



قسم تقنيات النباتات الطبية والنواتج الطبيعية

Republic of Iraq Ministry of Higher Education &
Scientific Research

Northern Technical University
Technical Agricultural College/ Mosul

Department of Medicinal Plant Technologies and
Natural Products



قسم تقنيات النباتات الطبية والنواتج الطبيعية

مقررات المستوى الاول / الفصل الاول



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
Module Title	Democracy and human rights		Module Delivery	
Module Type	B		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	NTU 100			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	1	Semester of Delivery		1
Administering Department	Medicinal Plant Technologies and Natural Products		College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor	Saif mohamed mahmod		e-mail	saifmohamedrosl@gmail.com
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. Introducing the student to the most important laws related to human rights 2. Introducing the student to the most important Iraqi constitutions and their relationship to human rights. 3. Teaching the student to respect the freedom of others in dealing with him, taking into account the differences in cultures in the Iraqi environment
Module Learning Outcomes	1. Definition of human rights, goals of human rights 2. Learn about human rights through the divine books. 3. The student must have complete knowledge of human rights rules and the international and regional recognition of these rights 4. Teach the student that freedom of expression is guaranteed by the Iraqi Constitution 5. Identify the components of the social fabric and the differences in their cultures and languages.
Indicative Contents	Indicative content includes the following. <u>Part A - theoretical part</u> 1. Relying on accumulated information on the topic [2] 2. Relying on the ability to focus on information[2] 3. Clarifying the idea and defining the goal of the lesson[2] The ability to collect information about the topic by asking questions[2]

Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others and their different cultures. Obtaining new information in the field of human rights. Good training and familiarization with regional constitutions and their observance of human rights. Access to modern scientific literature. Participate in literary forums related to freedom of expression and respect for the opinions of others.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.20
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	15% (15)	Continuous	All
	Assignments	5	5% (5)	Continuous	All
	Assignments Homework	5	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Human rights, their definition, and goals.
Week 2	The roots of human rights and their development in human history. Human rights in ancient times
Week 3	Human rights in ancient civilizations, especially the Mesopotamian civilization
Week 4	Human rights in divine laws, with a focus on human rights in Islam
Week 5	Human rights in the Middle Ages. Human rights in doctrines, schools and political theories. Human rights in companies, their advertisements, revolutions, and constitutions
Week 6	Human rights in contemporary and modern history: international recognition of human rights
Week 7	Regional international recognition of human rights
Week 8	Non-governmental organizations and human rights
Week 9	National human rights organizations
Week 10	Human rights in Iraqi constitutions between reality and theory
week 11	The relationship between human rights and public freedoms in the Universal Declaration of Human Rights
Week 12	The relationship between human rights and public freedoms in regional charters and national constitutions
Week 13	Necessary human rights and collective human rights
Week 14	Economic, social and cultural human rights and civil and political human rights
Week 15	Modern human rights: facts in development, the right to a clean environment
Week 16	final exam

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	محاضرات في الديمقراطية و حقوق الانسان	Yes
Recommended Texts		
Websites	قسم تقنيات النباتات الطبية والنواتج الطبية	

Grading Scheme				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	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				
Module Title	English Language 1		Module Delivery	
Module Type	B		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	NTU 101			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	1	Semester of Delivery		1
Administering Department	Medicinal Plant Technologies and Natural Products		College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	PhD
Module Tutor	Assistant Prof. Dr. Abd Al-Bar Al-Farha		e-mail	dr.abdalbar@ntu.edu.iq
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. Introduce students to the fundamental rules of the English language, fostering a comprehensive understanding of its structure and usage. 2. Explore the origins and components of speech and sentences, including their various types, to deepen students' understanding of language construction. 3. Develop students' skills in correctly pronouncing English vocabulary, ensuring clarity and accuracy in verbal communication.
Module Learning Outcomes	After completing this module, students will be able to: 1. Demonstrate a foundational understanding of the English language, including its structure, vocabulary, and grammar. 2. Communicate clearly and confidently in spoken English, adhering to the conventions of the language. 3. Accurately articulate letters and vocabulary, enhancing their pronunciation skills for improved verbal communication. 4. Construct grammatically correct sentences with minimal errors, showcasing their writing proficiency.
Indicative Contents	Indicative content includes the following. <u>Part A - theoretical part</u> 1. Relying on accumulated information on the topic [2] 2. Relying on the ability to focus on information[2] 3. Clarifying the idea and defining the goal of the lesson[2] 4. The ability to collect information about the topic by asking questions[2]

Learning and Teaching Strategies

Strategies	1. Interactive Activities: Use games and role-plays to engage students and enhance speaking skills. 2. Visual Aids: Incorporate pictures, flashcards, and videos to support vocabulary and comprehension. 3. Repetition and Practice: Encourage regular practice through drills and exercises to reinforce learning. 4. Group Work: Facilitate collaborative learning in pairs or small groups to promote communication. 5. Scaffolding: Break down complex concepts into manageable parts and gradually increase difficulty. 6. Multisensory Approaches: Engage multiple senses with auditory, visual, and hands-on activities. 7. Contextual Learning: Teach language in real-life contexts to enhance
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	practical usage. 8. Feedback and Assessment: Provide constructive feedback and use formative assessments to track progress. 9. Use of Technology: Integrate language learning apps and online resources for additional practice. 10. Cultural Exposure: Introduce students to English-speaking cultures to increase motivation and context.
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Student Workload (SWL)			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	1.13
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	50		



Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	2	10% (10)	Continuous	All
	Assignments Homework	5	10% (10)	Continuous	All
	Report	5	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Hello!
Week 2	Your world
Week 3	All about you
Week 4	Family and friends
Week 5	The way I live
Week 6	Every day
Week 7	My favourites
Week 8	Where I live
Week 9	Time past
Week 10	We had a great time
Week 11	I can do that
Week 12	Please and thank you
Week 13	Here and now
Week 14	It's time to go
Week 15	Review of the article
Week 16	final exam

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	1. Headway plus, pre-intermediate student's book	Yes
Recommended Texts	2. Headway plus, intermediate student's book	Yes
Websites		

Grading Scheme				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with significant shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work is required but credit awarded
(0 - 49)	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				
Module Title	General Chemistry		Module Delivery	
Module Type	B		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	TAMO 100			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1	Semester of Delivery		1
Administering Department	Medicinal Plant Technologies and Natural Products		College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor			e-mail	
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	The student becomes familiar with the classification of chemical elements, types of acids, salts, and bases and their properties, and is able to detect them.
Module Learning Outcomes	- Identify solutions and methods of preparing them. - Identify the preparation of diluted and concentrated acids and stimulants. - Identify the principles of chromatographic analysis.
Indicative Contents	Indicative content includes the following. General Chemistry: You learn basic concepts such as atomic structure, electronic structure, ions, and forces operating between molecules.[10] Accurate analysis: To learn how to collect and extract a sample, analyze statistics, and use advanced technological measurements.[10] Thermodynamics and Kinetics: For practice in understanding the laws of thermodynamics and how they relate to chemical systems.[10] Spectrometry and Spectroscopy: Ratios between electromagnetic readings and matter have been discovered.[10].

Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5.20
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.80
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	onsite Assignments	5	10% (10)	Continuous	All
	Projects / Lab.	2	10% (10)	Continuous	All
	Report	5	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Periodic classification of elements
Week 2	Atomic structure
Week 3	Electronic distribution of atoms in the periodic table
Week 4	Electronic theory of valence
Week 5	Chemical bonds
Week 6	Acids base and salts
Week 7	Reduction and oxidation reactions
Week 8	Balancing in acidic and basic media
Week 9	Standard electrode voltage
Week 10	Nuclear chemistry
Week 11	The predominant nonmetallic elements
Week 12	Ideal gases
Week 13	Halogens, their properties and preparation, general properties of group six elements
Week 14	General characteristics of the elements in the fifth group
Week 15	General properties of the elements in group four

Week 16	Exam
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Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	A visit to the chemistry laboratory and learning about the devices and equipment
Week 2	Safety in chemical laboratories, dealing with chemicals (simple distillation, crystallization and filtration)
Week 3	Use of some laboratory equipment
Week 4	Data processing and results
Week 5	Estimate the boiling point
Week 6	Estimation of melting point
Week 7	Purification of chemical materials (simple distillation, crystallization and filtration)
Week 8	Estimation of dissolution yield
Week 9	Determination of molecular weight by the Victormier method
Week 10	Estimating the molecular weights of non-ionized substances
Week 11	Estimation of equivalent weights (electrochemical method)
Week 12	Estimation of equivalent weights (electrochemical method)
Week 13	Estimating the reaction rate
Week 14	Estimation of chemical equilibrium
Week 15	Estimation of chemical equilibrium
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	General chemistry, 2014 مبادئ الكيمياء العامة، د. محي الدين البكوش 2024	Yes
Recommended Texts	General Chemistry, 2020	No
Websites	https://praxilabs.com/arabic/blog/6-most-important-chemistry-laws/	

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				
Module Title	General Botany		Module Delivery	
Module Type	C		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	PMNP 100			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level	1	Semester of Delivery		1
Administering Department	Medicinal Plant Technologies and Natural Products		College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title		Module Leader's Qualification		
Module Tutor	Zeyad amer mostfa		e-mail	mti.lec96.zeyad@ntu.edu.iq
Peer Reviewer Name		e-mail		
Scientific Committee Approval Date		Version Number		

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

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. Introducing the student to the most important basic information about different plants, their reproduction, propagation, and breeding 2. Teaching and training the student to know its plant classification . 3. Teaching and training the student to take plants tissue.
Module Learning Outcomes	1. The use of techniques to confront desertification and moisture tension 2. The possibility of managing agricultural and livestock activity in dry agriculture areas in order to achieve the best possible efficiency 3. Developing means, equipment and machinery in line with the nature of dry areas. 4. The student has knowledge about dry areas and their nature 5. Identify the available techniques to cope with drought 6. Identifying the nature of plants and their types and the extent to which they are affected by the environment of this region.
Indicative Contents	Indicative content includes the following. <u>Part A - theoretical part</u> Kingdom monerans,protests Structure of Euglena, fission and action, The Fungi, Growth of mushroom. [3 hrs] The plant kingdom, Vascular plants, Cell structure . [3 hrs] Cell division, The flowering plants, Root system, the region of cell division. [3 hrs] Structure of stem, buds, Leaf Structure, Flowers(describe, pollination and fertilization). [3 hrs] Fruits and seeds, Energy transfer in green leaves, stomata), Seed Germination. [3 hrs] <u>Part B - practical part</u> Plant classification, Using alight microscope to stading cell Cell division. [9 hrs]. Chemical compound of plant, Plant body study, Gymnosperm plants. [9 hrs]. Angiosperm plants , Experment about diffusion and osmosis, Absorption and tran sport of water. [9 hrs]. Transport Across cell memberans, Anotomy of roots, stems, leaves and flowers, Show scientific films . [9 hrs]. Seed structure and Germination, Vegetative reproduction, Plant hormones. [9 hrs].

Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	6.46
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	5	10% (10)	Continuous	All
	Projects / Lab.	5	10% (10)	Continuous	All
	Report	5	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Kingdom monerans, protests
Week 2	Structure of Euglena, fission and action
Week 3	The Fungi, Growth of mushroom
Week 4	The plant kingdom
Week 5	Vascular plants
Week 6	Cell structure
Week 7	Cell division
Week 8	The flowering plants
Week 9	Root system, the region of cell division
Week 10	Structure of stem, buds
Week 11	Leaf Structure
Week 12	Flowers (describe, pollination and fertilization)
Week 13	Fruits and seeds
Week 14	Energy transfer in green leaves, stomata)
Week 15	Seed Germination
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Plant classification
Week 2	Using a light microscope to staining cell
Week 3	Cell division
Week 4	Chemical compound of plant
Week 5	Plant body study
Week 6	Gymnosperm plants
Week 7	Angiosperm plants
Week 8	Experiment about diffusion and osmosis
Week 9	Absorption and transport of water
Week 10	Transport Across cell membranes
Week 11	Anatomy of roots, stems, leaves and flowers
Week 12	Show scientific films

Week 13	Seed structure and Germination
Week 14	Vegetative reproduction
Week 15	Plant hormones
Week 16	Exam

Learning and Teaching Resources		
	Text	Available in the Library
Required Texts	General Botany, 2014 علم النبات، 2014، د. عبدالعزيز الصباغ، د. عماد القاضي	Yes
Recommended Texts	General Botany, 2020	No
Websites	https://www.everand.com/book/282617930/General-Botany	

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	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	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				
Module Title	Medical Plants		Module Delivery ☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Type	C			
Module Code	PMNP 101			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level		1	Semester of Delivery	1
Administering Department		Medicinal Plant Technologies and Natural Products	College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor	Fatimah Ibrahim Sultan		e-mail	drfatimah@ntu.edu.iq
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	

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

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. Learn about gardening basics 2. Differentiate between the main horticultural science departments
Module Learning Outcomes	1. The student learns about the types of plants: fruits, vegetables, and ornamental plants 2. The student studies plant families 3. The student learns the effect of environmental factors on plant growth 4. The student learns about different methods of planting seeds 5. The student learns about methods of creating orchards
Indicative Contents	Indicative content includes the following. Part A - theoretical part Definition of horticulture, its divisions, and methods of dividing plants . [3 hrs] Plant families and their importance in identifying plants to know their needs and planting times [3 hrs] Growth problems and environmental needs are fundamental [3 hrs] Part B - practical part Preparing different growing media and identifying their types in the field . [9 hrs]. Identify the different horticultural facilities and tools for agriculture . [9 hrs]. Planting seeds of ornamental plants, fruits and vegetables . [9 hrs]. Conducting various vegetative propagation operations . [9 hrs]. Following up on planted plants, fertilizing them, and combating diseases that affect plants [9 hrs].

Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	97	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	6.46
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	175		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	5	10% (10)	Continuous	All
	Projects / Lab.	10	10% (10)	Continuous	All
	Report	5	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Medicinal plants and herbs, economic importance, benefits and uses
Week 2	Genetic origins of medicinal plants, production and cultivation of medicinal plants
Week 3	Used parts of medicinal plants, their types and methods of use
Week 4	Medicinal and aromatic plants, economic importance, methods of reproduction
Week 5	Methods of marketing medicinal plants
Week 6	Collecting medicinal plants, the effect of the collection date on the effectiveness of medicinal plants
Week 7	Methods of drying and storing medicinal plants, the effect of the storage process on the active ingredients
Week 8	Active substances in medicinal plants, active ingredients
Week 9	Using methods of extraction and separation of active substances
Week 10	Pharmacological effects and how they are synthesized within the plant
Week 11	Propagation of medicinal plants using tissue culture technology
Week 12	Oils extracted from medicinal plants, their types, and how to use them
Week 13	Juices extracted from medicinal plants, their types, and how to use them
Week 14	Medicinal herbal ointments, their types, how to use them
Week 15	A visit to a medical herbarium to learn about the existing species and their characteristics
Week 16	final Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Visit the medicinal plants laboratory and learn about dried medicinal and aromatic plants
Week 2	Classification of medicinal plants, scientific names, local names
Week 3	Methods of collecting medicinal plants in the field
Week 4	Methods of cleaning and drying medicinal plants and storing them in the laboratory
Week 5	Methods of preserving medicinal plants and their parts
Week 6	Practical marketing of medicinal plants
Week 7	Cultivation of some medicinal plants in the laboratory, cumin, basil, anise
Week 8	Identify the fruits of nutmeg, dandelion, cloves, ginger
Week 9	Prepare medicinal herbal syrup from chamomile, hibiscus, anise
Week 10	Extracting oils from cloves, black seed, nutmeg, and safflower
Week 11	A visit to one of the factories for extracting oils and ointments from medicinal plants

Week 12	Identifying aromatic plants in the field and laboratory
Week 13	Jasmine plant, botanical description, method of cultivation and reproduction
Week 14	Processing the jasmine plant and extracting fragrance from it
Week 15	Visit specialized herbalists in local markets
Week 16	Exam

قسم تقنيات النباتات الطبية والنواتج الطبيعية

Learning and Teaching Resources		
	Text	Available in the Library
Required Texts	النباتات الطبية والعطرية 2019 د. عبده عمران محمد د. فكري كمال كامل	Yes
Recommended Texts	النباتات الطبية 1997 د. حليمي عبدالقادر	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

نموذج وصف المادة الدراسية

Module Information			
Module Title	Fundamental of soil science		Module Delivery
Module Type	C		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☐ Seminar
Module Code	DES 101		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	1
Administering Department	Medicinal Plant Technologies and Natural Products	College	Technical Agricultural College of Mosul
Module Leader	Janan kassim khorshed	e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title		Module Leader's Qualification	Master
Module Tutor	Ruaa Nawfal Nafea AlShamaa	e-mail	Ruaaa9@ntu.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives	Course objectives - Learn about soil science and related sciences: 1- Identify the factors of soil formation and its formation processes. 2- Identify the morphological characteristics of the soil and how to collect soil data from the field. Preparing the samples taken to conduct estimates on them. 3- Measuring morphological characteristics in the field, such as color, composition, and humidity. 4- Measuring soil chemical characteristics - colloids - organic matter - exchange capacity - ion exchange - ph - E.C. 5- Measuring physical characteristics such as humidity, true density, and calculating porosity - knowing the mechanical analysis of soil to determine its components.
Module Learning Outcomes	g-Cognitive objectives 1- Identify the composition of the soil and its organic states. 2- The relationship between soil components and plant condition 3- Paying attention to the quality of soil water, air, soil temperature, and moisture stress. 3- Identify colloids, their types, and their relationship with the organic state. 4- Learn how to manage soil, manage water, and maintain soil fertility and productivity. 5- Submitting reports on the quality of the soil, its organic state, the quality of irrigation water, and the suitability of groundwater wells for irrigation. D- The skills objectives of the course. 1- Estimating soil moisture and its potential to achieve agricultural production. 2- Estimating the soil texture to determine the quality of the soil. 3- Estimating the ketone exchange capacity in relation to fertilization. 4- Determine the salinity of river irrigation water or groundwater 5- The ability to determine the salinity and acidity of the soil, which is related to fertilization, salinization, and agriculture.

Indicative Contents	1- That what the student studies should be consistent with his inclinations and thinking trends 2- That the student feels the importance of correcting refractive errors in the eye 3-The student should listen carefully to the professor's explanation 4- That the student feels what cognitive excellence and excellence mean 5- That the student recognizes the impact of science and scientists 6-The student must pay attention to respecting the time and class system
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1-Types of communication in the field of work 2- The ability to express ideas clearly and reliably 3- Teamwork.

Student Workload (SWL)			
Structured SWL (h/sem)	78	Structured SWL (h/w)	5.2
Unstructured SWL (h/sem)	67	Unstructured SWL (h/w)	4.5
Total SWL (h/sem)	150		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	2	10% (10)	Continuous	All
	Study sessions	2	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		



Delivery Plan (Weekly Practical Syllabus)	
	Material Covered
Week 1	Definitions and concepts of soil pedology
Week 2	Origin and development of soil
Week 3	Soil formation processes
Week 4	Soil physical properties
Week 5	Soil building
Week 6	Soil temperature
Week 7	Soil water classification
Week 8	Colloids and soil chemical properties
Week 9	Organic colloids
Week 10	Soil biological properties
Week 11	Problems of salt accumulation in the soil
Week 12	The effect of soil salinity on agricultural production
Week 13	Necessary elements in the soil and their relationship to plant growth
Week 14	Phosphorus
Week 15	Classification of soils and lands in Iraq

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Soil basics
Week 2	Estimating soil moisture content
Week 3	
Week 4	
Week 5	True density and bulk density of soil
Week 6	Volumetric analysis of soil particles
Week 7	Estimation of soil cation exchange capacity
Week 8	Estimating the degree of soil interaction
Week 9	
Week 10	Determination of calcium and magnesium in soil and plants
Week 11	
Week 12	Estimation of organic matter in soil
Week 13	
Week 14	Determination of calcium carbonate
Week 15	
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Basics of soil science / translated by Saleh Mahmoud	yes
Recommended Texts	Recommended books and references (scientific journals, reports,....)	yes
Websites	Electronic references, Internet sites	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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قسم تقنيات النباتات الطبية والنواتج الطبيعية

مقررات

المستوى الاول / الفصل الثاني



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
Module Title	Computer 1		Module Delivery ☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Type	B			
Module Code	NTU 102			
ECTS Credits	3			
SWL (hr/sem)	75			
Module Level		1	Semester of Delivery	2
Administering Department		Medicinal Plant Technologies and Natural Products	College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor	Alaa Raja Ali Mostafa		e-mail	alaa.raja@ntu.edu.iq
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	

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

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1- Understand the basics of computing: Provide students with a basic understanding of computing concepts, including its history, development, and types of computing systems. 2- Learn to use operating systems and basic software: Provide students with basic skills to use operating systems effectively and learn to use office software such as word processors, spreadsheets, and presentation software. 3- Developing basic programming skills: Teaching students the basics of programming through programming languages such as Python or Java, enabling them to write simple programs and understand different programming concepts. 4- Learn about the basics of software engineering: clarify software engineering concepts such as analysis, design, and testing, and how to apply them in software development. 5- Enhancing practical skills and creative thinking: Encouraging students to solve computer problems in creative ways and use the acquired programming skills to produce effective solutions. 6- Promoting interaction and teamwork: Encouraging students to collaborate on group programming projects and in solving complex programming problems.
Module Learning Outcomes	1. Understand basic concepts in computer science such as data, software, hardware, and networks. 2. Ability to analyze problems and understand basic algorithms used in programming and software development. 3. Learn basic programming languages such as C, Python, or Java and understand the basics of writing and executing code. 4. Ability to use software development tools such as text editors and integrated development environments (IDEs). 5. Understand the concepts of information security and privacy in the context of technology use. 6. The ability to understand and analyze computer systems, networks, and communication concepts between devices. 7. Learn about artificial intelligence concepts and their basic applications. 8. Learn about the basics of operating systems and how to manage computer resources and processes.
Indicative Contents	1. Introduction to computer science and its history. 2. Basic concepts such as data, processing and storage. 3. Numerical systems and conversion between them (decimal, binary, octal, and hexadecimal). 4. Computer structure and its main units (central processor, memory, input/output). 5. Basic programming and algorithms. 6. Programming languages and software development methods. 7. Data structures and advanced concepts in programming. 8. Information security and privacy in computing. 9. Fundamentals of computer networks and communications. 10. Introduction to operating systems and resource management. 11. Basic artificial intelligence and machine learning concepts. 12. Ethics and social responsibility in the use of technology.

Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	5	10% (10)	Continuous	All
	Projects / Lab.	2	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction to Computers • Key Vocabulary: Computer, Hardware, Software, System Unit, Peripherals, Input/Output Devices • Concepts: What is a computer? Overview of hardware and software, and how they work together. Introduction to the basic types of input and output devices. • Definition of a Computer: A machine designed to carry out computations and tasks through programmed instructions.
Week 2	Computer Components and Architecture • Key Vocabulary: Central Processing Unit (CPU), Memory, Motherboard, Power Supply, Bus, Clock Speed, Cache • Concepts: Basic internal components of a computer and how they function. The role of the CPU as the brain of the computer, and the importance of memory (RAM, ROM). • Function of Components: How data flows through the computer (input → processing → output).
Week 3	Operating Systems • Key Vocabulary: Operating System (OS), Graphical User Interface (GUI), Command-Line Interface (CLI), Kernel, File System • Concepts: What an OS does, types of operating systems (Windows, macOS, Linux), and their interfaces. The role of the OS in managing hardware and software resources. • Definition of an OS: Software that manages computer hardware, software, and provides a user interface.
Week 4	Types of Software • Key Vocabulary: System Software, Application Software, Utility Programs, Programming Languages, Open Source Software, Proprietary Software • Concepts: Difference between system software (e.g., operating systems) and application software (e.g., word processors). Introduction to utilities and the role of programming languages in creating software. • Examples: Microsoft Word (Application Software), Windows 10 (System Software), Antivirus (Utility).
Week 5	Data and Information • Key Vocabulary: Data, Information, Binary, Bit, Byte, Kilobyte (KB), Megabyte (MB), Gigabyte (GB), Terabyte (TB) • Concepts: Data vs. information, how data is stored in computers (binary system). Units of digital data storage and transfer rates. • The Binary System: How computers use binary (0s and 1s) to represent and store data.
Week 6	File Management and Storage Devices • Key Vocabulary: File, Folder, Directory, File Extension, Hard Drive, Solid State Drive (SSD), Optical Discs (CD/DVD), USB Flash Drive • Concepts: Organizing and storing files, types of storage devices, and understanding file extensions.

	• File Management: How files are organized in a file system (directories, folders).
Week 7	Introduction to Networks • Key Vocabulary: Network, Local Area Network (LAN), Wide Area Network (WAN), Internet, Router, Switch, IP Address, Network Interface Card (NIC) • Concepts: Basics of networking, types of networks, and the components of a network. • Network Types: How LAN and WAN differ, and the role of routers and switches in managing network traffic.
Week 8	The Internet and the Web • Key Vocabulary: Internet, World Wide Web (WWW), Web Browser, URL, Hyperlink, HTTP/HTTPS, Search Engine, Website • Concepts: The difference between the internet and the web, how browsers work, and the role of websites. • Key Technologies: Introduction to URLs and protocols like HTTP/HTTPS, the concept of web servers and browsers.
Week 9	Cloud Computing • Key Vocabulary: Cloud Computing, Cloud Storage, SaaS (Software as a Service), IaaS (Infrastructure as a Service), PaaS (Platform as a Service) • Concepts: What cloud computing is and how it allows access to computing resources over the internet. Understanding cloud storage and cloud-based software services. • Examples: Google Drive (Cloud Storage), Google Docs (SaaS).
Week 10	Security and Privacy • Key Vocabulary: Cybersecurity, Malware, Virus, Firewall, Encryption, Phishing, Ransomware, Authentication • Concepts: Basics of computer security, the importance of protecting data, and common security threats. • Cybersecurity Measures: Firewalls, encryption, antivirus software, and the role of authentication (passwords, two-factor authentication).
Week 11	Input and Output Devices • Key Vocabulary: Input Devices, Output Devices, Keyboard, Mouse, Monitor, Printer, Scanner, Touchscreen, Webcam, Microphone • Concepts: What input and output devices are, and how they facilitate human-computer interaction. • Function of Devices: How input devices send data to the computer and output devices display or print data.
Week 12	Introduction to Programming • Key Vocabulary: Programming, Algorithm, Code, Compiler, Debugging, Source Code, High-Level Language, Low-Level Language • Concepts: What programming is, basic programming concepts, and how programs are developed and executed. • Programming Languages: High-level languages (e.g., Python, Java), low-level languages (e.g., Assembly).
Week 13	The Digital World and Ethics • Key Vocabulary: Digital Citizenship, Intellectual Property, Copyright, Piracy, Netiquette, Online Etiquette

	• Concepts: The ethical use of technology and the internet. Understanding intellectual property and responsible digital behavior. • Digital Citizenship: Ethical practices and respecting others' rights online (e.g., respecting copyright, avoiding piracy).
Week 14	Troubleshooting and System Maintenance • Key Vocabulary: Troubleshooting, Diagnostics, Error Message, System Restore, Backup, Update, Reboot • Concepts: Understanding common computer issues, how to troubleshoot, and the importance of system maintenance (updates, backups). • Routine Maintenance: Checking for software updates, performing system restores, backing up data.
Week 15	Review and Final Examination • Key Vocabulary: Review of all terms from the previous weeks • Concepts: A comprehensive review of all topics covered throughout the course. • Activities: Final exam or project to demonstrate the understanding of computer concepts and terminology.
Week 16	final Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Introduction to the Computer Lab • Key Vocabulary: Computer, Hardware, Software, Peripheral Devices, Power Button, Keyboard, Mouse, Monitor, Desktop, Taskbar • Activities: ◦ Turn on/off the computer, log into the operating system. ◦ Explore the desktop, taskbar, and desktop icons. ◦ Identify and connect peripherals (keyboard, mouse, monitor). • Skills: Familiarity with the lab environment, basic navigation, and peripheral connections.
Week 2	Operating System Interface (Windows/macOS/Linux) • Key Vocabulary: Desktop, Taskbar, Start Menu, Icons, Windows Explorer, File Explorer, Menu Bar, Dock, Shortcuts • Activities: ◦ Navigate the operating system interface (Windows or macOS). ◦ Open, resize, and manage windows. ◦ Explore the Start Menu (Windows) or Finder (macOS). • Skills: Basic file management (opening, closing, and resizing windows).
Week 3	File Management and Organization • Key Vocabulary: File, Folder, Directory, Path, File Extension, File Types (e.g., .docx, .jpg, .txt), Save As, Copy, Paste, Cut, Rename, File Explorer

	• Activities: ○ Create, rename, copy, and delete files and folders. ○ Organize files into folders and subfolders. ○ Save and manage files with different file extensions. ○ Use File Explorer (Windows) or Finder (macOS) to locate files. • Skills: Efficiently manage files and folders, understand file paths and file extensions.
Week 4	Using the Internet and Web Browsers • Key Vocabulary: Browser, URL (Uniform Resource Locator), Bookmark, Search Engine, Hyperlink, Tabs, History, Cache, Download, Upload • Activities: ○ Open and navigate a web browser (e.g., Chrome, Firefox, Safari). ○ Use a search engine (e.g., Google) to search for information. ○ Bookmark websites and manage the browsing history. ○ Practice downloading and uploading files. • Skills: Efficient web browsing, using search engines, managing downloads/uploads.
Week 5	Email and Communication Tools • Key Vocabulary: Email, Inbox, Sent, Attachment, CC (Carbon Copy), BCC (Blind Carbon Copy), Subject Line, Signature, Spam, Reply All • Activities: ○ Set up and use an email account (e.g., Gmail). ○ Compose, send, and reply to emails, including adding attachments. ○ Organize email using folders and labels. • Skills: Sending and organizing emails, understanding email etiquette.
Week 6	Working with Documents (Word Processing) • Key Vocabulary: Word Processor, Document, Font, Paragraph, Header/Footer, Text Formatting, Bold, Italic, Underline, Alignment, Spell Check, Template • Activities: ○ Open and create a new document in a word processor (e.g., Microsoft Word or Google Docs). ○ Apply text formatting (font, size, color, bold, italics). ○ Create and format headings, paragraphs, and bullet points. ○ Insert images, tables, and hyperlinks into documents. • Skills: Creating and formatting professional documents.
Week 7	Spreadsheet Basics (Excel or Google Sheets) • Key Vocabulary: Spreadsheet, Cell, Row, Column, Formula, Function, Sum, Average, Cell Reference, Chart, Data Entry • Activities: ○ Create and edit a basic spreadsheet (e.g., in Excel or Google Sheets). ○ Input data into rows and columns. ○ Perform simple calculations using formulas and functions (e.g., SUM, AVERAGE).

	○ Create basic charts (bar, line, pie) from data. • Skills: Data entry, using basic formulas and functions, creating charts.
Week 8	Presentation Software (PowerPoint or Google Slides) • Key Vocabulary: Presentation, Slide, Slide Layout, Theme, Transition, Animation, Bullet Points, Multimedia, Slide Show • Activities: ○ Create a simple presentation (e.g., in PowerPoint or Google Slides). ○ Add slides, text, images, and videos. ○ Apply themes and slide transitions/animations. ○ Present slides using the slideshow feature. • Skills: Designing and presenting a basic slideshow.
Week 9	External Devices and Peripherals • Key Vocabulary: USB Drive, Printer, Scanner, Webcam, External Hard Drive, Bluetooth, Port, Plug and Play, Driver • Activities: ○ Connect and use a USB flash drive or external hard drive. ○ Connect and print documents using a printer. ○ Scan images and documents with a scanner. ○ Test Bluetooth connectivity and pair devices. • Skills: Using external peripherals, troubleshooting device connections.
Week 10	Introduction to Cloud Storage and File Sharing • Key Vocabulary: Cloud Storage, Google Drive, Dropbox, OneDrive, File Sharing, Sync, Cloud Backup, Upload, Download, Link Sharing • Activities: ○ Set up a cloud storage account (e.g., Google Drive, OneDrive). ○ Upload files to cloud storage and organize them. ○ Share files and folders with others using shareable links. • Skills: Using cloud storage for file backup and sharing.
Week 11	Basic Networking and Internet Connection • Key Vocabulary: Network, Wi-Fi, Ethernet, Router, Modem, IP Address, Network Settings, Local Area Network (LAN), Wireless Network, VPN (Virtual Private Network) • Activities: ○ Connect a computer to a Wi-Fi network. ○ Test internet connectivity using a browser or network diagnostics. ○ Access basic network settings (IP address, Wi-Fi configuration). ○ Understand how to connect to a VPN (if applicable). • Skills: Troubleshooting basic networking issues, managing Wi-Fi connections.
Week 12	Basic Troubleshooting and Maintenance • Key Vocabulary: Troubleshooting, Diagnostic Tool, Error Message, Task Manager,

	Update, System Restore, Reboot, Backup, Restore Point • Activities: ○ Use Task Manager (Windows) or Activity Monitor (macOS) to manage processes. ○ Check for system updates and install them. ○ Perform a simple system restore or backup. ○ Troubleshoot common computer issues (slow performance, connectivity). • Skills: Basic system troubleshooting and maintenance.
Week 13	Security Best Practices • Key Vocabulary: Antivirus, Firewall, Malware, Phishing, Password Manager, Two-Factor Authentication (2FA), Encryption, Privacy Settings • Activities: ○ Install and run an antivirus scan. ○ Set up and enable a firewall on your computer. ○ Set up two-factor authentication for email or social media accounts. ○ Adjust privacy settings in operating systems and browsers. • Skills: Securing computers from viruses and unauthorized access.
Week 14	Using Collaborative Tools • Key Vocabulary: Collaboration, Google Docs, Google Sheets, Google Slides, Microsoft Teams, Zoom, Chat, Video Conference, Shared Workspace • Activities: ○ Use Google Docs, Sheets, and Slides for real-time collaboration with others. ○ Participate in a video conference or online meeting using Zoom or Teams. ○ Share and edit documents collaboratively in real-time. • Skills: Collaborating online using cloud-based tools and platforms.
Week 15	Review and Final Practical Exam • Key Vocabulary: Review of all terms and concepts from previous weeks • Activities: ○ Complete a final practical exam that involves multiple tasks, such as creating a document, setting up an email, troubleshooting a problem, or performing basic networking tasks. ○ Review all tools and techniques covered during the course. • Skills: Demonstrating practical knowledge of computer hardware, software, and troubleshooting.
Week 16	Exam

Learning and Teaching Resources		
	Text	Available in the Library
Required Texts	الكتاب المنهجي لوزارة التعليم العالي الجزء 1 والجزء 2 للمرحلة الأولى	Yes
Recommended Texts	سلسلة يسر المصطفى للعلوم " أساسيات الحاسوب والانترنت, الاوفس 2010 د. زياد محمد عبود, 2013	No
Websites	الامريكية, موقع Microsoft نظام التشغيل ويندوز 7, شركة مايكروسوفت www.microsoft.com الشركة الرسمي	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
Module Title	Arabic Language 1		Module Delivery
Module Type	B		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	NTU 103		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	
Administering Department	Medicinal Plant Technologies and Natural Products	College	Technical Agricultural College
Module Leader	Janan kassim khorshed	e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title	Amina mahir azeez	e-mail	Amina.mahir@ntu.edu.iq
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1- Preparing students who have the ability to pronounce correctly and write without errors as much as possible. 2- Encouraging the student to follow correct spelling rules. 3- Paying attention to punctuation marks and how to use them in writing.
Module Learning Outcomes	1- Learn about the basic and important rules of the Arabic language. 2- Focus on correct spelling rules. 3- Paying attention to a lot of reading and reading. To train the student on correct pronunciation and writing without errors as much as possible.
Indicative Contents	Instructional content includes the following Alert students to common linguistic errors, as well as benefit from correcting these _ errors in their formal and informal writing. (4 hours Knowing the necessary spelling rules. (4 hours_ _Knowing punctuation marks and how to use them. (4 hours Part B - practical part

Learning and Teaching Strategies

Strategies	1- Providing students with the basics and lectures related to the subject 2- Use slide presentation methods to convey information more clearly. 3- Urging students to read, read, and go to libraries.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	2.20
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	1.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	5	10% (5)	Continuous	All
	seminar	2	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	The concept of linguistic errors
Week 2	Rules for writing open ta's and open ta's
Week 3	The elongated alif and the short alif
Week 4	Solar letters and lunar letters
Week 5	Dhaad and Dhaa
Week 6	Writing the hamza: connecting and cutting, the middle hamza, the extreme hamza
Week 7	punctuation marks
Week 8	Exam
Week 9	The noun, the verb, and the difference between them
Week 10	The object, the absolute object, the object for its sake, the object in it, and the object with it
week 11	Formal aspects of administrative discourse, the language of administrative discourse
Week 12	the number
Week 13	Applications of common linguistic errors
Week 14	Meanings of prepositions, the rule of alif al-fariqa, the rule of nun and tanween
Week 15	Exam
Week 16	final exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Clear Dictation, Abdul Majeed Al-Naimi, Dahham Al-Kayyal, Dar Al-Mutanabbi Library, Baghdad, 6th edition, 1987 AD.	Yes
Recommended Texts	Lessons in language, grammar, and dictation for state employees, Ismail Hamoud Atwan and others, Ministry of Education Press No. (3), Baghdad, 2nd edition, 1984 AD.	Yes
Websites		

Grading Scheme

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX - Fail	راسب (فقد 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	Occupational safety		Module Delivery
Module Type	B		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	TAMO 101		
ECTS Credits	2		
SWL (hr/se3m)	50		
Module Level	1	Semester of Delivery	
Administering Department	Medicinal Plant Technologies and Natural Products	College	Technical Agricultural College
Module Leader	Janan kassim khorshed	e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

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

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1- Preparing students who have the ability to understand the concept of occupational safety and its importance in maintaining the health and safety of workers. 2- Preparing students capable of analyzing risks, including physical, chemical and biological risks. 3- Pay attention to preventive measures to reduce equipment risks
Module Learning Outcomes	1- Identify the basic and important rules of occupational safety 2- Focus on important occupational safety rules 3- Paying attention to preventive measures to reduce risks resulting from work
Indicative Contents	Instructional content includes the following Alert students to become familiar with local and international laws and regulations related to occupational safety and workers' rights (4 hours) Knowing the basic rules of how to deal with accidents and injuries in the workplace. (4 hours) And enhancing the culture of safety in institutions through positive interaction and effective participation with all employees. (4 hours)
	Part B - practical part

Learning and Teaching Strategies

Strategies	1. Providing students with the basics and lectures related to the subject. 2. Use slide presentation methods to convey information more clearly. 3. Urging students to read, read, and go to libraries . قسم تقنيات النباتات الطبية والنواتج الط
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل		50	

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	2	10% (10)	Continuous	All
	seminar	2	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	The concept of occupational safety
Week 2	The second week: regulations, laws and legislation
Week 3	Identifying agricultural risks
Week 4	Safety from physical hazards
Week 5	Safety from biological hazards
Week 6	Safety from chemical hazards
Week 7	Safety from mechanical hazards
Week 8	Safety from common diseases
Week 9	Dealing with agricultural machinery
Week 10	Dealing with agricultural waste
Week 11	Accidents and injuries in the agricultural sector
Week 12	Procedures for reporting incidents
Week 13	First aid
Week 14	Safe use of pesticides and fertilizers
Week 15	Training

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	كتاب السلامة والصحة المهنية في الزراعة	
Recommended Texts	كتاب السلامة والصحة المهنية في الزراعة	قسم تقنيات النباتات الطبية والتوابل الطبيعية
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.

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Microbiology		Module Delivery	
Module Type	C		☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PMNP 103			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level	1	Semester of Delivery		2
Administering Department	Medicinal Plant Technologies and Natural Products		College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title		Module Leader's Qualification		
Module Tutor	Fahad K.Y. Al-Dulaimi		e-mail	fahadbiology@ntu.edu.iq
Peer Reviewer Name		e-mail		
Scientific Committee Approval Date		Version Number		

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

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1- Learn about the basics of microbiology 2- Distinguishing between the divisions of microscopic molar science
Module Learning Outcomes	The student learns about the types of microorganisms: bacteria, fungi, and viruses The student studies how microorganisms spread The student learns about the effect of environmental factors on microorganisms The student will be familiar with the methods of reproduction of microorganisms The student learns about methods of preventing microorganisms
Indicative Contents	The instructive content included the following. Part A - Theoretical part Definition of microorganisms, their sections, and methods of dividing them [3 hours] Types of microorganisms - their importance - identifying the needs of microorganisms and ways to limit their spread [3 hours] Growth problems and environmental needs are fundamental [3 hours]

	Part B - practical part
	Preparing media for the growth of different types of microorganisms and identifying their types in the laboratory . [9 hours]. Identify the different types of microorganisms . [9 hours]. Growing different microorganisms on culture media . [9 hours]. - Conducting reproduction operations for microorganisms . [9 hours]. Monitoring the growth of microorganisms growing on culture media [9 hours].

Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	82	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Seminar	2	10% (10)	Continuous	All
	Projects / Lab.	5	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Definition of microbiology, emergence and evolution of microbiology and its fields
Week 2	The cell, the bacterial cell - its structure
Week 3	Morphological characteristics of bacteria and how they divide
Week 4	Bacterial growth, growth needs
Week 5	Stages of bacterial growth
Week 6	External factors that affect bacterial growth
Week 7	Antibiotics that affect bacteria and therapeutic chemicals
Week 8	Properties that make bacteria pathogenic / attacking tissues and secreting toxins
Week 9	Immunity : Definition, types and cells involved in the immune response against bacteria.
Week 10	Viruses, their properties and structure
Week 11	Reproduction and replication of viruses
Week 12	Physical and chemical factors affecting viruses
Week 13	Cultivation and propagation of viruses - Tissue and cell culture
Week 14	Fungi, their description and division
Week 15	Fungal cultures and antifungals
Week 16	final Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Instructions and rules to be followed in the microbiology lab
Week 2	Methods of sterilizing laboratory equipment
Week 3	Recognizing the phenotype of bacteria by the suspended drop method
Week 4	Bacterial staining methods Cram's stain
Week 5	Ziehl-Neelsen stain and kamza stain
Week 6	Chalkboard staining for chalkboard-forming bacteria
Week 7	Culture media and the raw materials used to prepare them
Week 8	Methods of culturing and propagating bacteria on different culture media
Week 9	Sampling methods for bacterial screening
Week 10	Total bacterial counting, direct and indirect methods
Week 11	Some biochemical tests for bacteria
Week 12	Bacterial diagnostics and diagnosis of spore-forming bacteria
Week 13	Antibiotic susceptibility testing
Week 14	Fungi, their forms, characteristics and diagnosis
Week 15	Culture media used to isolate fungi
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	كتاب الاحياء المجهرية	Yes
Recommended Texts	كتاب علم الاحياء المجهرية	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	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	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.

نموذج وصف المادة الدراسية

Module Information				
Module Title	Plant anatomy		Module Delivery	
Module Type	C		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	PMNP 104			
ECTS Credits	8			
SWL (hr/sem)	200			
Module Level	1	Semester of Delivery		2
Administering Department	Medicinal Plant Technologies and Natural Products		College	Technical Agricultural College
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor	Abdulkhaliq zebari		e-mail	abdulkhaliq.zebari@ntu.edu.iq
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	-Introducing the student to the most important basic information about different plants Definition of the plant cell, its types, and its difference from the animal cell. -Teaching and training the student to know its plants parts . -Teaching and training the student to take plants tissue.
Module Learning Outcomes	1. The student must have knowledge of the importance of plant parts. 2. Identify the anatomical parts of the plant. 3. Knowledge of permanent tissues. 4. Identify all the different plant tissues. 5. Identify the function of each plant tissue. 6. Identify the living and non-living contents of the plant cell.
Indicative Contents	Indicative content includes the following. <u>Part A - theoretical part</u> .Definition of the plant cell. Plant tissues are distinguished by some characteristics from animal tissues. The plant cell differs in shape, size, function, and type. The difference between a prokaryotic and eukaryotic cell. [3 hrs] .Plant cell structure, how the cell wall is formed, types of plasma bonds. [3 hrs] .Protoplasm, cytoplasm, precise structure of the plasma membrane. [3 hrs] .Endoplasmic reticulum, types, Golgi apparatus, function. [3 hrs] .Ribosomes, the nucleus, the difference between DNA and RNA, types of plant tissues [3 hrs]

	<u>Part B - practical part</u> Installing a microscope or a compound microscope. . [9 hrs]. Cell division. . [9 hrs]. Plant cell contents. . [9 hrs]. Leg anatomy. . [9 hrs]. Root anatomy. [9 hrs].
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Learning and Teaching Strategies

Strategies	The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.
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Student Workload (SWL)

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5.20
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	122	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	8.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Samsar	2	10% (10)	Continuous	All
	Projects / Lab.	2	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	2hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Division of meristematic tissue
Week 2	Division of permanent tissues
Week 3	Skin (functions, types of skin cells)
Week 4	Layers of epiderm (cork, cork cambium, secondary cortex)
Week 5	Parenchymal tissue, sclerenchymal tissue
Week 6	Wood texture
Week 7	Bark texture
Week 8	Secretory cells and tissues
Week 9	Internal structure of the root
Week 10	Internal structure of the leg
Week 11	Internal structure of the sheet
Week 12	Secondary thickening
Week 13	Secondary xylem and phloem
Week 14	Prederm
Week 15	The internal structure of the plant and its relationship to the environment
Week 16	Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Installation of an electron and optical microscope
Week 2	Identify the materials and tools used in dissection
Week 3	Prepare temporary glass slides
Week 4	Preparing permanent glass slides
Week 5	Preparing permanent glass slides
Week 6	Examination of cell wall components
Week 7	Examination of plant cell organelles
Week 8	Examination of some types of cells and tissues
Week 9	Displaying posters explaining the types of clicks and crystals and their drawing
Week 10	Anatomy of root, stem and leaf
Week 11	Watch and draw the types of human hairs and appendages
Week 12	Watch and draw the shapes of starch granules and parenchyma cells
Week 13	Identify the types of parenchymal cells, secondary thickening, and types of pitting
Week 14	Identify the types of wood and the stages of secondary growth
Week 15	Identify the naked and covered seeds
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Plant anatomy, تشریح النبات ، اساسيات علم تشریح النبات الدكتور بدري عويد الغاني الدكتور قيصر مجيب صالح الطبعة الثالثة 1988	Yes
Recommended Texts	Plant anatomy	Yes

Websites	https://www.agro-lib.site/2019/10/blog-post_592.html
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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	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	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 Information					
Module Title	Desert Plants		Module Delivery		
Module Type	C		☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☒ Practical ☐ Seminar		
Module Code	PMNP 105				
ECTS Credits	8				
SWL (hr/sem)	200				
Module Level		1	Semester of Delivery		2
Administering Department		Medicinal Plant Technologies and Natural Products	College	Technical Agricultural College	
Module Leader	Janan kassim khorshed		e-mail	janankhorshed@ntu.edu.iq	
Module Leader's Acad. Title			Module Leader's Qualification		
Module Tutor	Zeyad amer mostfa		e-mail	mti.lec96.zeyad@ntu.edu.iq	
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number		

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	-Introducing the student to the Understand basic concepts in genetics and development, including molecular, cellular, and behavioral concepts. -Teaching and training the student to know Analyzing the mechanisms of gene transfer and distribution during various genetic processes such as sexual and asexual reproduction. -Teaching and training the student to Develop experimental and analytical skills by carrying out genetic experiments and analyzing genetic data.
Module Learning Outcomes	1. The ability to explain the mechanisms of gene transfer and various genetic changes. 2. Be able to use genetic terminology correctly and effectively. 3. The ability to analyze and interpret various genetic phenomena and identify the relationships between them. 4. The ability to apply genetic concepts to solve simple genetic problems. 5. Being able to identify the most important recent developments in the field of genetics and understand their effects. 6. Be able to communicate effectively about genetics topics in appropriate scientific language.
Indicative Contents	Indicative content includes the following. <u>Part A - theoretical part</u> - Genetic define, history and development, relationship between genetic and other science, important of genetic plan. Chromosome theory. Mendel's genetic. Test cross, modified Mendelian. [6 hrs] - Ratio and gene interaction. Probability and use in genetic problems. Linkage and crossing over and chromosome mapping. [6 hrs] - Variation in chromosome number. Sexual determination, chromosomes. Sexual genetic balance. Multiple alleles, Blood groups. [6 hrs] - Chromosome aberration variation of size chromosomes mutation of chromosome. Quantitative genetic, effect of lethal genes fertility. Cytoplasmic genetic. [6 hrs] - Genetic engineering. Engineering practice in the plants technology reproductive alternative. Molecular. [6 hrs]

	Part B - practical part
	-

قسم تقنيات النباتات الطبية والنواتج الطبيعية

Learning and Teaching Strategies	
Strategies	The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.

Student Workload (SWL)			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.20
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	122	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	8.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	Continuous	All
	Assignments	2	10% (10)	Continuous	All
	Projects / Lab.	2	10% (10)	Continuous	All
	Report	2	10% (10)	Continuous	All
Summative assessment	Midterm Exam	1hr	10% (10)	8	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Desert, its definition, types, environmental conditions, desert organisms.
Week 2	Desert plants: their definition, characteristics, and types.
Week 3	Physiological adaptations of desert plants.
Week 4	Environmental adaptations of desert plants.
Week 5	Desert lichens.
Week 6	Desert herbaceous plants. (Desert flowers)
Week 7	Desert succulent plants.
Week 8	Desert shrubs.
Week 9	Desert trees.
Week 10	Desert medicinal plants and their importance.
Week 11	Types of desert plants used in human nutrition.
Week 12	Types of plants tolerant to salt and drought in Iraq.
Week 13	Desertification, its causes and methods of treatment.
Week 14	Sand dunes and methods of stabilizing them.
Week 15	Desert plants in the Arabian Peninsula and their uses.
Week 16	Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Identify some desert plants.
Week 2	Desert plant care.
Week 3	Identifying the physiological adaptations of desert plants.
Week 4	Learn about the environmental adaptations of desert plants.
Week 5	Propagation of succulent plants.
Week 6	Planting seeds of some desert trees.
Week 7	Classification of desert plants.
Week 8	Desert medicinal plants and their content of active substances.
Week 9	Anatomy of stems and leaves of some succulent plants.
Week 10	Identify desert herbaceous plants.
Week 11	Forms of modifications in desert plants.
Week 12	Forms of plant modifications in succulents.
Week 13	Truffles, their types and ways to identify their locations and collect them.
Week 14	Practical methods for stabilizing sand dunes and stopping desertification.
Week 15	A field visit to places containing desert plants.
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	كتاب انواع النباتات الصحراوية	
Recommended Texts	كتاب تصنيف النبات	
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	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	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.