MODULE DESCRIPTION FORM

Module Information			
Module Title	**AGRICULTURE CAREER ETHICS**	**Module Delivery**	
Module Type	**Basic learning activities**	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☒ Seminar	
Module Code	**ACE1020**		
ECTS Credits	**5**		
SWL (hr/sem)	**125**		
Module Level	1	**Semester of Delivery**	1
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	Alla Mohamed Abdullah Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz **Nofal Issa Mohamed** sumyia khalaf Badawi Firas Kadhim Dawoo Aljuboori Khaled Anwer Khaled ALKHALED Talal Saeed Hameed Muzahim Saeed Al-Bek	**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 firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq` muzahim_saeed@uomosul.edu.iq
Module Leader's Acad. Title	**Professor** **Assistant Professor**	**Module Leader's Qualification**	Ph.D. M.Sc.
Module Tutor	N.A.	**e-mail**	N.A.
Peer Reviewer Name	N.A.	**e-mail**	N.A.
Scientific Committee Approval Date	15/10/2024	**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 ethics and ethical concepts to the agricultural engineer. 2- Teaching the ethical rules of professional ethics and clarifying the ethics of agricultural engineering.
Module Learning Outcomes LOs	The student should be able to: LO#1: Know general concepts of morality and moral philosophies. LO#2: Learn the concept of occupational ethics and ethical rules in the agricultural engineering profession. LO#3: Respect the laws and regulations related to agricultural engineering projects. LO#4: Bear ethical responsibilities in the fields of the agricultural engineering profession.
Indicative Contents	Indicative content includes the following. Theoretical Ethical and professional ethics, which are moral philosophies, ethical rules in agricultural engineering. It includes distributing titles on agricultural professional ethics to students to give seminars on them. Total hrs = 63 = SSWL - (Exam hrs) = 63-3 = 60 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. Presentation of examples of professional, ethical cases in the field of scientific specialization by students and received in discussion seminars.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
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	2	10% (10)	4 and 11	LO#1 and LO#2
	Assignments	2	10% (10)	2 and 13	LO#1 and LO#3
	Seminar	1	10% (10)	All	All
	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	Introduction to professional ethics and its importance in agricultural engineering
Week 2	Basic ethical theories in the profession Integrity and scientific honesty in agricultural research
Week 3	The agricultural engineer's commitment to environmental responsibility
Week 4	Professional interaction with society and the public
Week 5	Positively dealing with conflicts of interest
Week 6	Ethics of agricultural experiments and research
Week 7	Mid-term Exam
Week 8	Ethics of agricultural experiments and research
Week 9	Confidentiality and data protection
Week 10	Compliance with laws and instructions in agricultural engineering
Week 11	Cooperation and teamwork in agricultural projects
Week 12	Combating professional corruption in agricultural engineering
Week 13	Continuous learning and self-development in an ethical context
Week 14	Assessing commitment to professional ethics: strategies and tools
Week 15	Ethics of innovation in agricultural engineering
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Seminar. Syllabus)	
	Material Covered
Week 1	**Pesticide use and its impact on the health of farmers and consumers**

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: is there ethics?**
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 in protected areas: a balance between protection and production**
Week 10	**Agricultural research ethics: the limits of experiments on living organisms**
Week 11	**Unfair distribution of support allocated to farmers and its impact on small projects**
Week 12	**The impact of agriculture on local communities: benefits versus risks and ethical challenges**
Week 13	**Ethics in Cash Crop (traded as international trade) Farming and its impact on Food Security**
Week 14	**Modern technologies in agriculture: are we prepared to bear their ethical consequences**
Week 15	**Organic agriculture: ethical challenges in promotion and practice**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	N.A.	-
Recommended Texts	Professional Ethics اخلاقيات المهنة اخلاقيات المهنة	Yes
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

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**ENGLISH LANGUAGE 1**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM1021**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**		1
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986		**College**	AGFO1964	
Module Leader	Alla Mohamed Abdullah Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz **Nofal Issa Mohamed** sumyia khalaf Badawi Firas Kadhim Dawoo Aljuboori Khaled Anwer Khaled ALKHALED Talal Saeed Hameed Muzahim Saeed Al-Bek		**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 firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq` muzahim_saeed@uomosul.edu.iq	
Module Leader's Acad. Title	Professor Assistant Professor		**Module Leader's Qualification**		Ph.D. **M.Sc.**
Module Tutor	N.A.		**e-mail**	N.A.	
Peer Reviewer Name	N.A.		**e-mail**	N.A.	
Scientific Committee Approval Date	15/10/2024		**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- To going on studying the English language in special the scientific language. 2- Widening student mind about scientific and literature English vocabularies. 3- Helping the students to think and write in English the scientific reports.
Module Learning Outcomes LOs	The student should be able to: LO#1: Gets to know simple sentences, Present Simple, Past simple and Future. LO #2: Gets to know formation of negative sentences and questions in the present and past tense. LO#3: Expresses in writing the active and passive forms in writing scientific reports. LO#4: He chooses appropriate punctuation marks when writing scientific texts in his specialty.
Indicative Contents	Indicative content includes the following. Theoretical Enriching the student with knowledge related to the parts and types of speech, parsing marks and their tools, knowledge of punctuation tools, and choosing the appropriate style and verbs for preparing scientific reports in the specialty in a correct scientific manner. 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	20% (10)	2 and 13	LO#1 and LO#3
	Projects / Lab.	-	-	-	-
	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	A Paragraph on agricultural engineering sciences
Week 2	A Paragraph on agricultural engineering sciences
Week 3	Present Simple: affirmative sentences
Week 4	Present Simple: 3rd person singular (‘s)
Week 5	Present Simple: negation and yes\no question
Week 6	Present Simple: wh-questions
Week 7	Mid-term Exam
Week 8	Review the Present Simple
Week 9	Past Simple: affirmative sentences
Week 10	Past simple: irregular verbs inflections
Week 11	Past Simple: negation and yes\no question
Week 12	Past Simple: wh-questions
Week 13	Synonyms and Antonyms
Week 14	Reviewing the passage, Present and Past Tenses, and Synonyms + Antonyms

Week 15	Writing in the active and passive voice in scientific reports
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	New Headway Plus/Beginner part1	Yes
Recommended Texts	Rapid Review of English Grammar 2020–2021	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 FORM

Module Information			
Module Title	**COMPUTER1**	**Module Delivery**	
Module Type	Basic learning activities	☐ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOM1031		
ECTS Credits	**3**		
SWL (hr/sem)	**75**		
Module Level	**1**	**Semester of Delivery**	1
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	**AGFO1964**
Module Leader	Alla Mohamed Abdullah Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz **Nofal Issa Mohamed** sumyia khalaf Badawi Firas Kadhim Dawoo Aljuboori Khaled Anwer Khaled ALKHALED Talal Saeed Hameed Muzahim Saeed Al-Bek	**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 firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq` muzahim_saeed@uomosul.edu.iq
Module Leader's Acad. Title	**Professor** **Assistant Professor**	**Module Leader's 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	15/10/2024	**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 computers, including computer components, operating systems, and essential software, as well as providing.** **2. Teaching students how to collect and analyze data using Excel or statistical analysis software, creating documents with word processors, and developing presentations.** **3. Enhancing students' online research skills and how to use electronic resources for scientific research.** 4. **Utilizing computer tools to enhance communication and collaboration skills among students, such as using e-mail and online learning platforms.**
Module Learning Outcomes	**LO#1:** Identify and explain the components of a computer and their basic functions. **LO#2:** Analyze agricultural data using Excel and present findings through well-organized documents and presentations. **LO#3:** Evaluate the credibility of online sources when conducting scientific research. **LO#4:** Students should be able to use computer tools to enhance communication with peers, such as e-mail and online learning platforms.
Indicative Contents	Indicative content includes the following. An introduction to the computer and its components, with basic operating systems and their interfaces, will be covered. [SSWL=9 hrs] Focus on the practical use of software for data analysis (Excel), presentations (PowerPoint), and basic troubleshooting techniques to resolve common computer issues. [SSWL=24 hrs] The semester also includes an introduction to the Internet, web browsers, networks, and the basics of e-mail, as well as methods for discovering computer errors and ways to fix them. [SSWL=9 hrs] Total hrs = 47 = SSWL - (Exam hrs) = 47 - 2 = 45 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	• **Practical Sessions**: Provide students with regular lab sessions where they can apply theoretical knowledge directly. Practical exercises such as creating documents, analyzing data using Excel, and troubleshooting common computer problems will enhance skill retention and understanding. • **Project-Based Learning**: Assign group projects where students must apply the tools learned (e.g., Excel, Word, PowerPoint) to solve real-world agricultural problems. For instance, they can analyze agricultural data and present their findings. This promotes collaboration, critical thinking, and problem-solving. • **Blended Learning**: Combine in-person teaching with online resources and platforms. Use e-learning tools, such as video tutorials, quizzes, and discussion forums, to provide additional support outside class. Students can learn at their own pace while reinforcing what they learn in the classroom. • **Discussion and Peer Learning**: Incorporate group discussions and peer review activities. For example, after a practical session, encourage students to present their solutions or projects to the class and give each other feedback. This fosters engagement, critical thinking, and communication skills.

Student Workload (SWL)			
Structured SWL (h/sem)	47	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	28	**Unstructured SWL (h/w)**	1.87
Total SWL (h/sem)	75		

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**	2hr	10% (10)	7	LO #1, #2
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

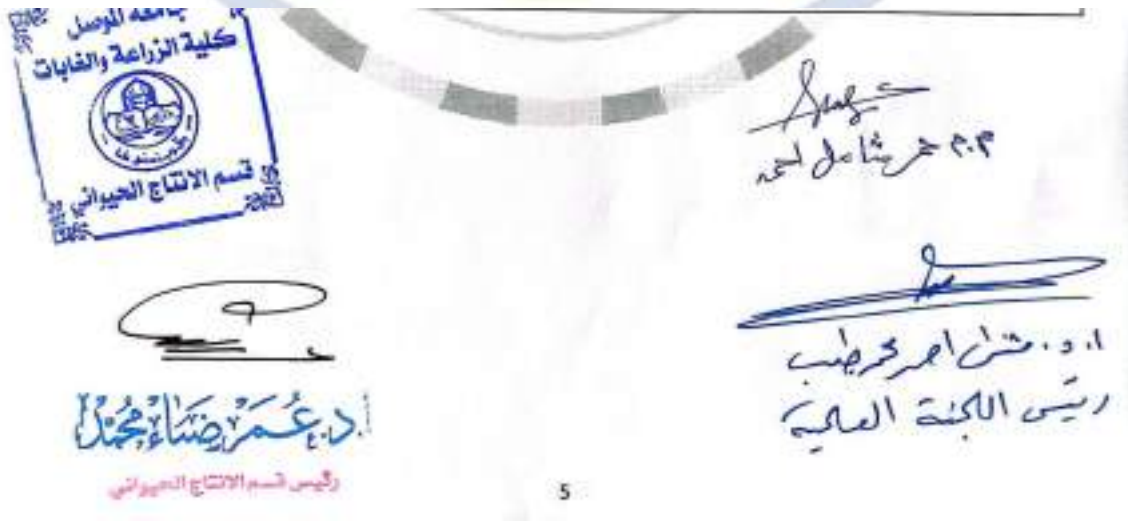
Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Lab 1: **Introduction to Computer**: Concepts of Hardware and Software with their components; Concept of Computing, Data, and Information; Applications of Information Electronics and Communication Technology (IECT); Connecting input-output devices and peripherals to CPU.
Week 2	Lab 2: **Computer Components**: Computer Portions, Hardware Parts, Memory Types, Basic CPU Components, Computer Ports, Personal Computer, Personal Computer (Features and Types).
Week 3	Lab 3: **Operating System and Graphical User Interface GUI**: Operating System, 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 of documents; Text creation and Manipulation; Formatting of text; Table handling: Spell check, language setting, and thesaurus.
Week 5	Lab 5: **Editing Documents**: Editing an agricultural project idea using Word, using all the program's commands and instructions, and with practical application.
Week 6	Lab 6: **Getting Started with Excel**: Formatting a Worksheet, Working with Formulas and Functions, Working with Charts.
Week 7	**Midterm Exam**
Week 8	Lab 8: **Spread Sheet**: Basics of Spreadsheet; Manipulation of cells, Formulas and Functions; Editing of

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
	Spread Sheet, printing of Spread Sheet.
Week 9	Lab 9: **Excel Program in Statistical Analysis:** Collecting Agricultural Data, Organizing Data in Excel, Basic Functions in Statistical Analysis, Creating Graphs and Charts, How to Read Statistical Results, Understandably Presenting Results.
Week 10	Lab 10: Practical Example of Analyzing Agricultural Data Using Excel.
Week 11	Lab 11: **Presentation Software**: Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation/ handouts.
Week 12	Lab 12: Create a presentation of an agricultural project idea using PowerPoint, all the program's commands and instructions, and with practical application.
Week 13	Lab 13: **Introduction to Internet and web browsers**: Basic computer networks, LAN, WAN, Concept 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 e-mail account, sending and receiving e-mails, accessing sent 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	Computer Basics and Office Applications, Ministry of Higher Education and Scientific Research, 2013.	Yes
Recommended Texts	N.A.	-
Websites	▪ https://www.dawliatraining.com/training-packages-single/1025 ▪ https://edu.gcfglobal.org/en/tr_ar-misc/what-is-a-computer-/1/ https://www.edraak.org/programs/course-v1:Edraak+ICDL1+2019SP/	

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 is 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	**DEMOCRACY and HUMAN RIGHTS**	**Module Delivery**	
Module Type	**Basic learning activities**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM1040**		
ECTS Credits	**2**		
SWL (hr/sem)	**50**		
Module Level	1	**Semester of Delivery**	1
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	Alla Mohamed Abdullah Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz **Nofal Issa Mohamed** sumyia khalaf Badawi Firas Kadhim Dawoo Aljuboori Khaled Anwer Khaled ALKHALED Talal Saeed Hameed Muzahim Saeed Al-Bek	**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 firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq` muzahim_saeed@uomosul.edu.iq
Module Leader's Acad. Title	**Professor** **Assistant Professor**	**Module Leader's Qualification**	Ph.D. M.Sc.
Module Tutor	N.A.	**e-mail**	N.A.
Peer Reviewer Name	N.A.	**e-mail**	N.A.
Scientific Committee Approval Date	15/10/2024	**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- Enabling the student to understand and comprehend what is related to human rights, their types, and rights in the heavenly religions. 2- Enabling the student to recognize the types of human rights and human rights according to the Iraqi Constitution in 2005.

	3- Enabling the student to recognize the types and types of governments. 4- Enabling the student to learn about democratic and dictatorial governments and the concept of freedom and the rights of others.
Module Learning Outcomes LOs	The student should be able to: LO#1: Understands everything related to human rights, his rights in divine religions, and the concept of democracy. LO#2: Familiar with the types of general human rights and human rights according to the Iraqi Constitution of 2005. LO#3: Bears the national responsibility to respect human rights, opinion, and the other opinions of the nation's partners. LO#4: Respects the freedoms and rights of others.
Indicative Contents	Indicative content includes the following. Theoretical Enriching the student with knowledge related to human rights and their types, and their relationship to peaceful coexistence with the nation's partners, and the concept of human rights and divine religions, 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. Total hrs = 32 = SSWL - (Exam hrs) = 32-2 = 30 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. Assigning group work to reveal leadership skills

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	20% (20)	2 and 13	LO#1 and LO#3
	Projects / Lab.	-	-	-	-
	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	History of human rights
Week 2	Human rights in heavenly religions
Week 3	Forms of human rights
Week 4	New or modern human rights
Week 5	Human rights in international governmental organizations
Week 6	Human rights in non-governmental organizations, human rights in the Iraqi constitution in 2005
Week 7	Mid-term Exam
Week 8	Types of governments
Week 9	Democratic government
Week 10	Characteristics of democracy
Week 11	Pictures of democratic government
Week 12	Indirect democracy
Week 13	Types of ballots
Week 14	Procedures preliminary elections
Week 15	Types of election
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Human rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2010	Yes
Recommended Texts	1. Universal human rights between theory and practice, written by Jack Donnelly. 2. Human Rights, Children and Democracy, written by: Maher Saleh Allawi Al-Jubouri and others. 3. Human Rights and Public Freedoms, written by: Ramez Muhammad Ammar. 4. The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna. 5. The Philosophy of Human Rights, written by Ansam Amer Al-Sudani. 6. The Concept of Contemporary Democracy, written by: Ali Khalifa Al Kuwari. 7. Democracy, written by Charles Tilly, translated by: Muhammad Fadel. 8. Rooted Democracy and the Problem of Implementation, written by: Muhammad Al-Ahmari. 9. Parliamentary Governments, written by: John Stuart Mill, translated by: Emile Al-Ghouri. 10. Electoral Systems, written by: a group of authors. 11. :The Genesis of Human Rights, written by: Lynn Hunt, translated by .Fayqa Girgis Hanna 12. .The Philosophy of Human Rights, written by Ansam Amer Al-Sudani 13. Human Rights in the Western Religious Heritage and Islam, written by: Muhammad Jalaa Idris and Amal Muhammad Abd al-Rahman Rabie.	No
Websites	1- The United Nations. 2- Office of the High Commissioner, United Nations High Commissioner for Human Rights.	

	3- Amnesty International. 4- UNICEF. 5- International Committee of the Red Cross. -1

Grading Scheme				
Group	**Grade**	التقدير	**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	**ENGINEERING DRAWING**	**Module Delivery**		
Module Type	S	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**		
Module Code	END1030			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	**I**	**Semester of Delivery**	1	
Administering Department	AGME1986	**College**	**AGFO1964**	
Module Leader	Nofal Issa Mohamed	**e-mail**	nofelemh@uomosul.edu.iq	
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**MSc.**	
Module Tutor	N.A.	**e-mail**	N.A.	
Peer Reviewer Name	N.A.	**e-mail**	N.A.	
Scientific Committee Approval Date	15/10/2024	**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. To develop the Agricultural student's ability to imagine projections and their models. 2. Exercising hand movement in engineering drawing to complete quick sketches. 3. This course deals with the theory of Orthographic Projection and the basic subject of isometric drawing. 4. To teach students engineering drawings using the AutoCAD program, which includes both theoretical lectures and labs.
Module Learning Outcomes	**LO#1:** Absorbing all the engineering characteristics of an object or a product in a clear manner. **LO#2:** Know the tools used in engineering drawing and how to use them correctly, **LO#3:** Understand and apply the basics of engineering processes. **LO#4:** Conclude projections and isometrics for each geometric figure and recognize its dimensions.

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 Sheet Dimensions, Information Table, and Letter Writing. • Types of Lines and Basic Geometric Operations: Introduction to different types of lines (continuous, dashed, center lines) and their specific uses in drawings. Performing basic geometric operations such as measuring, dividing, and marking. • Arcs and Tangents: Defining and drawing arcs and tangents in engineering drawings, including field applications. [20 hrs.] • Classwork: Practical Applications of Previous Topics Hands-on practice applying learned techniques (lines, arcs, sheet setup) [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. • Mid-term Exam: Assessment covering the topics learned in Part A and initial projection skills. • Deducing 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.] • Classwork: Practical Applications of Deducing the Third Projection: Applying concepts learned in projection drawing. [4 hrs.] **Part C: Advanced Drawing Techniques and CAD Software** • Drawing Engineering Perspective (Isometric): Introduction to isometric drawing techniques. Drawing objects in isometric view for accurate 3D representation. • Review of Isometric Engineering Perspective: Revisiting the principles of isometric drawing and its application in technical drawings. Understanding the connection between isometric drawings and orthographic projections. [8 hrs.] • Introduction to Computer-Aided Drawing (CAD): Overview of computer-aided drawing, emphasizing its importance in modern engineering. Introduction to software tools like AutoCAD and SolidWorks, including their hardware components and versions. • AutoCAD Interface and Main Commands: Learning the basic interface of AutoCAD, including the drawing and modification toolbar. Explanation of key commands and their uses. • Drawing Simple Geometric Shapes Using AutoCAD: Hands-on practice with AutoCAD to draw basic geometric shapes. [12 hrs] Total hrs = 63 = SSWL - (Exam hrs) = 63 - 3 = 60 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies	
Strategies	**1. Lecture-based Teaching:** • Explaining concepts and demonstrating tools, techniques, and software in real time allows students to observe the process before applying it. **2. Hands-on Practice:** • **Lab Sessions:** Providing practical sessions where students use drawing tools and software like AutoCAD or SolidWorks to develop their skills. • **Guided Exercises:** Offering step-by-step instructions to complete tasks such as drawing isometric 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 topics like projection techniques or CAD tools. **4. Assessment and Evaluation:** • **Project-based 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)	63	**Structured SWL (h/w)**	4
Unstructured SWL (h/sem)	87	**Unstructured SWL (h/w)**	5.8
Total SWL (h/sem)	**150**		

Module Evaluation

As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	1	10% (10)	7	LO#1,Lo#2Lo#3,LO#4
	Assignments-class	5	10% (10)	3, 5, 8, 10, 12	LO#1,Lo#2Lo#3,LO#4
	Assignments-homework	5	10% (10)	2, 4, 6, 9, 13	LO#1,Lo#2Lo#3,LO#4
	Reports	1	10%	14	LO#1,Lo#2Lo#3,LO#4
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO#1,Lo#2Lo#3,LO#4
	Final Exam	3hr	50% (50)	16	LO#1,Lo#2Lo#3,LO#4
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly, Syllabus)	
	Material Covered
Week 1	Introduction and definition of engineering drawing
Week 2	Engineering drawing tools and their uses, knowing types of pens used, Drawing board layout.
Week 3	Explanation of sheet dimensions, information table, and letter writing
Week 4	Types of lines, their applications, and basic geometric operations
Week 5	Arcs and tangents
Week 6	Classwork: Practical applications of previous topics
Week 7	Engineering projections
Week 8	Mid-term Exam
Week 9	Deducing the third projection based on the other two
Week 10	Classwork: Practical applications of deducing the third projection
Week 11	Drawing engineering perspective (isometric)
Week 12	Review of isometric engineering perspective and its relation to deducing the third projection
Week 13	Introduction to the importance of computer-aided drawing and the types of software used for engineering drawing, such as AutoCAD and SolidWorks, including their components and versions.
Week 14	Introduction to the AutoCAD interface and main commands: (Drawing toolbar and its uses, modification toolbar and its uses).
Week 15	Drawing simple geometric shapes using AutoCAD.
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Practical Syllabus)	
	Material Covered
Week 1	Familiarization with different drawing tools, including pens, and setting up the drawing board layout.
Week 2	Practice drawing sheets according to standard dimensions, setting up an information table, and writing technical letters.
Week 3	Identify different line types and execute basic geometric operations (e.g., drawing straight lines, circles).
Week 4	Practice drawing arcs and tangents using drawing tools .
Week 5	Consolidate skills by applying learned 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	Visualize and draw the third projection based on two given views.
Week 9	Work on exercises that reinforce the ability to deduce the third projection, applying this to different objects.
Week 10	Learn to draw isometric projections, emphasizing proper axis alignment and scaling.
Week 11	Review and reinforce isometric drawing techniques and their connection to orthographic projections.
Week 12	Introduction to AutoCAD and SolidWorks; learning the basic interface, including drawing and modification toolbars.
Week 13	Practice using the AutoCAD interface, focusing on drawing commands (e.g., lines, circles) and modification commands (e.g., trim, extend).
Week 14	Create simple geometric drawings using AutoCAD, including 2D shapes like squares, rectangles, and circles.
Week 15	Work on exercises that reinforce the ability to Create simple geometric drawings using AutoCAD.

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	الرسم الهندسي لطلبة كليات الزراعة، د. ناطق صبري حسن، 1990	Yes
Recommended Texts	Textbook of Engineering Drawing k. Venkata Reddy, 2008	-
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 is required but credit awarded
	F – Fail	(0-44)	Considerable amount of work required

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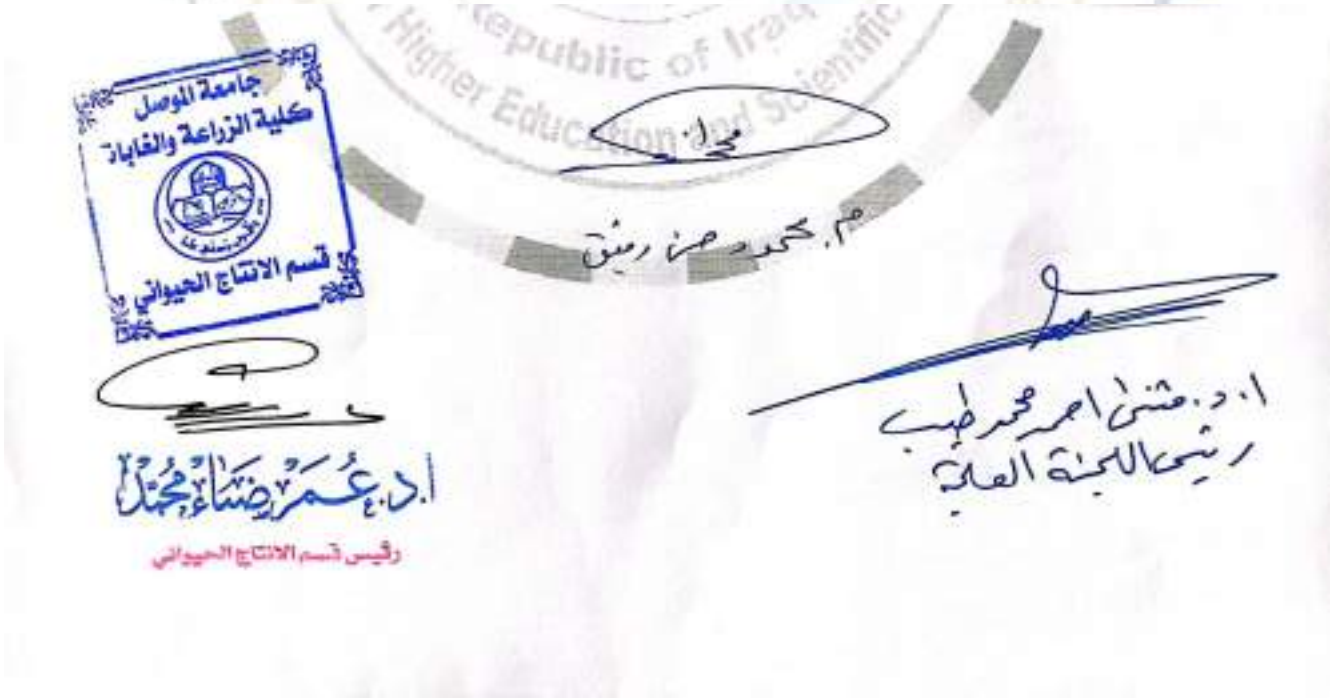


MODULE DESCRIPTION FORM

Module Information			
Module Title	Mathematics	**Module Delivery**	
Module Type	Support or related learning activity	☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	MAT1010		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	**Semester of Delivery**	1
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	Alla Mohamed Abdullah Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz **Nofal Issa Mohamed** sumyia khalaf Badawi Firas Kadhim Dawoo Aljuboori Khaled Anwer Khaled ALKHALED Talal Saeed Hameed Muzahim Saeed Al-Bek	**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 firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq muzahim_saeed@uomosul.edu.iq
Module Leader's Acad. Title	Professor Assistant Professor	**Module Leader's 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	15/10/2024	**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	- -To enable students to acquire proficiency in performing differential calculus operations. - In the field of calculus, the fundamental methodologies used to examine and describe functions are limits, derivatives, and integrals. - Students will use these tools to address application problems across a wide range of disciplines, including physics, biology, business, and economics.
Module Learning Outcomes	**LO#1: The student uses understanding and of the basic concepts of engineering mathematics.** **LO#2: The student can develop his mental abilities when solving exercises.** **LO#3: The student can make connections with information mental abilities when solving exercises to reach a solution and benefit from it in other transactions.**
Indicative Contents	**Indicative content includes the following.** **Theory and Tutorial:** **The focus will be on logarithms - the natural logarithm [SSWL=4 hrs], and applications and solutions will be taken for problems in the exponential function - the trigonometric function - trigonometric facts - complex angles [SSWL=4 hrs], and then the focus will be on differential calculus - derivative laws - derivatives from higher orders such as the equation of the straight line (tangent and perpendicular) and the derivative of trigonometric functions and the derivative of exponential functions - derivatives of logarithmic functions with applications on the derivative (velocity and acceleration) and applications on the derivative (points of inflection) and in hours [SSWL=24 hrs], then moving on to integration calculations - integration laws - definite integration and focusing on integration methods - integration by algebraic substitution - integration by parts and integration methods - integration by partial fractions and in hours [SSWL=12 hrs], then the focus will be on important applied aspects such as finding the area under the curve - the approximate method - by integration calculations and finding the area between two curves With applications of volume of a rotating body and numerical integration Trapezoidal rule and number of hours [SSWL=16 hrs].** **.[SSWL=16 hrs] Trapezoidal rule** **Total hrs = 63 = SSWL - (Exam hrs) = 63 - 3 = 60 hr (Time table hrs x 15 weeks)**

Learning and Teaching Strategies	
Strategies	**Quizzes,** **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)	**112**	**Unstructured SWL (h/w)**	**2**
Total SWL (h/sem)	**175**		

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

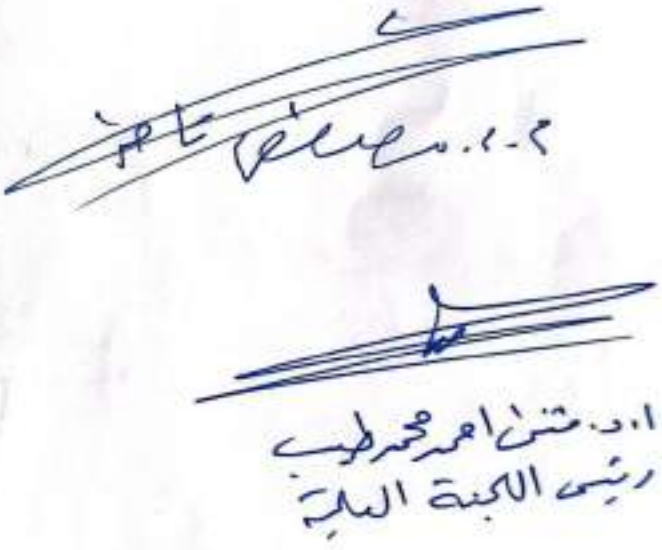
Delivery Plan (Weekly Theory Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Logarithms and natural logarithms
Week 2	The exponential function - the trigonometric function - trigonometric facts compound angles
Week 3	Differential Calculus - Laws of Derivatives - Higher Order Derivatives
Week 4	Equation of a straight line (tangent and normal)
Week 5	Derivative of trigonometric functions
Week 6	Derivative of exponential functions - derivative of logarithmic functions
Week 7	Midterm exam
Week 8	Applications on the derivative (speed and acceleration)
Week 9	Applications to the derivative (inflection points)
Week 10	Introduction to integration calculations - 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 approximate method - using integration Calculations
Week 14	Find the area under the curve
Week 15	Volume of solid revolution and Numerical integrationTrapezoidal rule
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Tutorial Syllabus)	
	Material Covered
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 facts 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 equation of a straight line (tangent and normal)**
Week 5	**Solving exercises and mathematical applications in derivative of trigonometric functions**
Week 6	**Solving exercises and mathematical applications in derivative of exponential functions - derivative of logarithmic functions**
Week 7	**Midterm exam**
Week 8	**Solving exercises and mathematical applications in applications on the derivative (speed and acceleration)**
Week 9	**Solving exercises and mathematical applications in applications to the derivative (inflection points)**
Week 10	**Introduction to integration calculations - 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 approximate method - using integration Calculations**
Week 14	**Solving exercises and mathematical applications in find the area under the curve**
Week 15	**Solving exercises and mathematical applications in volume of solid revolution and Numerical integrationTrapezoidal rule**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Mathematics for Machine Learning author M. P. Deisenroth, A. A. Faisal and C. S. Ong	No
Recommended Texts	Mathematical Handbook of Formulas and Table 1300 Math Formulas	No
Websites	https://mathblog.com/mathematics-books/	

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	**AGRICULTRAL ENGINEERING TECHNIQUES TRANSFER**	**Module Delivery**	
Module Type	**Core learning activity**	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	**AET1040**		
ECTS Credits	**5**		
SWL (hr/sem)	**125**		
Module Level	1	**Semester of Delivery**	1
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	**AGFO1964**
Module Leader	Alla Mohamed Abdullah Omar Dheyaa Mohammed Asmaa Mohammed Adil Moyassar Mohammed Aziz **Nofal Issa Mohamed** sumyia khalaf Badawi Firas Kadhim Dawoo Aljuboori Khaled Anwer Khaled ALKHALED Talal Saeed Hameed Muzahim Saeed Al-Bek	**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 firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq` muzahim_saeed@uomosul.edu.iq
Module Leader's Acad. Title	**Professor** **Assistant Professor**	**Module Leader's 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	15/10/2024	**Version Number**	1.0

Learning and Teaching Strategies			
Relation with other Modules			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1- Developing farm management among rural individuals 2- Developing a sense of responsibility towards the family and the rural community 3- Promoting positive attitudes of rural people towards agriculture, love of work, and use of modern technologies 4- Improving the marketing aspects of rural producers using modern technologies.
Module Learning Outcomes LOs	The student should be able to: LO#1: Know the general concepts of transferring agricultural engineering technologies. LO#2: Determines appropriate means to mobilize farmers in their love of work, development, and selection of agricultural engineering technologies. LO#3: Suggest appropriate technologies for agricultural engineering projects. LO#4: Bear ethical responsibilities in the areas of transferring agricultural engineering technologies.
Indicative Contents	Indicative content includes the following. Theoretical Developing the correct management skills to transfer and adopt agricultural technologies in the precise specialty 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 to develop work in the field of agricultural engineering sciences and methods of transferring them to society to reach high production and quality. Practical application The most important modern technologies in the field of agricultural engineering will be addressed, the most important reasons for their lack of spread will be discussed, and solutions will be put forward for adopting these technologies. Total hrs = 63 = SSWL - (Exam hrs) = 63-3= 60 (Time table hrs x 15 weeks)

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)	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 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	Introduction to agricultural extension and technology transfer
Week 2	Elements of technology transfer and adoption process
Week 3	Factors that determine adoption rates and adopter categories
Week 4	Opinion leaders and agents of change
Week 5	Analyze farmers' needs
Week 6	Guidance methods (training and education methods)
Week 7	Mid-term Exam
Week 8	Transfer of agricultural technologies: concept and methods
Week 9	Challenges facing the transfer of agricultural technologies
Week 10	Using communication and media in agricultural extension
Week 11	Innovating and adapting to modern agricultural techniques
Week 12	Evaluation and follow-up of extension and technology transfer programs
Week 13	Cooperation between agricultural extension workers and the local community
Week 14	Applications of smart technologies in agricultural extension
Week 15	Tools for measuring effectiveness in technology transfer and extension
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Practical Syllabus)

Reviewing modern technology and discussing the most important means of transferring and adopting it by farmers, as well as the obstacles and treatments that ensure adoption:

	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 to enhance 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	**Remote Sensing 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 enhance fertilizer effectiveness.

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	**Drones**: Used for monitoring crops, collecting data, and spraying pesticides.

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	N.A.	-
Recommended Texts	- Al-Tanoubi, Muhammad Muhammad Omar (d) (1998), Agricultural Guidance Reference, Arab Renaissance House for Printing and Publishing, Beirut. - Ghadeeb, Ali Ahmed. The size and importance of the problems of transferring agricultural technologies from the point of view of agricultural employees and farmers of irrigated areas in Nineveh Governorate. Doctoral thesis, College of Agriculture and Forestry - University of Mosul, 2006 - Al-Jubouri, Khattab Abdullah Muhammad (2006), The adoption rate of yellow maize farmers for modern agricultural technologies and its relationship to some variables in the Hawija District in Kirkuk Governorate, Master's thesis, College of Agriculture and Forestry, University of Mosul	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
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	F – Fail	(0-44)	Considerable amount of work required

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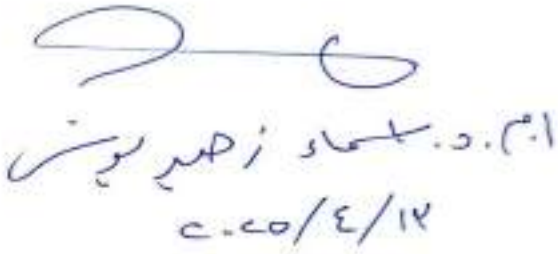


MODULE DESCRIPTION FORM

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**	2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Leader's Acad. Title	Professor **Assistant Professor**	**Module Leader's 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	15/10/2024	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
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 = 125 = SSWL - (Exam hrs) = 125-3= 122 (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)	78	**Structured SWL (h/w)**	5
Unstructured SWL (h/sem)	47	**Unstructured SWL (h/w)**	3
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#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 examples
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 Table
Week 6	Measures of mediation and centering - arithmetic mean - geometric mean
Week 7	Measures of centering and centering - harmonic mean - squared mean - median - mode
Week 8	Measures of dispersion or variation - range - mean deviation - variance and standard deviation
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 Distribution
Week 12	Hypothesis Testing - Statistical Hypothesis - Null Hypothesis - Alternative Hypothesis
Week 13	Types of Error - General Steps in Hypothesis Testing
Week 14	T-test - Z-test
Week 15	Simple Correlation and Regression - Correlation Coefficient
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Syllabus)

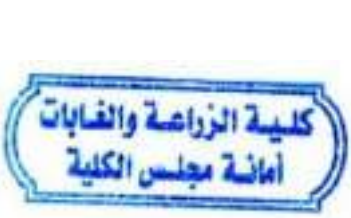
	Material Covered
Week 1	The natural of statistical data
Week 2	The natural of statistical data
Week 3	Statistical symbol
Week 4	Graphical represent and display of data
Week 5	Graphical represent and display of data
Week 6	Measures of mediation and centering
Week 7	Measures of mediation and centering
Week 8	Measure of dispersion or different
Week 9	Measure of dispersion or different
Week 10	Midterm exam
Week 11	Probability theory
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=AfmBOooesbV6jEmBd_tAQSa288D__QY0Hc1yK1i3seCLaNtYAT4ckpyn	

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	**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**	2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Leader's Acad. Title	Professor **Assistant Professor**	**Module Leader's 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	15/10/2024	**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. Part A - Circuit Theory 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)	32	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	93	**Unstructured SWL (h/w)**	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

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-Duwaihji, 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,	No

	Amman-Jordan, 2191 − Issa Hammoud Al-Hassan, "Commercial Promotion of 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

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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	1		**Semester of Delivery**		2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986		**College**	AGFO1964	
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq	
Module Leader's Acad. Title	Professor **Assistant Professor**		**Module Leader's 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	15/10/2024		**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 = 62 = 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" عمر بن اخضر خلفاوي " التنمية المستدامة"	No
Recommended Texts	Abdullah bin Abdulrahman Al-Baridi "Sustainable Development: An Integrated Approach to Sustainability Concepts and Applications" عبدالله بن عبد الرحمن البريدي " التنمية المستدامة : مدخل تكاملي لمفاهيم الاستدامة وتطبيقاتها"	
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	**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, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Leader's Acad. Title	Professor **Assistant Professor**	**Module Leader's 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	15/10/2024	**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. 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.**
Indicative Contents	Indicative content includes the following. Theoretical 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 = 125 = 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)**

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 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	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	Introduction to Biological Diversity
Week 2	Taxonomy and Scientific Nomenclature
Week 3	Genetic Diversity and Evolution
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
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
Week 14	Biodiversity and Sustainable Development
Week 15	Natural Resource Management and Sustainable Use
Week 16	Future Directions in Biodiversity Enhancement

Delivery Plan (Weekly Laboratory Syllabus)	
	Material Covered
Week 1	Future Directions in Biodiversity Enhancement
Week 2	Collection and Classification of Plant and Animal Samples
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)
Week 8	Community Analysis of Biotic Assemblages
Week 9	In-situ and Ex-situ Conservation Techniques
Week 10	Studying the Impact of Climate Change on Biotic Communities
Week 11	Field Visit to High-Biodiversity Areas
Week 12	Data Documentation and Analysis Using Statistical Software
Week 13	Designing Models for Biodiversity Conservation and Sustainable Use
Week 14	Developing Management Plans for Species Protection
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, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Leader's Acad. Title	Professor **Assistant Professor**	**Module Leader's 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	15/10/2024	**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.
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#2: Apply biosafety and biosecurity principles and practices in accordance with recognized international standards and levels. LO#3: Design and implement prevention and control programs for biological hazards in laboratories and agricultural/food production facilities. LO#4: Adhere to ethical and legal considerations when handling biological materials, ensuring public health and environmental protection.
Indicative Contents	Indicative content includes the following. Theoretical 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 = 75 = 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)**

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**	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	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	Mid-term Exam
Week 8	Safe Storage, Handling, and Transport of Biological Materials
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
Week 14	Case Studies and Practical Applications in Biosafety and Biosecurity
Week 15	Workshops and Simulations for Biosafety Protocol Design
Week 16	Comprehensive Review and Final Assessment

Delivery Plan (Weekly Syllabus)	
	Material Covered
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
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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.

كلية الزراعة والغابات
أمانة مجلس الكلية

جامعة الموصل
كلية الزراعة والغابات
قسم الانتاج الحيواني

أ.د. عمر ضياء محمد
رئيس قسم الانتاج الحيواني

أ.د. خالد حساني سلطان
رئيس اللجنة العلمية

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	1	**Semester of Delivery**	2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	AGFO1964
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Leader's Acad. Title	Professor **Assistant Professor**	**Module Leader's 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	15/10/2024	**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)

	32		2
Unstructured SWL (h/sem)	18	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	50		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	15% (15)	4,6,9	LO#1, LO#3
	Home Assignments	2	10% (10)	2 and 12	LO#1, LO#4
	Collage Assignments	1	5% (5)	10 and 11	LO#2
	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
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
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 Ḍād and the letter Ḍād
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.

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	ين ذريل، عدنان " اللغة والأسلو ب دراسة" الطبعة الثانية ، 2006	No
Recommended Texts	بحيري، سعيد حسن، "الاساس في فقه اللغة العربية 2000	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 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	**Semester of Delivery**	2
Administering Department	SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986	**College**	**AGFO1964**
Module Leader	**zwaid fathiy abd** Omar Dheyaa Mohammed Asmaa Mohammed Adil **Moyassar Mohammed Aziz** **Nofal Issa Mohamed** **Taha Mohammed Taki** **Firas Kadhim Dawoo Aljuboori** **Khaled Anwer Khaled ALKHALED** **Talal Saeed Hameed** 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 nofelemh@uomosul.edu.iq tahataqi@uomosul.edu.iq firasaljuboori@uomosul.edu.iq khalid.anwar31@uomosul.edu.iq stalal1982@uomosul.edu.iq sumod_husain@uomosul.edu.iq
Module Leader's Acad. Title	Professor **Assistant Professor**	**Module Leader's 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	15/10/2024	**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.

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
	Midterm Exam	2hr	10% (10)	8	LO#1, LO#2

Summative 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.

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أمانة مجلس الكلية

د. منتصر خيري حسين

جامعة الموصل
كلية الزراعة والغابات
قسم الانتاج الحيواني

أ.د. عمر رضاء محمد
رئيس قسم الانتاج الحيواني

أ.د. خالد حساني سلطان
رئيس اللجنة العلمية