16 Identify plant identification methods - Familiarize yourself with plant keys - Observe forest tree species on field trips
Week 10	A17 recognizes some families with seeds - Cycads - Ginkgoaceae - Taxus - Taxodium - Pine family
Week 11	A18 It rots on the family of gymnosperms - Field observation - to identify the types of trees belonging to the gymnosperm family
Week 12	A19: Identify the group of inflorescence-bearing catkins - Familiar with the Willow family - Walnut family -
Week 13	A20 Familiar with the beech family - the mulberry family - C7 Conducts a field visit
Week 14	A22 Learn about the Rosaceae family - the Butterfly family - the Acacia family
Week 15	Exam 2

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Forest Tree Classification Book - Daoud, 1979 - University of Mosul	Yes
Recommended Texts	1-Seed Plant Classification Book - Mansour Al-Kateb 2000 2-Field visits to forests and parks	No
Websites	www.forest.plamt.	

Grading Scheme مخطط الدرجات			
Group	Grade	Marks %	Definition
Success Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	(45-49)	More work required but credit awarded
	F Fail	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.			

MODULE DESCRIPTION FORM



Module Information					
Module Title	SOIL and WATER SUITABILITY		Module Delivery		
Module Type	Basic learning activities		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Code	SOWS227				
ECTS Credits	4				
SWL (hr/sem)	125				
Module Level	2	Semester of Delivery			
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGECE1979, AETT1979, AGME1986		College	AGFO1964	
Module Leader	Prof. Dr. Alaa Mohammed Abdullah Prof. Dr. Omar Diaa Mohammed Prof. Dr. Asmaa Mohammed Adel Assi. Pro. Dr. Maysar Mohammed Aziz Assistant Professor Nawfal Issa Muhaimid Prof. Dr. Sumaya Khalaf Badiwi Assi. Pro. Dr. Firas Kadhim Dawood Al-Jubouri Assi. Pro. Dr. Khalid Anwar Khalid Al-Khalid Assi. Pro. Dr. Talal Saeed Hamid Prof. Dr. Muzahim Saeed Al-Bak		e-mail	ala.mohammed58@uomosul.edu.iq dr.omaralmallah@uomosul.edu.iq asmaama@uomosul.edu.iq moyassar_aziz@uomosul.edu.iq nofelemh@uomosul.edu.iq dr.sumyia_khalf@uomosul.edu.iq firasaljuboouri@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq muzahim_saeed@uomosul	
L	IM	L	PhD	L L Qualification	Lecturer
Module Tutor	Dr. Rana Saadallah Aziz Asst. Lecturer Noor Jamal Hussein		e-mail	E-mail: rana .saadallah1979@uomosul.edu.iq	

Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	1/2/2026	Version Number	1.0

Relation with other Modules			
~			
Prerequisite module		Semester	1
Co-requisites module		Semester	2

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. To enable the student to understand soil composition, formation, and development. 2. To familiarize the student with the chemical, physical, and biological properties suitable for plant growth. 3. 3. To introduce the student to some soil problems, such as salinity and alkalinity, and how to address them to make the soil and water suitable. 4. To enable the student to understand how to take a soil sample. 5. To enable the student to estimate the dry weight of a soil sample. 6. To enable the student to understand the chemical properties of soil. 7. To enhance the student's understanding of the importance of organic matter and soil microorganisms, and their relationship to soil and water.
Module Learning Outcomes	By the end of the course, the student will be able to: LO#1: Understand soil science and how soil originated and developed. LO#2: Explain the chemical, physical, and biological properties of soil and how soil and water are suited to plant growth. LO#3: Identify soil problems and their solutions. LO#4: Distinguish between suitable and unsuitable soils. LO#5: Understand the most important estimations for soil and water samples. LO#6: Analyze soil and water suitable for plant growth.
Indicative Contents	The instructional content includes: Enriching the student's knowledge regarding conducting and utilizing soil and water experiments, as well as learning how to measure soil nutrients, how to make soil suitable for plant growth, methods of conducting scientific experiments, and finding appropriate solutions to soil problems. Total hrs = = SSWL - (Exam hrs) = 47-2 = 28 hrs (Time table hrs x 15 weeks)
EE#DS	Indicative content includes the following: <u>Introduction to Soil Physics</u> ~ ~ ~ ~ ~ . [SSWL=30 hrs] Soil Survey and classification - [SSWL=20 hrs] Revision problem classes [SSWL=6 hrs]

	Fundamentals [SSWL=44 hrs] Total hrs = 105 = SSWL - (Exam hrs) = 109 - 4 = 105 hr (Time table hrs x 15 weeks)
--	--

Learning and Teaching Strategies	
Strategies	1. (Interactive Lectures) 2. (Project-Based Learning) 3. (Case Studies) 4. (Workshops and Hands-On Training) 5. (Group Discussions and Presentations)

Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	4
Total SWL (h/sem)	125		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Surprise tests	2	10% (10)	5 and 10	LO#2
	Assignments	2	10% (10)	2 and 12	LO#3
	Practical		10% (10)	Continuous	All
	Reports	1	10% (10)	13	LO#5
Summative assessment	Midterm Exam	2hr	10% (10)	7	
	Final Exam	3hr	50% (50)	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Fundamentals and general concepts of soil
Week 2	Soil texture and its suitability for plant growth
Week 3	Soil structure and its suitability for plant growth
Week 4	Soil air and its relationship with plant growth
Week 5	Soil temperature and its relationship with plant growth
Week 6	Soil depth and its suitability for plant growth
Week 7	Midterm examination
Week 8	Soil reaction (pH) and its relationship with plant growth
Week 9	Soil salinity and its suitability for plant growth
Week 10	Cation exchange capacity and its suitability
Week 11	Soil organic matter and its relationship with plant growth
Week 12	Field trip to identify soil field characteristics and suitability
Week 13	Water composition and its physical and chemical properties
Week 14	Soil water types – water movement – field measurements
Week 15	Physiological role of water and its suitability for plant growth
Week 16	Exam preparation

Delivery Plan (Weekly Seminar. Syllabus)	
	Material Covered
Week 1	Introduction to laboratory equipment and safety rules
Week 2	Soil sampling and preparation for analysis
Week 3	Determination of soil moisture content
Week 4	Particle size analysis
Week 5	Determination of soil saturation capacity
Week 6	Determination of pH of soil and water
Week 7	Midterm examination
Week 8	Determination of soil bulk density
Week 9	Determination of soil and water salinity

Week 10	Determination of carbonates and bicarbonates
Week 11	Determination of Ca, Mg, Na, and K
Week 12	Field trip
Week 13	Determination of soil organic matter
Week 14	Determination of cation exchange capacity
Week 15	Determination of water hardness

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts		Yes
Recommended Texts	Principles of Soil Science – The Relationship Between Soil, Water, and Plants – Fertilizers and Soil Fertility – Soil and Water Analysis	No
Websites		

Grading Scheme				
Group	Grade		Marks %	Definition
Success Group (50 - 100)	A - Excellent	privilege	90 - 100	Outstanding Performance
	B - Very Good	Very Good	80 - 89	Above average with some errors
	C Good	Good	70 - 79	Sound work with notable errors
	D Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX Fail	Fail (in process)	(45-49)	More work required but credit awarded
	F Fail	Fail	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

[illegible]

Relation with other Modules			
Frequentist module	None	Somehow	
Bayesian module	None	Somehow	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Designing a farm enterprise as a living real individual 2. Developing a sense of responsibility towards the family and the rural community 3. Identifying positive attitudes of rural people towards agriculture, use of agro. and non-agro-based technologies 4. Improving the marketing aspects of farm production using modern technologies.
Module Learning Outcomes LOs	The student should be able to: (LO1) Apply the general concepts of transferring agricultural engineering technologies.

مخرجات التعلم المتوقعة الدراسية	LEAD: Determine appropriate means to reduce barriers to their use of work, development, and adoption of agricultural engineering technologies. LEAD: Support adoption of technology for agricultural engineering projects. LEAD: Bear certain responsibilities in the areas of transferring agricultural engineering technologies.
Indicative Contents المحتوى التعليمي	Indicative content includes the following: Theoretical Developing the correct management skills to transfer and adopt agricultural technologies in the most specific and identifying appropriate means to guide the rural community to adopt modern and specialized technologies in the field of agricultural engineering, as well as identifying the types of technologies and how to employ them in developing work in the field of agricultural engineering sciences and methods of transferring them to society towards high production and quality. Practical Application The most important modern technologies in the field of agricultural engineering will be addressed, the most important means for their use, its spread will be discussed, and training will be put forward for adopting these technologies.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Interactive lecture, brainstorming 2. Dialogue and discussion 3. Assigning reports 4. Quizzes 5. Some strategies for writing scientific reports in the correct format.

Student Workload (SWL) العمل الدراسي لطلاب المستوى 111 أ			
Structured SWL (h/week)	33	Structured SWL (h/week)	4
Unstructured SWL (h/week)	43	Unstructured SWL (h/week)	4
Total SWL (h/week)	110		

Module Evaluation					
		Time/Number	Weight (Mark)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	20% (10)	4 and 10	LO1 and LO2
	Assignments	3	20% (10)	2 and 10	LO1 and LO3
	Project/Practical	1	10% (10)	8, 9 and 12	NA
	Report	1	20% (10)	10	LO1, LO2 and LO3
Summative assessment	Mid-term Exam	1x	20% (10)	7	LO1, LO2 and LO3
	Final Exam	1x	50% (50)	12	NA
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) البرنامج الأسبوعي النظري	
	Material Covered
Week 1	Introduction to agricultural technology and its history/evolution
Week 2	Factors of production: Land, Labor, and Capital
Week 3	Factors that determine agricultural output and input integration
Week 4	Output, quality, and aspects of change
Week 5	Analysis: Growth, output
Week 6	Exercises: research thinking and abstract methods
Week 7	Mid-term Exam
Week 8	Transfer of agricultural technology: concept and methods
Week 9	Challenges facing the transfer of agricultural technology
Week 10	Using information and media in agricultural extension
Week 11	Introducing and adapting to modern agricultural technologies
Week 12	Extension for post-harvest loss reduction and marketing transfer programs
Week 13	Coordination between agricultural extension for women and the local community
Week 14	Application of smart technologies in agricultural extension
Week 15	Tools for measuring effectiveness in technology transfer and extension
Week 16	Preparatory work before the final exam

Delivery Plan (Weekly Practical Syllabus)	
	Material Covered
Week 1	Vertical Farming: A technique that uses vertical spaces to grow crops, increasing productivity and reducing land use.
Week 2	Smart Irrigation: Advanced irrigation systems that rely on sensors to monitor soil moisture and distribute water efficiently.
Week 3	Precision Agriculture: The use of technology to analyze agricultural data and improve crop management.
Week 4	Greenhouses: Creating protected environments for enhanced crop growth and shield them from harsh weather conditions.
Week 5	Hydroponics: Growing plants in a water solution instead of soil, which reduces water use.

Week 6	Genetic Engineering: The use of genetic engineering to develop disease-resistant and drought-tolerant crops.
Week 7	Mobile Applications: Tools that help farmers manage their farms, such as tracking crops and weather.
Week 8	Agricultural Robots: The use of robots to perform tasks such as planting and harvesting.
Week 9	Sensor-Based Technology: Used to monitor crop health and track changes in the agricultural environment.
Week 10	Biological Control: The use of living organisms to control pests and diseases instead of chemical pesticides.
Week 11	Artificial Intelligence (AI): The application of AI technologies to analyze agricultural data and improve production.
Week 12	Nanotechnology: The use of nanomaterials to improve soil quality and create fertilizers with better effects.
Week 13	Geographic Information Systems (GIS): Used to analyze geographic data and improve agricultural land planning.
Week 14	Organic Farming: Agricultural techniques that rely on the use of natural materials instead of chemicals.
Week 15	Drone: Used for monitoring crops, collecting data, and spraying pesticides.

Learning and Teaching Resources		
موارد التعلم والتعليم		
	Text	Available in the library?
Required Texts	R.A.	
Recommended Texts	- Al-Sayid, Muhammad Muhammad Umar (2024), Agricultural Students Reference, Arab Science House for Printing and Publishing, Beirut. - Ghannouch, Ali Ahmed, The role and importance of the problems of transferring agricultural technologies from the point of view of agricultural employees and farmers of agricultural extension in Sudan, Sudanese Journal, College of Agriculture and Forestry, University of Khartoum, 2022. - Al-Sayid, Muhammad Muhammad (2023), The importance of agricultural extension for farmers, agricultural technologies and its role in the Sudanese economy in the Sudanese Journal of Khartoum University, Sudan Science, College of Agriculture and Forestry, University of Khartoum.	Yes
Worked		

Grading Scheme

Group	Grade	Marks %	Description
Normal Group (CO - 100)	A - Excellent	90 - 100	Outstanding achievement
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with a stable error
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Satisfactory	50 - 59	Most marks may have errors
Fail Group (0 - 49)	F - Fail	(45-49)	More work required but could succeed
	F - Fail	(0-44)	Considerable amount of work required

Note: Marks obtained above 49% will be rounded to the higher or lower full mark. For example, a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy ACP to consider "how close to" so the only adjustment to marks assigned by the original marker(s) will be the automatic rounding outlined above.

Teacher of Theory / Amna Yasmin Hussain AT

Chairman of the Scientific Committee: Muhammad Yasmin AT

Head of the Dept. of Forestry Sciences: Dr. Farooq Hussain AT



Delivery Plan (Outline) (2021-2022)

Material Covered

Week 13	Lab 13: Introduction to Internet and web browsers, local computer networks, DNS, HTTP, Content of internet and its applications, connecting to the internet, world wide web, web browsing software, search engines, understanding URL, Domain Name, IP Address
Week 14	Lab 14: Communication and E-mails, Basics of electronic mail, getting an email account, sending and receiving e-mails, attaching pdf e-mails, using e-mails, and document collaboration
Week 15	Lab 15: Computer Troubleshooting: Identifying and solving common hardware and software problems that computer users encounter. Basic troubleshooting techniques and tools for diagnosing and resolving issues.

Learning and Teaching Resources

	Text	Available in the library?
Required Texts	الهندسة المعمارية لبرامج الحاسوب (الكتاب العربي) 2021	Yes
Recommended Texts	N/A	
References	https://www.cisco.com/it/learning-center/learning-paths/it23 https://www.gcf.org/en/courses/courses/1125 https://www.pearsoncmg.com/api/v1/print/it/it23/it23001	

Grading Scheme

Grade	Grade	Grade %	Definition
Excellent (90 - 100)	A+ Exemplary	91 - 100	Outstanding Performance
	A Very Good	86 - 90	Good coverage with some errors
	B Good	76 - 85	Good work with notable errors
	C Satisfactory	61 - 75	Fair but with major shortcomings
	D Sufficient	51 - 60	Work meets minimum criteria
Fail Grade (0% - 50)	F6 - Fail	45 - 50	More work is required but good toward it
	F7 - Fail	0 - 44	Unsatisfactory impact of work required

Note: After the final grade above is given it will be rounded to the higher or lower 5% mark (for example, a mark of 84 would be rounded to 85, whereas a mark of 86 or a 88 would be 84). The University has a policy NOT to combine "late projects" as the only adjustment to marks applied by the original markers within the university marking system above.

Teacher of History - Fathi Hassan Saeed

Chairman of the Scientific Committee - Mohamed Younis Alai

Head of the Dept. of History Sciences II - Ahmed Hassan Ali



Student Worksheet (SW1)

Structural SWL (Hours)	40	Structural SWL (Hrs)	8
Unstructured SWL (Hours)	28	Unstructured SWL (Hrs)	1.33
Total SWL (Hours)	68		

Module Evaluation

		Final Number	Weight (Marks)	Week Star	Feedback Learning Outcomes
Formative assessment	Quizzes	7	12% (28)	1, 2, 7	100%
	Assignments	2	10% (20)	3 and 11	100%, 80
	Progress / Lab	3	10% (30)	8 and 12	100%, 80
	Report	3	12% (36)	14	100%, 80
Summative assessment	Written Exam	20	10% (30)	7	100%, 80
	Final Exam	20	10% (30)	9	80
Total assessment			100% (100 Marks)		

Delivery Plan (Assessable by Object)

	Material Covered
Week 1	Lab 1: Introduction to Computer Concepts of Hardware and Software, with their components; Concept of Computing, Data, and Information; Applications of Information Electronics and Communication Technology (ICT); Converting from natural language and graphics to CPU.
Week 2	Lab 2: Computer Components: Computer Peripherals, Hardware Parts, Memory Types, Basic CPU Components, Peripheral Ports, Relative Locations, Remote Computer (Keyboard and Mouse).
Week 3	Lab 3: Operating System and Graphical User Interface GUI, Managing Systems, Basics of Common Operating Systems, The user interface, Using Mouse Techniques, Use of Common icons, Status Bar, using Menu and Menu selection, Concept of folders and Directories, Opening and closing of different Windows, Creating Short cuts.
Week 4	Lab 4: Word Processing: Word Processing Basics, Opening and Closing applications, File Creation and Manipulation, Formatting of text, Table handling, Spell check, Language setting, and Font styles.
Week 5	Lab 5: Getting Documents: Editing an agricultural project also using Word, using all the project's commands and instructions, and with practical application.
Week 6	Lab 6: Getting started with Excel: Preparing a Worksheet, Working with formulas and Functions, Printing with Charts.
Week 7	Lab 7: Lab 7
Week 8	Lab 8: Spread sheet: Basics of Spreadsheets, Navigation of Cells, Formulas and Functions, Editing of Spread Sheet, Printing of spread sheet.
Week 9	Lab 9: Data Project in Statistical Analysis: Collecting Agricultural Data, Organizing Data in Form, Basic Functions in Statistical Analysis, Creating Graphs and Charts, Data in Real Statistical Analysis, Independently Preparing Results.
Week 10	Lab 10: Final Data Project of Analyzing Agricultural Data Using Excel.
Week 11	Lab 11: Presentation Software: Basics of presentation software, Creating Presentation, Animation and Presentation of Slides, Slide show, Using advanced presentation features.
Week 12	Lab 12: Create a presentation of an agricultural project also using PowerPoint, all the project's commands and instructions, and with practical application.

Module Aims, Learning Outcomes and Resource Contents	
Module Objectives	1. Empowering students in the field of computers, including computer applications, operating systems, and internet software, as well as networking. 2. Teaching students how to collect and analyse data using basic or statistical analysis software, creating the graphs with word processors, and developing presentations. 3. Empowering students' online research skills and how to use available resources for specific research. 4. Utilising computer tools to enhance communication and collaboration skills among students, such as using email and online meeting platforms.
Module Learning Outcomes	LO1: Identify and explain the components of a computer and their main functions. LO2: Analyse digital data using basic and present findings through well-structured documents with presentations. LO3: Explain the importance of data research when conducting scientific research. LO4: Students should be able to use computer tools to enhance communication with peers such as email and online meeting platforms.
Module Contents	Module Overview (Introduction to the module) An introduction to the computer and its components, with basic operating systems and their interfaces, and its storage, network, and security. Lesson on the practical use of software for data analysis (with statistical measurements), including understanding techniques for making graphs and presentations (PowerPoint). The computer also includes an introduction to the Internet, web browsers, networks, and the basics of e-mail, as well as methods for downloading computer games and applications (download). Total hrs = 47 x 100min / (Lecture hrs) = 47 / 2 = 23.5 hrs (Total table hrs x 23 weeks)

Learning and Teaching Strategies	
Strategies	• Practical Learning: Provide students with regular lab sessions where they can apply their new knowledge directly. Practical activities such as installing documents, analysing data using Excel, and understanding common computer problems. Advise large self-reliance and independent learning. • Project Based Learning: Assign group projects where students need apply the tools learned (e.g., data trend, presentations, tables and word processing) to solve real-world problems. For instance, they can analyse agricultural data and present their findings. This promotes collaboration, critical thinking, and problem solving. • Student Learning: Encourage independent learning with online resources and platforms. Use e-learning tools, such as video tutorials, games, and discussion boards, to provide additional support outside class. Students can learn at their own pace while reflecting what they learn in the classroom. • Discussion and Peer Learning: Regularly group discussions and peer review sessions for students. When possible, encourage students to present their solutions or projects to the class or groups with other teachers. This fosters cooperation, critical thinking, and communication skills.

MODULE DESCRIPTION FORM

Module Information			
Module Title	CHEMISTRY (Semi IV)		Module Delivery
Module Type	1	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	CH00101		
ECTS Credit	4		
SWs / ECTS	120		
Module Level	1	Semester of Delivery	
Administering Department	PHYSICS	College	ADP0106
Module Leader	Puan Sahyul Jalil Umiyati Mohd Yusoff Azman Mohd Yusoff Mohd Yusoff Mohd Yusoff Nurul Huda Mohd Yusoff Yati Mohd Yusoff Umiyati Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff	e-mail	Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff Nurul Huda Mohd Yusoff
Module Leader's Area Title	Professor	Module Leader's Qualification	
Module Tutor	Nurul Huda Mohd Yusoff	e-mail	Nurul Huda Mohd Yusoff
Peer Reviewer Name	Nurul Huda Mohd Yusoff	e-mail	Nurul Huda Mohd Yusoff
Staff/Committee Approval Date		Review Number	1.0

Selection with other modules			
Prerequisite module	Name	Duration	
Corequisite module	Name	Duration	

Module Name, Learning Outcomes and Indicative Contents

Module Objectives	1. To develop the Agricultural student's ability to imagine projections and their models. 2. Extending their knowledge in engineering drawing to complete assignments. 3. The course deals with the theory of Orthographic Projection and the basic subject of mechanical drawing. 4. To teach students engineering drawing using the AutoCAD software, which includes both theoretical lectures and lab.
Module Learning Outcomes	L001: Identifying all the engineering characteristics of an object or a process in a clear manner. L002: Interpreting such code in engineering drawing and how to use them correctly. L003: Understand and apply the laws of engineering projection. L004: Construct projections and isometries for each object with figure and perspective drawing.
Indicative Contents	Indicative content includes the following: Part A: Engineering Drawing Basics and Tools • Introduction and Definition of Engineering Drawing • Engineering Drawing Tools and Their Uses • Explanation of Third-Order System, Information Fields, and Letter Writing • Types of Drawing • Basic Geometric Constructions: Introduction to different types of lines (construction, hidden, center lines) and their symbols, use in drawing, Representing basic geometric operations such as: measuring, dividing, and halving. • First and Second-Order Drawing and Drawing and Representation engineering drawings, including their applications. (20 hrs.) • Classroom: Practical Applications of the basic Engineering Drawing and their engineering drawing techniques (lines, arcs, short cut keys) (4 hrs.) Part B: Engineering Projections and Operations • Engineering Projections: Understanding projection techniques, especially orthographic projections, learning how to project an object's views from different angles. • First-Order System: Assignment covering the topics learned in Part A and initial projection skills. • Describing the Third Projection Based on Two Projections: Skill development in visualizing and drawing the third projection when given two views of an object. (12 hrs.) • Classroom: Practical Applications of Describing the Third Projection: Applying concepts learned to interpret drawings. (4 hrs.) Part C: Advanced Drawing Techniques and CAD Software • Drawing Engineering Projections (continued): Introduction to different drawing techniques, drawing objects in isometric view for isometric 3D representation. • Review of Isometric Engineering: Reviewing the principles of isometric drawing and its applications in technical drawings. Establishing the connection between isometric drawings and orthographic projections. (8 hrs.) • Introduction to Computer-Aided Drawing (CAD): Overview of computer-aided drawing, explaining its importance in modern engineering. Introduction to software tools like AutoCAD 2D/3D Solutions, including their features, capabilities, and versions. • AutoCAD Interface and Menu Commands: Learning the basic interface of AutoCAD, including the drawing and modification menu. Exploration of key commands such as: line, • Drawing Simple Geometric Objects Using AutoCAD: Hands-on practice with AutoCAD to draw basic geometric shapes. (12 hrs.)

Learning and Teaching Strategies

Strategies	1. Lecture-based Learning:
	Explaining concepts and demonstrating basic techniques and software in real time while students to observe the process before applying it.
	2. Hands-on Practice:
	Lab Sessions: Providing students with hands-on experience using drawing tools and software like AutoCAD or SolidWorks to develop their skills. Guided Exercises: Offering step-by-step instructions on complex tasks such as drawing technical views or projections.
	3. Interactive Class Discussions:
	Question and Answer Sessions: Actively engage students in discussions where they can ask questions and clarify doubts about technical concepts or software use.
	4. Assessment and Feedback:
	Practical Assessments: Assigning projects requiring students to apply the concepts they've learned, like creating detailed engineering drawings using manual and software-based techniques.

Student Workload (SWL)

Structured SWL (H/sem)	05	Structured SWL (H/yr)	10
Unstructured SWL (H/sem)	07	Unstructured SWL (H/yr)	14
Total SWL (H/sem)	17		

Marks Evaluation

Assessment		Time/Duration	Weight (Marks)	Max. Score	Assessment Learning Outcomes
Formative assessment	Quizzes	3	10% (10)	7	
	Assignments	10	20% (20)	14 (14)	
	Projects / Labs	5	50% (50)	Continous	04
	Reports	5	50% (50)	—	—
Summative assessment	Midsem Exam	20	25% (25)	7	02 (01, 02)
	Final Exam	20	50% (50)	14	01
Total assessment			100% (100 Marks)		

Delivery Plan (Weeks, syllabus)

Syllabus Covered

Week 1	Introduction and definition of engineering drawing
Week 2	Engineering drawing tools and their uses, knowing to print of docx, pptx, Drawing board layout
Week 3	Explanation of sheet dimensions, information table, and letter writing

Delivery Plan (Weekly Schedule)	
	Material Covered
Week 4	Types of lines, their applications, and basic geometric operations.
Week 5	Arcs and tangents
Week 6	Consolidate practical applications of previous topics
Week 7	Engineering standards
Week 8	Measure lines
Week 9	Developing the third projection based on the other two
Week 10	Consolidate practical applications of developing the third projection
Week 11	Drawing engineering perspective (isometric)
Week 12	Review of isometric engineering perspective and its relation to developing the third projection
Week 13	Introduction to the importance of computer-aided drawing and the types of software used for 2D/3D modelling, such as AutoCAD and SolidWorks, including their basic menu and commands
Week 14	Introduction to the AutoCAD interface and basic commands, drawing practice and exercises, modification practice and exercises
Week 15	Drawing simple geometric shapes using AutoCAD
Week 16	Preparatory week before the final exam

Delivery Plan (Weekly Practical Schedule)	
	Material Covered
Week 1	Familiarization with software drawing tools, including pens, and setting up the drawing board layout.
Week 2	Practice drawing views according to standard dimensions, setting up an information table, and using typical settings.
Week 3	Identify different line types and execute basic geometric operations (e.g., drawing straight lines, circles).
Week 4	Finished drawing arcs and tangents using drawing tools
Week 5	Consolidate skills by solving featured techniques (lines, arcs, tangents) in a project or assignment.
Week 6	Start drawing orthographic projections of simple objects, projecting different views.
Week 7	Assessment based on skills acquired in previous weeks, focusing on projections, lines, and geometric operations.
Week 8	Isometric and draw the third projection based on two given views.
Week 9	Work on exercises that reinforce the ability to develop the third projection, moving from two-viewed objects.
Week 10	Learn to draw isometric projections, simplifying drawing axis alignment and scaling.
Week 11	Review and reinforce software drawing techniques and their connection to orthographic projections.
Week 12	Introduction to AutoCAD and SolidWorks, learning the basic interface, creating drawing and modification features.

Week 19	Prepare using the AutoCAD interface. Drawing orthographic projections (e.g., floor, section) modification commands (e.g., trim, extend)
Week 20	Create simple geometric drawings using AutoCAD, including 3D shapes (the sphere), rectangles, and circles
Week 21	Work on exercises that reinforce the ability to Create simple geometric drawings using AutoCAD

Learning and Teaching Resources		
موارد التعلم والتعليم		
	Text	Available in the library?
Required Texts	Engineering Drawing, 11th Edition, 2019	Yes
Recommended Texts	Technical Drawing, 11th Edition, 2019	
Website		

Grading Scheme			
Group	Grade	Mark %	Description
Success Grade (50-100)	A+ - Excellent	90-100	Outstanding Performance
	A - Very Good	80-89	Above average with some errors
	B - Good	70-79	Average with minor errors
	C - Satisfactory	60-69	Fair but with major shortcomings
	D - Satisfactory	50-59	Weak results with many errors
Fail Group (0-49)	FE - Fail	40-49	More work is required but credit awarded
	F - Fail	0-39	Graspable amount of work missed
Remarks: Marks are given above in percent. If a student awarded the highest or lowest mark (for example, a mark of 98.5 will be rounded to 99, reflecting a mark of 94.5 will be rounded to 94. The university has a policy NOT to compute "averages" as the sole adjustment to marks awarded by the original marker. It will be the instructor's rounding method alone.			

Teacher of Theory: Dr. Ahmad Al-Harbi



Chairman of the Scientific Committee: Dr. Ahmad Al-Harbi



Head of the Dept. of Technical Sciences: Dr. Ahmad Al-Harbi



RESEARCH ON ENVIRONMENTAL RISK

[illegible]

Belonging with other students المشاركة مع الطلبة الآخرين			
Doing good deeds	Yes	Yes	Yes
Dis-regarding results	No	No	No

Module Aims, Learning Outcomes and Indication Contents	
Module Objective	1. Enabling the student to understand and comprehend what is meant by human rights, their scope, and explain the related concepts. 2. Enabling the student to recognize the types of human rights and human rights according to the New Constitution of 2008.

	3. Studying the student to recognize the types and types of governments. 4. Enabling the student to reach about human rights and historical government events and the concept of freedom and the rights of others.
Module Learning Outcomes (LOs)	The student should be able to: (LO1) Understand everything related to human rights, the rights of others, religions, and the concept of democracy. (LO2) Familiar with the types of general human rights and human rights according to the Iraqi Constitution of 2005. (LO3) Know the concept, responsibility, development, human rights, opinion, and the other opinions of the national partners. (LO4) Recognize the freedoms and rights of others.
Indicative Contents	Indicative Content includes the following: <u>Subsential</u> Familiarizing the student with knowledge about the human rights and their types, and their relationship to political development with the nation's pathway, and the concept of human rights and their relations, as well as introducing the student to the concept of governments and their types, and making him familiar with the concept of individual freedom, democracy, and human rights in accordance with the Iraqi Constitution.

Learning and Teaching Strategies	
Strategies	1. Constructive learning, discovery learning 2. Challenge and discussion 3. Assigning projects 4. Quizzes 5. Assigning group work to reach satisfactory stage

Student Workload (SW) عمل الطالب (ساعات أسبوعية)			
Structured SW (h/week)	12	Structured SW (h/w)	2
Unstructured SW (h/week)	18	Unstructured SW (h/w)	3
Total SW (h/week)	30		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Box	Relevant Learning Outcome
Formative assessment	Quizzes	1	20% (20)	1 and 12	(LO1) and (LO2)
	Assignments	2	20% (20)	2 and 13	(LO2) and (LO3)
	Projects / Lab Report	1	30% (30)	14	(LO1), (LO2) and (LO4)
	Midterm Exam	20	30% (30)	7	(LO1), (LO2) and (LO3)
Summative assessment	Final Exam	20	50% (50)	26	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Material Covered	
Week 1	Meaning of human rights
Week 2	Human rights in Islamic civilization
Week 3	Evolution of human rights
Week 4	Work on the UN Declaration of 1948
Week 5	Human rights as international pre-occupation or intervention
Week 6	Human Rights as international responsibility, human rights in the Arab world since 1990
Week 7	Multi-lateral Issues
Week 8	Types of governments
Week 9	Autocratic governments
Week 10	Characteristics of democracy
Week 11	System of democratic governments
Week 12	Indirect democracy
Week 13	Types of rulers
Week 14	Provisions preliminary chapters
Week 15	Types of treaties
Week 16	Preparatory issues before the final years

Learning and Teaching Resources

	Text	Available in the library?
Required Texts	Human rights, written by Huda Ahmad Mustafa Al-Faraj, 2010	Yes
Recommendations of Texts	1. Universal Human Rights between theory and practice, written by Raji Dornalla 2. Human Rights, Origins and Development, written by Maher Issa Al-Husseini and others 3. Human Rights and Public Systems, written by Sameh Mohamed Abdel 4. The Genesis of Human Rights, edited by Layan Hani, translated by Fergal High Hane 5. The Philosophy of Human Rights, written by Ayman Gheit Al-Saidi 6. The Concept of Contemporary Theology, edited by Al-Baladhi Al-Husseini 7. Democracy, written by Charles Filla, translated by Mohamed Al-Faraj 8. Human Democracy and the Problems of Implementation, written by Mohamed Al-Faraj 9. Participatory Development, edited by Said Hani, translated by Fergal High Hane 10. Human Rights, written by a group of authors 11. The Evolution of Human Rights, written by Essam Fathi, translated by Fergal High Hane 12. The Philosophy of Human Rights, written by Ayman Gheit Al-Saidi 13. Human Rights in the Western Heritage and Islamic Heritage, written by Mohamed Al-Faraj and Fergal High Hane	Yes
Websites	1. The United Nations 2. Office of the High Commissioner of United Nations High Commissioner for Human Rights 3. Amnesty International 4. UNHCR 5. International Committee of the Red Cross	

Grading Scheme

Grade	Grade	Mark %	Definition
Satisfactory Grade (50 – 80%)	A – Excellent	80 – 100	Outstanding Performance
	B – Very Good	65 – 80	Strong average with some errors
	C – Good	50 – 65	Sound work with notable errors
	D – Satisfactory	40 – 50	Fair but with major shortcomings
	E – Sufficient	30 – 40	Work meets minimum criteria
Fail Group (0 – 30)	F0 – (0)	(0 – 40)	More work required (not assessed)
	F – Fail	(0 – 40)	Considerable amount of work required

Note: Marks received above 50% but below 54.9 will be rounded up to the higher or lower full mark. For example, a mark of 54.9 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to consider "near-pass fails" so that only achievement to receive awarded by the original marker will be the automatically marking method alone.

Teacher of Theory: Arvind Sharma




Chairman of the Scientific Committee: Mohammod Younis Akil



Head of the Dept. of Physics Sciences: Dr. Samir Hassan Ali



© 2004 Blackwell Publishing Ltd, *Journal of Internal Medicine* 255: 103–110

[illegible]

Relation with other Methods			
العلاقة مع الطرق الأخرى			
Propaganda methods	Name:	Reference:	
Counterpropaganda methods	Name:	Reference:	

Whole-Axis Learning Outcomes and Indicator Contents	
Module Objectives	1. Teaching ability and skills: 4. Comprehensive application of the acquired knowledge

Module Aims, Learning Outcomes and Indicative Contents	
	2. Identify the ethical roles of professional ethics and clarify the ethics of agricultural engineering.
Module Learning Outcomes L.Os	The student should be able to: L.O1) Know general concepts of morality and moral philosophy. L.O2) Learn the concepts of professional ethics and ethical roles in the agricultural engineering profession. L.O3) Apply the laws and regulations related to agricultural engineering projects. L.O4) Real ethical responsibilities in the field of the agricultural engineering profession.
Indicative Contents	Indicative content includes the following: Ethical Ethical and professional ethics, which are moral philosophies, ethical rules in agricultural engineering. It includes identifying ethics in agricultural professional ethics in students to give answers to them. Focus has with the following: Vietnam law on Safety for those taking the course

Learning and Teaching Strategies	
Strategies	1. Interactive lecture, self-learning 2. Dialogue and discussion 3. Grouping method 4. Debate 5. Presentation of examples of professional ethical rules in the field of scientific specialization by students and learned in discussion sessions.

Student Workload (SWL)			
Pre-lecture SWL (Hours)	12	Structure SWL (Hours)	6
Course-related SWL (Hours)	62	Post-lecture SWL (Hours)	6
Total SWL (Hours)	120		

Module Evaluation					
		Exam/Session	Weight/Marked	Week Due	Relevant Learning Outcomes
Formative assessment	Quizzes	1	10% (10)	4 and 11	L.O1 and L.O2
	Assignments	1	10% (10)	2 and 17	L.O2 and L.O4
	Summative	1	10% (10)	20	All
	Report 1	1	10% (10)	14	L.O2, L.O3 and L.O4

Introduction	Mathematics Exam	2h	10% (10h)	7	COM, COM, MATH, COM
assessment	Final Exam	2h	50% (10h)	10	ALL
Total assessment			100% (10h) (20h)		

Activity Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction to professional ethics and its importance in agricultural engineering
Week 2	Basic ethical theories underpinning integrity and why ethics heavily impacts business success
Week 3	The agricultural engineer's commitment to protect public interests (1)
Week 4	Professional interaction with society and the public
Week 5	Assessing ethical risk and ethical impact
Week 6	Factors of agricultural engineering and business
Week 7	Professional Exam
Week 8	Factors of agricultural engineering and business
Week 9	Communication and team formation
Week 10	Compliance with laws and regulations in agricultural engineering
Week 11	Characteristics and essential agricultural properties
Week 12	Combining professional expertise in agricultural engineering
Week 13	Continuing learning and self-development in agricultural science
Week 14	Assessing compliance in an agricultural ethics, standards and code
Week 15	Ethics in agriculture in agricultural engineering
Week 16	Preparatory work before the final exam

Delivery Plan (Weekly Technical Syllabus)

	Material Covered
Week 1	Pesticide use and its impact on the health of farmers and communities
Week 2	Crop price manipulation: the ethics of trade in agriculture
Week 3	Agricultural labour exploitation: workers' rights and working conditions
Week 4	The impact of industrial agriculture on biodiversity in agro-ecosystems
Week 5	Unsustainable agricultural practices: responsibility to future generations
Week 6	Marketing genetically modified products: transparency and ethics
Week 7	Water management in agriculture: the right to water and fair distribution
Week 8	Climate change and agriculture: ethical challenges for farmers
Week 9	Agriculture as promoted animal: a balance between production and protection
Week 10	Agricultural research ethics: the limits of experiments on living organisms
Week 11	Equity distribution of support allocated to farmers and its impact on small projects
Week 12	The impact of agriculture on local communities: livelihoods, social risks and ethical challenges
Week 13	Follow-up: Crop treated as international trade: Farming and its impact on food security
Week 14	Modern technologies in agriculture: are we prepared to face their ethical consequences?
Week 15	Organic agriculture: ethical challenges in production and practice

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	N/A	

Recommended Term	Recommended Group	Yes
Upcoming		

Grading Scheme

Group	Grade	Mark %	Definition
Success Group (90 - 100)	A+ (Excellent)	95 - 100	Outstanding Performance
	A- (Very Good)	90 - 95	Strong average with some errors
	C+ (Good)	75 - 90	Good work with minor errors
	D+ (Satisfactory)	60 - 75	Fair but with some shortcomings
	D- (Sufficient)	50 - 60	Weak results, minimum effort
Fail Group (10 - 49)	FN - Fail	(10-49)	More work required, but could succeed
	F - Fail	(0-49)	Complete lack of work required

Note: Marks that are placed above or below 4.9 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54). The University has a policy 50% or above is "pass" and 49% or below is "fail". It is the responsibility of students to check carefully the original marksheet with the official results available online.

Teacher of Theory: Anne M. Smith



Chairman of the Scientific Committee: Mohammed Khatib Albi



Head of the Dept. of Physics Sciences: Dr. Richard Thomas (A)




MODULE DESCRIPTION FORM

Module Information

Module Information				
Module Title	Abstraction	Module Domains		
Module Type	Support or related learning activity	☐ Theory ☐ Creative ☐ Case ☐ Tutorial ☒ Practical ☐ Seminar		
Module Code	MA20006			
ECTS Credits	3			
ECTS Weight	1%			
Module Level	3	Semester of Delivery		1
Administering Department	Department of Analytics, Mathematics, and Engineering Sciences	College	ACE00006	
Module Leader	David Taylor (dt) Omar Elmaghrabi (om) Sameer Mohamed (sm) Mohamed Mohamed Ali (ma) Nour Elmaghrabi (ne) Taha Mohamed (tm) Firas Kabbani (fk) Ghada Ayman Kabbani (gk) Taha Sameer (ts) Ibrahim Elmaghrabi (ie)	e-mail	david.taylor@unimelb.edu.au omar.elmaghrabi@unimelb.edu.au sameer.mohamed@unimelb.edu.au mohamed.mohamedali@unimelb.edu.au nour.elmaghrabi@unimelb.edu.au taha.mohamed@unimelb.edu.au firas.kabbani@unimelb.edu.au ghada.aymankabbani@unimelb.edu.au taha.sameer@unimelb.edu.au ibrahim.elmaghrabi@unimelb.edu.au	
Module Leader's Acad. Title	Professor Associate Professor	Module Leader's Qualification	Ph.D. M.Sc.	
Module Tutor	Module Teachers (MT)	e-mail	module.teachers@unimelb.edu.au	
Lead Module Teacher Name	David Taylor, N. Elmaghrabi	e-mail	dtaylor@unimelb.edu.au	

Relation with other Modules

Prerequisite module	None	Corequisite	
Co-requisite module	None	Sequencer	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	- To enable students to acquire proficiency in performing differential calculus operations. - In the field of calculus, the fundamental theorems used in finding and describing functions are limits, derivatives, and integrals.
-------------------	--

	Students will use these terms to address application problems of real & wide range of disciplines, including physics, biology, business, and statistics.
Module Learning Outcomes	LOO1: The student will understand and all the basic concepts of engineering mathematics. LOO2: The student will describe the normal distribution when solving problems. LOO3: The student will make connections with information (real data) when solving problems in normal distribution and apply them in other distributions.
Initiative Contents	Initiative content includes the following: Topics and Topics: The topics will be as follows: the natural logarithm (limits of e^x) and applications and solutions will be taken for problems in the exponential function; the trigonometric function; trigonometric facts; limits for angles (limits of $\sin$); and then the topics will be: differential calculus; derivatives; limits; derivatives from higher orders such as the equation of the straight line; tangents and perpendiculars; and the derivation of trigonometric functions; and the derivation of exponential functions; derivatives of logarithmic functions with calculations on the derivative; tangents and perpendiculars; and applications on the derivative (limits of $\sin$ and $\cos$) (LOO1-LOO3); then finding out integration (derivatives); integration using the rule of integration and finding an integral method; integration by constant substitution; integration by parts and integration methods; integration by partial fractions and by areas (LOO1-LOO3); then the topics will be as follows: applied problems such as finding the area under the curve; the approximate method by integration calculations and finding the area between two curves; then applications of volume of a rotating body and numerical integration Trapezoidal rule and number of terms (LOO1-LOO3).

Learning and Teaching Strategies	
Strategies	Quizzes Assignments Discussion and solving problems with the lecture, student interaction

Student Workload (SWL)			
Structure PBL (h/week)	08	Structure PBL (h/week)	8
Unstructured PBL (h/week)	112	Unstructured PBL (h/week)	8
Total SWL (h/week)	120		

Assess Evaluation					
		Time/Weeks	Weight (Marks)	Week Due	Related Learning Outcome
Formative assessment	Quizzes	1	10% (10)	6 and 8	LOO1, LOO2
	Assignments	2	10% (10)	3 and 10	LOO
	Tutorial	1	10% (10)	Continuous	LOO
	Report	1	10% (10)	12	LOO
	Midterm Exam	2hr	10% (10)	7	LOO

Semester assessment	Final Exam	Jan	Sept./May	20	30
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Theory Syllabus)	
	General Overview
Week 1	Exponential and Natural Logarithms
Week 2	The exponential function - the trigonometric function - trigonometric functions compound angles
Week 3	Differential Calculus - laws of derivatives - higher order derivatives
Week 4	Applications of a straight line tangent and normal
Week 5	Derivatives of trigonometric functions
Week 6	Derivatives of algebraic functions - derivative of logarithmic functions
Week 7	Test Exam
Week 8	Applications of the derivative (speed and acceleration)
Week 9	Applications of the derivative (related rates)
Week 10	Introduction to integration (Antiderivatives - laws of integration - definite integration)
Week 11	Integration methods - integration by algebraic substitution - integration by part
Week 12	Integration methods - integration with partial fractions
Week 13	Finding the area under the curve - the definite integral - using integration Calculators
Week 14	Plotting area under the curve
Week 15	Volume of solid (rotation and horizontal integration)
Week 16	Integration work before the final exam

Delivery Plan (Weekly Tutorial Syllabus)	
	General Overview
Week 1	Solving exercises and mathematical applications in logarithms and natural logarithms
Week 2	Solving exercises and mathematical applications in the exponential function - the trigonometric function - trigonometric functions compound angles
Week 3	Solving exercises and mathematical applications in differential Calculus - laws of Derivatives - higher Order Derivatives
Week 4	Solving exercises and mathematical applications in application of a straight line tangent and normal
Week 5	Solving exercises and mathematical applications in derivatives of trigonometric functions
Week 6	Solving exercises and mathematical applications in derivatives of algebraic functions - Antiderivatives of logarithmic functions
Week 7	
Week 8	Solving exercises and mathematical applications in applications of the derivative (speed and acceleration)
Week 9	Solving exercises and mathematical applications in applications of the derivative (related rates)
Week 10	Introduction to integration (Antiderivatives - laws of integration - definite integration)
Week 11	Solving exercises and mathematical applications in integration methods - integration by algebraic substitution - integration by part
Week 12	Solving exercises and mathematical applications in integration methods - integration with partial fractions
Week 13	Solving exercises and mathematical applications in Finding the area under the curve - the definite integral - using integration Calculators
Week 14	Solving exercises and mathematical applications in Plotting area under the curve
Week 15	Solving exercises and mathematical applications in Volume of solid (rotation and horizontal integration)
Week 16	Integration work before the final exam

Learning and Teaching Resources		
	Test:	Available in the library?
Required Texts	Mathematics for Teachers (writing edition) M. P. Gnanaprakasam, A. A. Thangarajah & G. G.	Yes
Recommended Texts	Mathematics for teachers: 500 of Formulas and Table 1000 Math Formulas	Yes
Website	https://mathsisfun.com/mathematics-glossary/	

Grading Scheme			
Group	Grade	Marks %	Description
Satisfactory Group (80 - 100)	A - Excellent	91 - 100	Outstanding performance
	B - Very Good	81 - 90	Good attempt with some errors
	C - Good	71 - 80	Good work with minor errors
	D - Satisfactory	61 - 70	Fair but with minor shortcomings
	E - Sufficient	50 - 60	Work shows minimum effort
Fail Group (0 - 49)	F - Fair	10 - 49	Work shows minimal but credit awarded
	F - Fail	0 - 9	Unsatisfactory performance, if work rejected
Note: Marks for the groups above as below in Table 3.5 will be rounded to the higher or lower full mark. For example, a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The criteria for this policy NOT to consider "real grade fails" as the only assessment to make awarded to the original assignment with the automatic rounding rule as above.			

Director of Exams / Mohamed Saeed Salem

Chairman of the Scientific Committee / Mohamed Youssef Abdel

Head of the Dept. of Primary Education / Dr. Samir Hassan Ali



MODULE DESCRIPTION FORM

Module Information

Module Title	ENGLISH LANGUAGE I		Module Pathway	
Module Type	Basic Training Academic		☒ Theory ☐ Lab ☐ Practical ☐ Seminar	
Module Code	ENGL101			
ECSE Credit	3			
ECTS Credits	6			
Module Level	1		Semester of Delivery	
Administering Department	SCHOOL OF TEACHER EDUCATION FACULTY OF EDUCATION FACULTY OF EDUCATION ADULT EDUCATION ADULT EDUCATION		College	ALFALAH
Module Leader	David Bailey (Head) Omar Tharwat Mohamed Amr Mohamed Ali Mohamed Mohamed Ali Nabil Fawzi Mohamed Fatah Mohamed Fatah Omar Khaled Omar Al-Hadady Khalid Mohamed Khalid ALI HADADY Fatah Mohamed Fatah Mohamed Hamed Ali Al-Hadady		email	david.bailey@alfalah.edu.jo omar.tharwat@alfalah.edu.jo amr.mohamed@alfalah.edu.jo mohamed.mohamed@alfalah.edu.jo nabil.fawzi@alfalah.edu.jo fatah.mohamed@alfalah.edu.jo khalid.mohamed@alfalah.edu.jo ali.hadady@alfalah.edu.jo fatah.mohamed@alfalah.edu.jo mohamed.hamed@alfalah.edu.jo
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D. M.Sc.	
Module Tutor	Samir Bawzi Fatah	email	samir.bawzi@alfalah.edu.jo	
Post Reviewer	Muhammad Hamed Ali Al-Hadady	email	muhammad.hamed@alfalah.edu.jo	
Scientific Committee Approval Date		Version Number	1.0	

Relation with other Modules

Prerequisite module	Name	Score	
Corequisite module	Name	Score	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. To grasp and studying the English Language to expand the scientific language. 2. We develop critical mind about scientific and literature English quadrivium. 3. Helping the students to think and writing in English the scientific reports.
Module Learning Outcomes (LO)	The student should be able to: LO1: Give to know simple sentences, Present Simple, Past simple and Future. LO2: Give to know Variation of negative sentences and questions in the present and past tense. LO3: Engages in writing the active and passive form in writing scientific reports. LO4: He chooses appropriate punctuation marks when writing scientific text in his specialty.
Indicative Contents	Indicative content includes the following: Theoretical: Enriching the students with knowledge related to the form and types of speech, parsing words and their parts, knowledge of punctuation marks and choosing the appropriate style and order for presenting scientific reports in the specialty in a direct scientific manner.

Learning and Teaching Strategies	
Strategies	1. Interactive lecture, Brainstorming 2. Dialogue and discussion 3. Analyzing reports. 4. Quizzes. 5. Show examples for writing scientific reports in the scientific specialty.

Student Movement (SWL)			
Directed SWL (hours)	32	Directed SWL (days)	2
Unstructured SWL (hours)	18	Unstructured SWL (days)	2
Total SWL (hours)	50		

Module Evaluation

		Time/Order	Weight/Marks	Week Due	Assess Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 11	L1001 and L1002
	Assignments	2	20% (20)	2 and 11	L1001 and L1003
	Projects / Lab	-	-	-	-
	Report	1	10% (10)	10	L1001, L1002 and L1004
Summative assessment	Midterm Exam	20	40% (40)	7	L1001, L1002 and L1003
	Final Exam	20	30% (30)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Schedule)

	Material Covered
Week 1	A Paragraph of Agricultural engineering scenario
Week 2	A Paragraph of Agricultural engineering scenario
Week 3	Present Simple: affirmative statement
Week 4	Present Simple: 2nd person singular (you)
Week 5	Present Simple: negative and negative question
Week 6	Present Simple: interrogative
Week 7	Mid-term Exam
Week 8	Review the Present Simple
Week 9	Past Simple: affirmative sentence
Week 10	Past simple negative verb conjugation
Week 11	Past Simple: negative and negative question
Week 12	Past Simple: interrogative
Week 13	Synonyms and Antonyms
Week 14	Revisiting the passages: Present and Past Tenses and Synonyms + Antonyms
Week 15	Working on the active and passive voice in scientific reports
Week 16	Preparatory work before the final Exam

Learning and Teaching Resources

Text		Available in the Library?
Required Texts	Text: Reading Plan/Background part	Yes
Recommended Texts	Reading Resource of English Grammar 3rd Ed. 2021	No
Website		

Grading Scheme

Group	Grade	Mark %	Definition
Science Group (80 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Passing with major shortcomings
	E - Insufficient	50 - 59	Work needs substantial revision
Post Graduate (60 - 80)	ES - Fail	1-5/100	Does not support but needs revision
	F - Fail	0-4/100	Consistent substandard work required

Note: Marks obtained placed above or below 50 will be rounded to the higher or lower full mark. For example, a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy 'NOT' to consider 'year-pipe-line' or the year adjustment to marks awarded by the original markers will be our common boundary method.

Teacher of Theory: **Samuel Hassenfeld**



Chairman of the Scientific Committee: **Michael Yoon**



Head of the Dept. of Physics: **Dr. Samuel Hassenfeld**




STUDY LIMITATIONS AND FUTURE RESEARCH

[illegible]

Relation with other Modules			
Prerequisite module	None	Joint module	0
Co-requisite module	None	Same module	

Module Aims, Learning Outcomes, and Indicative Contents

Module Objectives	1. Increasing students' proficiency in the basics of the Arabic language: Memorizing the basics of Arabic and increasing their confidence (how well they do the exercises). 2. Engaging them in short discussions where they may have to express their opinion freely. 3. Improving their speaking, writing, listening and reading skills as students, and strengthening students' literary ability to appreciate the style of the language and culture in Saudi.
--------------------------	---

Module Learning Outcomes	The student should be able to: LC1: Develop a fair awareness of the correct use of Arabic grammar in writing and speaking. LC2: Students will improve their ability to speak Arabic in terms of fluency and comprehension. LC3: Students will review the grammatical rules of Arabic and use these forms in specific communicative contexts, which include: classroom activities, homework, reading texts, and writing. LC4: Students will improve their ability to write short paragraphs and summaries using a creative approach.
Instructional Contents	Arabic content includes the following: Theoretical Introduction to communication in general and the Arabic language in particular, with an introduction to word categories (parts of speech) in Arabic (3 hours). Segmentation of each part of speech in Arabic with articles, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions and conjunctions (3 hours). Besides it, meeting Arabic reading and writing are gradually introduced over the said weeks (3 hours). The last part is dedicated to some error correction and feedback sessions (1 hour).

Learning and Teaching Strategies

Strategies	1. Interactively learning through roleplay 2. Dialogue and discussion 3. Assigning reports 4. Grammar 5. Show examples for writing scientific reports in the correct formats.
-------------------	---

Student Workload (SWL)

Structured SWL (h/week)	20	Structured SWL (h/week)	2
Unstructured SWL (h/week)	10	Unstructured SWL (h/week)	1
Total SWL (h/week)	30		

Module Evaluation

Module Evaluation					
		Time/Hours	Weight (Marks)	Weeks Due	Relevant Learning Outcomes
Formative assessments	Quizzes	3	10% (10)	4, 5 & 6	LO1, LO4
	Home Assignments	2	10% (10)	3 and 11	LO1, LO4
	College Assignments	1	5% (5)	10 and 12	LO4
	Report	1	10% (10)	11	LO4
Summative assessment	Mid-term Exam	2hr	10% (10)	8	LO4
	Final Exam	2hr	90% (90)	12	LO4
Total assignments			100% (100 Marks)		

Delivery Plan (Weekly Schedule)	
	Material Covered
Week 1	Atoms, molecules, Types of Elements and Definitions
Week 2	Processes of the Mixture of Gas and of Water
Week 3	Rules for Writing the Names
Week 4	Writing the Formulae of the Compounds
Week 5	How to Write the Formulae of Ionic Compounds
Week 6	Defect and Defective Solids and Defects and Defects of Solids
Week 7	Defective Solids
Week 8	Normal Solids and Defects
Week 9	Defects of Solids, Defects, and Defects
Week 10	Normal Solids in terms of Defects and Defects, and in terms of Defects and Defects
Week 11	Defective Solids
Week 12	Defective Solids
Week 13	Defective Solids and Writing of the Defects (Defects and Defects)
Week 14	Defective Solids and Defects
Week 15	Defective Solids and Defects
Week 16	Defective Solids and Defects

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Comprehensive Chemistry: A-level Edition	Yes
Recommended Texts	Comprehensive Chemistry, by David A. Brown, H. Brown	Yes
Web Sites		

Grading Scheme

Group	Grade	Mark %	Description
Satisfactory Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Strong progress with few errors
	C - Good	70 - 79	Good work with certain errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Satisfactory	50 - 59	Work needs revision/ editing
Fail Group (0 - 49)	NE - Fail	45-49	More work required but credit awarded
	F - Fail	0-44	Considerable amount of work required

Notes: Marks: The final grades above or below D/F will be rounded to the higher or lower full mark. For example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy not to withhold "non-pass fails" as the only adjustment to marks awarded by the original markers will be the adjustment rounding outlined above.

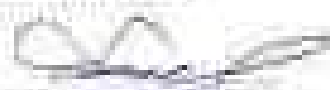
Teacher of Theory: Eissa Mohamed El-Al-Hadi



Chairman of the Scientific Committee: Mohamed Youssef Abdel



Head of the Dept. of Nursing Sciences: Dr. Sawsan Ibrahim Ali




ACKNOWLEDGMENTS

[illegible]

Malnutrition with other disorders

Franchisee market	None	Sevenson
Developer market	None	Sevenson

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	• Identifying pollutants, the common types of pollution, their effects on crops and mankind • Identifying sources of pollutants and their control measures • Develop an understanding of the basic biology and ecology of pest, with an emphasis on the impact of environmental factors on their survival and development. • Students to learn the skills of diagnosing insect on laboratory and analyzing the factors affecting them. • Using laboratory tests and field observation • Study various methods of prevention and control of pest, including the role of pesticides and advanced agricultural techniques such as biological control • Analyze the economic and environmental impacts of pest, and study related policy and • protective management methods to reduce their impact on crops and the environment. • Encouraging student skills in planning, and conducting field experiments and plant/soil tests to • effectively control and control pest/insect infestations. • Encouraging students to research and connect with relevant literature and research in the field of pest • and contribute to developing innovative solutions to meet current challenges in this field
Module Learning Outcomes	[LO1] Understand the basic concepts of integrated management and identify examples of integrated management options. [LO2] identify the types of pests. [LO3] identify the critical economic loss, and the factors affecting it [LO4] recognizing strategies to manage major pests in our environment
Indicative Contents	Unit 1: Insect & Crop damage in the context of the history of integrated pest management 2) The student explains the importance of plant pest 3) Give examples of losses and damage caused by plant pest 4) Learn about the concept of critical economic loss and the factors affecting it 5) Give examples of pest/insect infestation and management programs 6) Learn examples of integrated management programs for four pests

Learning and Teaching Strategies

LO4: The student explains the importance of plant	• Demonstration • Flipped • Debates • Group learning • PRACTICE, ONLINE PRACTICE, GROUP PRACTICE
--	--

Students discuss the strategies	• Exploring • Problem Solving • Time management
---------------------------------	---

Student Worksheet (SWL)			
Structured SWL (A/week)	50	Structured SWL (B/week)	50
Unstructured SWL (A/week)	50	Unstructured SWL (B/week)	50
Total SWL (A/week)	100		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Start	Relevant Learning Outcomes
Formative assessment	Quizzes	2	10% (20)	Week 11	LO 03, LO 04
	Assignments	2	10% (20)	1 and 12	LO 01, LO 04
	Projects / Lab	1	10% (20)	Early March	60
	Report	1	10% (20)	12	60
Summative assessment	Midterm Exam	2hr	10% (20)	7	60
	Final Exam	2hr	50% (100)	18	60
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Internal Control
Week 1	Introduction to Port Management
Week 2	Types and Characteristics of Ports
Week 3	Maritime Transport (Ports)
Week 4	Port Life Cycle and its importance
Week 5	Agribusiness Control

Week 6	Chemical Principles – Introduction & Risk
Week 7	Mid-term Exam
Week 8	Biological Control
Week 9	Biological vs. Chemical Control Comparison
Week 10	Plant Control Methods & Techniques
Week 11	Integrated Pest Management (IPM)
Week 12	Monitoring Tools & Early Detection
Week 13	Pest Management in Organic Farming
Week 14	Role of Technology in Pest Management
Week 15	Extension and Social Aspects
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Study role/make official pests and their economic or environmental impact.
Week 2	Collect pest samples from fields and use available tools to classify them by type.
Week 3	Classify the most important weeds in your area and identify the crop affected.
Week 4	Understand the life cycle of a widespread pest and determine the best stage for control.
Week 5	Comparative study of the pros and cons of control methods.
Week 6	Case study of a disaster resulting from the misuse of a pesticide.
Week 7	Mid-term Exam
Week 8	Review successful examples of biological control.
Week 9	Practical analysis of the possibility of completely alternative practices.
Week 10	Field visit. Identify the most important weed control methods.
Week 11	Design a simple IPM plan for a crop (such as wheat or tomatoes).
Week 12	Sampling methods.
	Examining the crop for using insect traps in the field.
Week 13	Comparison between control methods in organic and conventional agriculture.
Week 14	Observations on the use of technology in pest management and its advantages.
Week 15	A feasibility study comparing the use of single and integrated pest management methods.
	Extension methods and technology transfer for integrated pest management.
Week 16	Preparatory week before the final exam.

Learning and Teaching Resources

Required Tools	Yes	Availability in the Library?
Recommended Tools	Yes	Yes
Webster	مكتبة لاجيا، مركز المعلومات العامة (2012) http://www.lajia.org/ مكتبة الجليل - مركز (2012) (2012) http://www.lajia.org/ كتاب: "مكتبة لاجيا، مركز المعلومات العامة" (2012) كتاب: "مكتبة لاجيا، مركز المعلومات العامة" (2012) كتاب: "مكتبة لاجيا، مركز المعلومات العامة" (2012)	

Grading Scheme

Group	Activity	Marking %	Definition
Severe Group ($50 - 100$)	A = Excellent	$90 - 100$	Outstanding performance
	B = Very Good	$80 - 89$	Strong results, with minor flaws
	C = Good	$70 - 79$	Satisfactory work with noticeable errors
	D = Fair/Good	$60 - 69$	Fair but with major shortcomings
	E = Satisfactory	$50 - 59$	Work requires significant revision
Fair Group ($40 - 49$)	F = Fair	$40 - 49$	Shows some important areas for improvement
	G = Fail	qualify	Unacceptable amount of work completed

Notes: Values in parentheses below the χ^2 statistic indicate the degree of freedom. For example, a χ^2 of 34.1 with 30 degrees of freedom indicates a p value of 0.24. The p value is less than 0.05 if the p value is less than 0.05. The p value is less than 0.05 if the p value is less than 0.05.

Teaching of Theory – Dr. Nand Lal Singh, Jalandhar

Chairman of the Executive Committee: Margaret Yu. Liu

Copyright © 2004 John Wiley & Sons, Inc. All rights reserved.



MODULE DESCRIPTION FORM

Module Information			
Module Title	FOREST MEASUREMENT		Module Delivery
Module Type	Core	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	FOIN1650		
ECTS Credits	4		
EWL (hours)	144		
Module Level	1		
Administering Department	Tree Dept. Code	College	Agriculture & Forestry
Module Leader	Samuel Dlamini PhD	e-mail	samuel.dlamini@unisa.ac.za
Module Leader's Acad. Title	Professor	Module Leader's Qualification	PhD
Module Tutor	Dr. Arman Jaber Mohammed Dr. Juma Ali Rashed	e-mail	arman.jaber@unisa.ac.za juma.ali@unisa.ac.za
Peer Reviewer Name	Samuel Dlamini PhD	e-mail	samuel.dlamini@unisa.ac.za
School/College/Department Approval Date	(signature)	Version Number	1.0

Relation with other Modules			
Prerequisite module	FOREST INVESTMENT		Semester
			FOIN1650
Coe-requisite module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	Theory - Developing the student's ability to deal with scientific and technical issues - Developing the student's ability to deal with the theories - Developing the student's ability to deal with multiple media - Developing the student's ability to dialogue and discuss - Developing the student's ability to deal independently in the field by self Practical - Developing the student's ability to deal with multiple media - Developing the student's ability to dialogue and discuss

Module Learning Outcomes	- Developing the student's ability to use scientific and technological tools - Developing the student's ability to use the Internet - Developing the student's ability to use computers - Developing the student's ability to engage in dialogue and discussion - Developing the student's economic skills in the workplace
Initiative Contents	Physical measurement materials are included on measuring forces and other properties for structural, vibration and acoustic measurements. They include measurements of densities, heights, volumes, and masses using apparatuses such as a large tape measure and a spring scale. Selected methods for obtaining properties are thoroughly worked. Tables and equations are included for calculating area and surface area. Advanced material includes modern applications such as GIS and LIDAR, and provide practical instruction on working with data.

Learning and Teaching Strategies	
Strategies	- Interactive lecture, Blackboard, etc. - Think-pair-and-share - Scoring tasks and reporting - Assigning group work or formal laboratory skills

Student Workload (SWL)			
Structured SWL (In/sem)	120	Structured SWL (h/w)	3
Unstructured SWL (In/sem)	92	Unstructured SWL (h/w)	6
Total SWL (In/sem)	212		

Module Evaluation					
		Time/Number	Weight (Mark)	Week, Day	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	2 and 10	LO1 (P), AC1, AC2 (P), AC3
	Assignments	2	10% (10)	7 and 13	LO1 (P), AC1, AC2 (P), AC3
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO1 (P), AC1, AC2 (P)
Summative assessment	Mid-term Exam	1hr	50% (50)	7	LO1 (P), AC1
	Final Exam	1hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المخطط الأسبوعي النظري

	Material Covered
Week 1	Course introduction, meetings
Week 2	Introduction to measurement and data systems
Week 3	Topographic
Week 4	True variation
Week 5	Magnetic variation
Week 6	Measuring true heights
Week 7	Measuring true heights
Week 8	True slope angles
Week 9	Volume calculation in cross-sections
Week 10	Measuring true slope for the widest tracks of travelling men
Week 11	Measuring the rise of men
Week 12	Volume tables
Week 13	Class of Volume tables
Week 14	Maximum and minimum of measurement
Week 15	True analysis method
Week 16	Preparation work before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Basic measurement data
Week 2	True and false data for course
Week 3	Distance measurement for field
Week 4	Height data
Week 5	Measuring true heights
Week 6	True Variation
Week 7	Measuring the slope of the line
Week 8	Slope of line
Week 9	Volume measurement
Week 10	Volume measurement
Week 11	Volume tables
Week 12	Volume tables
Week 13	True slope tables

Week 14	Revision and deconstruction experiments
Week 15	Study analysis
Week 16	Preparatory work before the final exam

Learning and Teaching Resources		
	Test	Available in the Library?
Required Tests	Formal calculation	Yes
Recommended Tests		
Webinars		

Grading Scheme			
Group	Grade	Marks %	Description
Research Group (20 - 100)	A+ Excellent	90 - 100	Outstanding performance
	A+ Very Good	80 - 89	Excellent work with some errors
	A- Good	70 - 79	Good work with notable errors
	B- Satisfactory	60 - 69	Fair but with many shortcomings
	C- Sufficient	50 - 59	Weak thesis and conclusions
Fail Group (0 - 49)	FA - Fail	1-49	Minor work required for rethesis accepted
	F - Fail	0-49	Considerable revision of work required
Notes: Where theoretical plans above or below 50 will be awarded the figure or figure that most closely equals a mark of 50.5 will be rounded to 50, whereas a mark of 50.4 will be rounded to 49. The University has a policy NOT to produce "near-pass fails" so the only adjustment to marks awarded by the original marker will be for the automatic rounding described above.			

Teacher of Theory: Dr. Emma Jones (signature)

Teacher of Practical: Dr. David Ali (signature)

Chairman of the Research Committee: Dr. Emma Jones (signature)

Head of the Dept. of Physics Sciences: Dr. David Ali (signature)



Description of the study material

Study subject information			
Module Title	Agricultural production technology		Module Delivery
Module Type	Core learning activity		☐ Theory
Module Code	APT 0140		☐ Lecture
ECTS Credits	5		☐ Lab
SWs (Pr/sem)	120		☐ Tutorial
Module Level	Semester		☒ Practical
Administering Department	College		Semester of Delivery
Module Leader	e-mail		
Module Leader's Acad. Title	Module Leader's Qualification		
Module Tutor	e-mail		
Peer Reviewer Name	e-mail		
Scientific Committee Approval Date	Version Number		

Relationship with Other Courses			
Prerequisite module	ECTS/EC	Semester	
Co-requisites module	ECTS/EC	Semester	

Course objectives, learning outcomes, and guidance content	
Objectives of the study subject	1. To present the basic concepts and principles upon which agricultural animal breeding involves (re- or in- method) are listed to improve productivity, and to establish optimal and sustainable breeding systems to ensure sustainable safety and health. 2. Introducing students to the topic of the research and their classification, and

	empowering students with in field experiences related to farm systems and problems arising in the field of animal production. C-To introduce the students with basic knowledge of horticulture and types of horticultural crops, including fruits, vegetables and ornamental plants, as well as soil conservation, modern irrigation techniques, and pest and disease control, enabling them to understand all stages of production. D-To be familiar with methods and the focus of modern technologies include hydroponics, protected agriculture, post-harvest operations and marketing, giving the student a comprehensive view of the production process.
Learning Outcomes	(LO1) Identify important animals, their production cycles, and apply knowledge in animal production. • (LO2) Manage production in a farm establishment, animal care, and control management using modern technology. • (LO3) Understand plant production for domestic's food and projects as to propagation and care. (LO4) Gain skills from farm to market, including post-harvest and marketing for product quality and economic value.
Guiding Content	• Theoretical: Economic importance of livestock, animal care, farm operations, and animal management. • Farm production: Soil management, irrigation, modern farming, propagation, care, and associated management.

Teaching and Learning Strategies	
Strategies	1. Interactive lectures, brainstorming 2. Dialogue and discussion 3. Case studies 4. Classroom experiments Scanned with CamScanner

Student Workload (15 weeks)			
Regular academic workload for the student during the semester	13	Student's regular weekly study load	4
Irregular student workload during the semester	12	Irregular weekly study load for the student	4
The student's total academic workload during the semester	135		

Evaluation of the academic subject

		Time/Number	Weight (Mark)	When Due	Relevant Learning Outcomes
Formative assessment	Quizzes	2	10% (20)	Week 11	LO1 and LO2
	Assignments	2	10% (20)	2 and 13	LO1 and LO3
	Project/Poster	2	10% (20)	3, 10 and 14	43
	Report	1	10% (20)	14	LO1, LO2 and LO4
Summative assessment	Midterm Exam	2hr	10% (20)	7	LO1, LO2 and LO3
	Final Exam	2hr	50% (100)	18	51
Total assessment			100% (200 Mark)		

Weekly theoretical curriculum

Weekly Curriculum	
Week 1	Fundamentals of Horticulture: Plant Production, Definition of horticulture, its importance, and its main divisions: vegetables, fruits, ornamental plants.
Week 2	Modern Agricultural Techniques: Protected horticulture, its importance, types of greenhouses, and hydroponic and types of hydroponics.
Week 3	Plant propagation methods: Sexual propagation, vegetative propagation, and tissue culture.
Week 4	Soil and plant growing, objectives, types of sowing, and sowing methods.
Week 5	Pests and diseases, their control, and handling and marketing of horticultural products.
Week 6	Selection of field crops, types of field crops, objectives of field crop science, and the importance of field crops in meeting food security.
Week 7	Environmental factors in Iraq and the world and their relationship to the growth of field crops: location and topography, climate, soil, and water resources.
Week 8	Classification of field crops, according to their life cycle.
Week 9	Modern farms: Classification of field crops according to their life cycle.
Week 10	Agricultural tools, irrigation methods in field crop management.
Week 11	The economic importance of hydroponics, challenges and future prospects for expanding production.
Week 12	Types of soils: clay soils, sand soils, silt soils, and loam soils, their uses and water holding.
Week 13	Organic and inorganic acids and salts in soils and methods for estimating available acids.
Week 14	Positive feeding: its economic importance, contribution to establishing and growth of poultry farms, and classification of chicken breeds.
Week 15	Aviculture: its economic importance, requirements for establishing and types of poultry farms, and classification of chicken breeds.
Week 16	Preparatory week before the final exam.

Weekly curriculum for practical application

	Material Covered
Week 1	Field visit to horticulture, fisheries and production or horticulture establishments.
Week 2	Familiarization with basic tools and equipment used as well as use of various soil mixes for planting. Field visit and selection of plants to propagate in fields, planting seeds and seedlings.
Week 3	Field visit to horticulture, fisheries and maintenance of horticulture establishments.
Week 4	Formulating pruning on some plants in fields and understanding the objectives of each type of pruning.
Week 5	Determining the signs of maturity for some crops such as tomatoes in out-of-field and conveying out the harvesting process.
Week 6	Crop culture operations (land preparation – weeding – pest control – irrigation – harvesting – post-harvest operations).
Week 7	Scientific description of the most important field crops.
Week 8	Designing and taking of agricultural fields.
Week 9	Adopting methods in field crop management and the use of short agriculture.
Week 10	How to deal with climate change in field crop production.
Week 11	Plant field specimens in horticulture and out-of-field.
Week 12	Soil types, methods of testing.
Week 13	Seedling and seeds for young animals and weeding methods.
Week 14	Soil test, testing and methods of observation.
Week 15	Types of noxious, method of organizing them and their maintenance in managing and when they are.

Learning and teaching resources

	Text	Available in the library?
Required Texts	I.A.	
Recommended Books	- Principles of Animal Production - Principles of Horticulture - Fundamentals of Field Crop Production (Technical and Practical)	Yes
Websites		

Grading chart

Group		Apprentices	Marks %	Definition
Success Group (90 - 100)		Excellent	90 - 100	Demanding Performance
		Very Good	80 - 89	Good and up with some errors

Fall Group (20-40)		Good	35-39	Good work with isolated errors
		Average	30-34	Fair but with major shortcomings
		Acceptable	25-29	Work meets minimum criteria
		Fair (borderline)	20-24	Work meets minimum but credit doubtful
		Fair	15-19	Considerable amount of work required

Note: Marks (rounded down) above or below 4.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54). The University has a policy NOT to introduce "near-pass fails" as the only adjustment to marks awarded by the original markers will be the automatic rounding method above.

Theoretical lecturer
Assistant Prof. Dr. Kerasa Abdul Hussain Ismail

Practical lecturer
Mr. Muzik Muhammad Osman

Chairman of Scientific Committee
Prof. Dr. Mohammad Vaseeh Al-Allaf

Head of Department
Prof. Dr. Saoud Hassan Al-Allaf



	- To introduce students to the factors affecting the health and safety of food products, including genetic modification, pesticide residues, and relevant regulations. - To raise awareness of the importance of sustainable development in managing natural resources, protecting the environment, and ensuring the continuity of the food supply chain.
Module Learning Outcomes L0s:	By the end of this course, the student will be able to: L001: Explain the fundamental concepts of food technology, including food processing and preservation methods, and their role in achieving food security and sustainable development. L002: Evaluate the quality of agro-industrial products, detect deviations of contamination, and propose solutions within the framework of good agricultural practices (GAP). L003: Distinguish between food safety regulations and standards, and apply them in ensuring the production chain to ensure consumer safety. L004: Demonstrate ethical and professional responsibility toward community health and environmental protection through the adoption of sustainable and safe food production practices.
Indicative Contents:	The graduate outputs include the following: Graduate Content (Theoretical): Introduce students to the fundamentals of food technology and its role in food security, explain food processing and preservation techniques affect product quality And safety, and reinforce concepts of sustainability and health regulations. Graduate Content (Practical): Simple applications of food processing techniques, with a focus of barriers to their adoption in food communities and proposing feasible solutions. Duration = 40 = 20% = 8 hours (20 = simple structure 20% by a 15 weeks)

Learning and Teaching Strategies

Strategies:	1- Interactive Lecture and Brainstorming 2- Groupwork and Discussion 3- Case Study 4- In-Class Experiments 5- Mini Case Study (Real or Virtual)
--------------------	---

Student Workload (SWL)

Structured SWL (h/week)	60	Unstructured SWL (h/week)	4
Unstructured SWL (h/week)	60	Unstructured SWL (h/week)	4

Module Evaluation

		Test/Number	Weight (Mark)	Week End	Relevant Learning Outcome
Formative assessment	Quiz	1	10% (10)	1 and 11	LO1 and LO2
	Assignments	1	10% (10)	2 and 12	LO1 and LO2
	Project/ Assignment	1	10% (10)	4, 8 and 12	all
	Review	1	10% (10)	11	LO1, LO2 and LO4
Summative assessment	Mid-term Exam	1%	10% (10)	7	LO1, LO2 and LO4
	Final Exam	1%	50% (50)	11	all
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Module Overview	
Week 1	Introduction to Food Technology and its importance The role of food processing in reducing food harvest losses and achieving food security. Concepts of Sustainable Development in the agricultural and food sectors.
Week 2	Traditional and modern food preservation methods (drying, canning, refrigeration, acid packaging) Impact of preservation techniques on the sustainability of natural resources and product quality
Week 3	Food processing technologies for field crops (grains, legumes) with a focus on sustainability and innovations Utilization of available skills and technologies for improving production efficiency
Week 4	Processing horticultural products (fruit and vegetables): canning, drying, jams, jellies The relationship between horticulture, product quality and food security
Week 5	Dairy and meat technology: preservation, processing, sustainable practices Management of animal and plant waste according to environmental sustainability standards
Week 6	Modern technologies in food processing (active packaging, functional foods) The impact of the food industry on Sustainable Development Goals (SDGs)
Week 7	Food safety Exam
Week 8	Introduction to the Food and safety of food systems (SFTS and associated risks) Regulations and standards to ensure food safety
Week 9	Safety of animal products (dairy, meat, eggs), control of contamination, good practice Development of animal supply chains within the framework of environmental and social sustainability

Week 10	Safety of plant products for chemical and biological contamination (pesticides, fungi, mutations). Good agricultural practices (GAP) to achieve high quality and safety of agricultural products.
Week 11	Disease identification (IPM) in agricultural crops: symptoms, risks, identification. The relationship between microbiology and achieving food security with sustainable practices.
Week 12	Quality management of horticultural products: from farm to consumer. Applications of modern technologies in monitoring the health of plant products.
Week 13	The concept of agricultural sustainability as a strategy to ensure the quality and safety of agricultural products. Impact of Integrated Pest Management (IPM) on reducing pesticide residues in products. How good production practices help to ensure product characteristics: color, texture, flavor and physical characteristics.
Week 14	Types of agricultural pesticides and their direct influence on plant quality. Methods to reduce pesticide residues in food products: washing, thermal treatments, biotechnological techniques. Regulations of products to limit pesticide residues in food (Hazardous Chemicals and Pesticides - GAP). The relationship between environmental sustainability and food product safety in agricultural products.
Week 15	Managing natural resources (water, soil, energy) to ensure healthy and safe agricultural products. The impact of water quality on agricultural products on food product quality (water quality tests and tests). Sustainable food security: the relationship between product health - environmental protection - responsible consumption. Practical exercises: international projects, case studies from Europe.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Practical Syllabus)

	Practical Content
Week 1	Introduction: role of the food laboratory, the theoretical knowledge supported by theory classes + laboratory of food analysis (GAP).
Week 2	Food preservation exercises using drying, heat, acid, vegetables or fruits.
Week 3	Preservation using salt, oil sugar, vinegar, acid or smoking.
Week 4	Identification of the various seeds (preparing salad).
Week 5	Sensory evaluation of various types of processed food (canned product).
Week 6	Supermarket processed food for dairy products, sensory analysis + microbiology.
Week 7	Foodstuffs applications: making sweetened condensed milk, jam or canned food products.
Week 8	Visual inspection and analysis of various types of products in a processed product (comparing natural samples).
Week 9	Color study on a previously modified product (color presentation or texture + color, pH, nutrients).
Week 10	Elaboration of field visit to a food or dairy factory.
Week 11	Theoretical and practical classification of sprays types in plant and animal food products.
Week 12	Hydration assessment: using preservation methods to environmental impact (sustainability, hygiene, etc).
Week 13	Practical analysis of quality control in the production chain (from farm to consumer).
Week 14	Supermarket product presentation: e.g., diet for a safe food product + packaging design.

Week 18	Final practical exam – self assessment of the practical course
---------	--

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts:	N/A	-
Recommended Texts:	- Principles of Food Industries - Food Safety – Prepared Lectures	Yes
Reference:		

Grading Scheme			
Group	Grade	Mark %	Definition
Students Group (80 – 100)	A – Excellent	90 – 100	Outstanding Performance
	B – Very Good	80 – 89	Above average with some flaws
	C – Good	70 – 79	Good work with notable errors
	D – Satisfactory	60 – 69	Fair but with major omissions/ errors
	E – Satisfactory	50 – 59	Work requires minor corrections
Fail Group (0 – 49)	FX – Fail	00/49	Work not repeated/ a credit was not
	F – Fail	01-49	Unsatisfactory amount of work received
		00 – 01	
Note: Mark 00 (zero) given stated to failed 01 as the student is the higher 00 yet full mark but student a mark of 00 it will be rounded to 01, whereas a mark of 01 it will be rounded to 00. The University has a policy not to consider "zero pass rate" as the only adjustment of marks applied by the original marker(s) within the automatic rounding of final degree.			



Tutor of Theory : Dr. Ibrahim Eladil (MSc)



Chairman of the Scientific Committee : Dr. Mohamed Younis Alad



Head of the Dept. of Food Engineering : Dr. Samir Eladil (MSc)



Module Evaluation

		Time/Number	Weight (Mark)	Weeks Due	Relevant Learning Outcomes
Formative assessment	Quizzes	2	10% (100)	4 and 12	LO1 and LO2
	Assignments	2	10% (100)	2 and 12	LO1 and LO2
	Projects / Lab	-	-	-	-
	Reports	2	10% (100)	14	LO1, LO2 and LO4
Summative assessment	Midterm Exam	1hr	20% (200)	7	LO1, LO2 and LO4
	Final Exam	2hr	10% (100)	16	40
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Subjected)

	Material Covered
Week 1	The Concept of Crime and Their Categories
Week 2	Crimes of the South Region According to the Constitution of the Iraq Criminal Court Law of 1980
Week 3	Classification of Society
Week 4	The South Region's Population, Religion and its Importance of Iraqi Law
Week 5	Some Details Concerning Judicial and Military Institutions of the Southern-South Region
Week 6	Physical and Geographical Features of the South Region in Iraq
Week 7	And more Issues
Week 8	Administrative Structure of the South Region
Week 9	1- War and Repressive Culture and Miss Experiences 2- Description of Cities and Villages (connected with Week 10)
Week 10	Classifying the Mythical Institutions that Defining Culture, Folk Traditions, Values, and Customs
Week 11	Miss State Crimes, The Events of 1963 and Their Relationship to Miss State
Week 12	1- The Events of 1976 or 1988 and Their Relationship to Miss Culture 2- The Events of 1980 or 1988 and Their Relationship to Miss Values
Week 13	The Events of the 1990, the last Months and Their Relationship to Miss Values
Week 14	Chronological Description of Miss Values and Generally in Iraq (1950 to 2003)
Week 15	1- Miss State's Against the Kurds 1982 2- The Arab Massacre 1987/1988 3- Issues of the War in Spring 2003
Week 16	Preparatory week before the Final Exam

SYNOPSIS

[illegible]

Relation with other Modules			
Thermodynamic module	None		Same year
Computational module	None		Same year

Module Aims, Learning Outcomes and Indicative Contents

Module Outcomes	Enable the student to be able to design experiments in the agricultural field in general and animal production in particular and interpret and apply all data related to analysis, structure and testing results and choose the appropriate design for the experiment, how to distribute the parameters to the experimental units, and record the observations to be able to collect data, classify and analyse it, conduct a significance test
Module Learning Outcomes	The student should be able to: LO1: select and present an idea that will be tested and also LO2: Take and manage some experiments LO3: Perform statistical analysis and interpret the results LO4: Statist Methods and their inference and confidence
Indicative Contents	Indicative content includes the following: Statistical Covering the module content how to make practical tests in data and statistical test, and to understand the practical statistical analysis programs such as SAS and SPSS soft.

Learning and Teaching Strategies

Strategies	1- Interactive lecture, 2-Case learning 3-Assignment and discussion 4- Group work (reports) 5- Quizzes 6- Show examples for writing scientific reports in the student to read
-------------------	---

Student Workload (SWL)

Structured SWL (hrs/sem)	63	Unstructured SWL (hrs/sem)	4
Unstructured SWL (hrs/sem)	62	Structured SWL (hrs/sem)	3
Total SWL (hrs/sem)	125		

Module Evaluation

		Time/Number	Weight (Ratio)	Mean Out	Relative Learning Outcome
Formative Assessment	Quizzes	1	10% (1.0)	1.0-0.30	LO 1, LO 2, LO 3
	Assignments	1	10% (1.0)	1.4-0.12	LO 4, LO 5, LO 6

	Programs/Lab Hours		100% (10)	10	40
Sampling and measurement	Statistical Data	20%	10% (1)	1	40
	Final Data	80%	50% (5)	50	40
Total assessment			100% (10) Marks		

Delivery Plan (Semester Syllabus)

	Material Covered
Week 1	Game-theoretical measures
Week 2	Chapter One (Introduction)
Week 3	Completely randomized design
Week 4	Comparing between groups
Week 5	Comparing between groups
Week 6	Some of Measures that Researchers may be do for experiments
Week 7	Randomized complete block design
Week 8	Full Factorial Experiments
Week 9	Randomized complete block design (relative efficiency, comparing with completely randomized design), introducing missing observations
Week 10	Latin square design
Week 11	Latin square design (relative efficiency, comparing with another two designs: RCBD and CRD)
Week 12	Latin square design: adjusting the missing observations
Week 13	Factorial experiments
Week 14	Factorial experiments
Week 15	Specific topic
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Measures of association and measures of dispersion
Week 2	Completely randomized design, RCBD, and ring method

Week 2	Completely randomized design of R.D. to answer lecture questions and give homework
Week 3	Design test, least significant difference Test.
Week 4	Design Multiple Range Test
Week 5	Sum of Control Minutes for the R.D. experimental set II
Week 6	completely randomized block design design
Week 7	completely randomized block design in detail
Week 8	Relative efficiency and mixing observations of a completely randomized block design
Week 9	Direct questions in Latin square design
Week 10	Subject parameters in the Latin square design
Week 11	Relative efficiency of the Latin square design
Week 12	spacing observations in a Latin square design
Week 13	Factorial experiments
Week 14	Factorial experiments
Week 15	Final practical test

Learning and Teaching Resources موارد التعلم والتدريس		
	Text	Available in the library?
Required Texts	Design and Analysis of Agricultural Experiments, Published by Dr. Mustafa Al-Kass and Dr. Abdulsalam Musharrafat	Yes
Recommended Texts	Many lectures published on the college website	Yes
Activities	includes questions in Statistics and Data Analysis	

Grading Scheme			
Grade	Grade	Mark %	Description
Letter Grade (80 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above Average with some errors
	C - Good	70 - 79	Average with some errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Meets minimum criteria
Fail Range (0 - 49)	F - Fail	10 - 49	More work required than with average
	X - Fail	0 - 49	Considerable amount of work required
When taking terminal exams above or below 50 will be rounded to the higher number. For example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to round down "near pass fails" as the only a student is considered to the higher number, as if he/she was rounding it down above.			

Teacher of Theory: Dr. Elham Baki Zaki



Chairman of the Scientific Committee: Mohamed Youssef Abdel



Head of the Dept. of Physics Research: Dr. Samir Hammad



	4. The student will understand the extent of the stress exerted by the Salix vegetation. Tasks highlighting these values. 5. The student will be able to provide examples of the sal stress and the response when they observed. 6. The student will understand the physiological and initial effects of the stress exerted by the Salix regime on the permeability of the vegetation. 7. The student will understand the evolutionary effects of the stress exerted by the Salix regime on the vegetation. 8. The student will identify the plants left behind by the former Salix regime, identifying their location and time of occurrence.
Measurable Learning Outcomes (LOs)	The student should be able to: LO1: Understanding and identifying stress. LO2: Understanding the processes and effects of stress. LO3: Vegetation framework for stress. LO4: Documenting stress.
Indicative Contents	Salinity stress includes the following: <u>Threats to</u> Students should understand the following: Salinity stress and its types, with a focus on the stress exerted by the Salix regime on the vegetation. The extent of the stress exerted by the regime, providing evidence and identifying the location of these stresses, and understanding their physiological, initial, and evolutionary effects. It also explains how and how much the vegetation is affected by the stress, identifying their location and time. Total hrs = 12 = Theory + Assessment = 12/2 = 6 hrs (Theory table hrs = 12 - 6 hrs)
Learning and Teaching Strategies	
Strategies	1. Interactive lecture/discussion 2. Fieldwork and observation 3. Assigning reports 4. Quizzes 5. Self-reflection and peer review

Student Workload (SWL)			
Structured SWL (h/week)	12	Unstructured SWL (h/week)	12
Unstructured SWL (h/week)	12	Unstructured SWL (h/week)	12
Total SWL (h/week)	36		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	Week 13	LO1 and LO2
	Assignments	1	20% (20)	Week 13	LO1 and LO2
	Projects / Lab	-	-	-	-
	Report	1	10% (10)	14	LO1, LO2 and LO4
Summative assessment	Mid-term Exam	2hr	10% (10)	7	LO1, LO2 and LO3
	Final Exam	3hr	50% (50)	14	All
Total assessment			100% (100 Marks)		

Delivery Plan (Delivery Syllabus)	
	Material Covered
Week 1	The Concept of Crimes and Their Categories
Week 2	Crimes of the South African According to the Definition Made in the Final Criminal Code Law of 2009
Week 3	Introduction of Society
Week 4	The South African Position on Rape and its Evolution in 1994
Week 5	Some Details on Concerning Political and Military Instability of the Former South Africa
Week 6	Prison and Detention Facilities of the South African in 1990
Week 7	Warfare Laws
Week 8	Environmental Crimes of the South African
Week 9	1. War and Radioactive Pollution and Other Disasters 2. Disruption of Cities and Villages due to their Earthquake
Week 10	Forming the Villages in Southern into Destroying Churches, Poles, Trees, Farms, and Crops
Week 11	Mass Grave Crimes, The Events of 1992 and Their Relationship to Mass Graves
Week 12	1. The Events of 1978 to 1988 and Their Relationship to Mass Graves 2. The Events of 1987 to 2008 and Their Relationship to Mass Graves
Week 13	The Events in the 1970s and the Events and Their Relationship to Mass Graves
Week 14	Chronological Classification of Mass Graves and Genocide in the 1970s to 2008
Week 15	1. Mass Graves Against the Events 1992 2. The Police Operations 1987-1988 3. Cases of the South African in 1992 (1993)
Week 16	Preparatory work before the Final Exam

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts:	Course of the Module begins in week 2023.	Yes
Recommendations of Texts:	1- Human Rights, Writings-Declarations. 2- Janet Abu-Salma, Criminal Rights-Reports. 3- Mass Graves in Iraq, the Human Rights Watch. 4- Journal of Human Rights and Public Liberties. 5- Antonio Cassese, International Criminal Law. 6- Human Rights, Writings-Declarations.	No
Available:	Human Rights, Writings-Declarations.	

Grading Scheme			
Group	Grade	Marks %	Description
Summa Group (90 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with distinctions
	C - Good	70 - 79	Good work with notable errors
	D - Satisfactory	60 - 69	Fair but with some shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FA - Fail	35 - 49	More work required but credit awarded
	F - Fail	0 - 34	Considerable amount of work required
Notes: Marks Decimals places above or below 0.5 will be rounded to the higher or lower Fail mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54). The University has a policy NOT to produce "near-pass fails" so the official adjustment to marks awarded by the original marker will be the outcome, rounding outlined above.			

Teacher of Theory: Dr. Mohamed Ayman

Chairman of the Scientific Committee: Mohamed Youssef Ali

Head of the Dept. of Forensic Sciences: Dr. Ahmed Hassan Ali

