University of Basrah

جامعة البصرة

First Cycle – Bachelor's degree (B.Sc.) – Agricultural Machines and Equipment

بكالوريوس علوم - المكائن والآلات الزراعية

Academic Program Description Form

University Name: Basrah

Faculty/Institute: Agriculture

Scientific Department: Agricultural Machines and Equipment.

Academic or Professional Program Name: Bachelor of Agricultural Sciences

Final Certificate Name: Bachelor in Agricultural Machinery and Equipment

Academic System: Semester

Description Preparation Date: 5/10/2024

File Completion Date: / /2025

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

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جدول المحتويات

1. Mission & Vision Statement

Vision Statement

The Department of Agricultural Machines and Equipment at the College of Agriculture, University of Basrah, is committed to cultivating a deep understanding of agricultural machinery and technology through a rigorous integration of coursework, hands-on laboratory experiences, cutting-edge research, and practical fieldwork. We believe that this comprehensive educational approach empowers our students to develop innovative, sustainable solutions for the challenges facing global agriculture. By fostering close collaboration between faculty and students in an environment characterized by small class sizes and supportive mentorship, we aim to produce highly skilled professionals who will lead the future of agricultural technology**.**

Mission Statement

The Department of Agricultural Machines and Equipment at the College of Agriculture, University of Basrah, is committed to a multifaceted mission. Our program strives to provide all students with a solid foundation in agricultural machinery and technology while offering specialized knowledge in key field areas. The curriculum and advising are designed to prepare graduates for a variety of professional paths, whether they choose to innovate in the design and development of agricultural equipment, pursue postgraduate studies in agricultural engineering, or contribute to sustainable farming practices. Additionally, our program supports other academic pursuits by providing essential knowledge and practical experience in agricultural machinery, which is integral to the broader disciplines of agricultural science, environmental management, and resource sustainability. Through this comprehensive approach, we aim to equip our students with the skills and expertise needed to excel in the evolving landscape of global agriculture.

2. Program Specification

Programme code:	BSc-AgriMachines	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

The Agricultural Machines and Equipment program at the College of Agriculture, University of Basrah, offers a comprehensive and dynamic education in the field of agricultural technology. The program is designed to equip students with the knowledge and skills needed to address the challenges of modern agriculture, focusing on the development and application of advanced machinery and systems.

The emphasis of the program is on the integration of theoretical knowledge with practical applications, ensuring that students gain a holistic understanding of agricultural machinery, from the fundamental engineering principles to the operation and maintenance of complex systems. The degree is popular among students for its breadth and depth, appealing to those interested in both broad-based knowledge and specialized expertise.

In the first level, students are introduced to the core concepts of agricultural machinery and technology, providing a solid foundation for progression within the program. The curriculum is structured to offer flexibility, allowing students to explore various aspects of the field and choose specialized modules that align with their interests. By the end of the first year, students have the opportunity to transfer into specialized tracks, such as Precision Agriculture, Farm Machinery Design, or Sustainable Agricultural Systems, depending on their career aspirations.

At Level 2, the program delves deeper into specific topics, preparing students for advanced, research-led modules at Levels 3 and 4. The curriculum emphasizes the importance of research in informing practice, in line with the University and College mission statements. Students are encouraged to engage with cutting-edge research, participate in hands-on laboratory work, and apply their knowledge in real-world scenarios.

Throughout Levels 2, 3, and 4, students have the flexibility to select modules that reflect the diverse nature of agricultural systems, from machinery design and automation to resource management and sustainability. This approach allows students to tailor their education to their interests while ensuring they develop a comprehensive understanding of the field.

A strong research ethos is fostered from the outset, with practical sessions embedded in lecture modules, dedicated research seminars, and tutorials. A compulsory field course in Level 1 introduces students to the practical aspects of agricultural machinery, which they must pass to progress to Level 2. Optional field courses are available in Levels 2, 3, and 4, providing further opportunities for hands-on learning.

In the final year, all students undertake an independent research project, which can be either a comprehensive literature review, a data analysis project, or a practical field or laboratory-based study. This capstone project allows students to apply their knowledge and skills to address real-world challenges in agricultural technology.

Academic tutorials are held regularly at Levels 1 and 2, with each student assigned a personal tutor who provides continuous guidance and support throughout their studies. These tutorials include workshops focused on developing essential skills, such as technical writing and project management, with opportunities for students to apply these skills in a subject-specific context.

The program also offers international study opportunities and industrial placements, allowing students to gain valuable experience in different cultural and professional settings. Individual needs and aspirations are discussed with academic advisors to ensure that each student's educational journey is tailored to their goals.

The Agricultural Machines and Equipment program at the University of Basrah is dedicated to producing graduates who are not only technically proficient but also innovative and adaptable, ready to lead the future of sustainable agricultural technology.

3. Program Objectives

1. To provide a comprehensive education in biology that stresses scientific reasoning and problem solving across the spectrum of disciplines within biology
2. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of biology
3. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques
4. To provide thorough training in written and oral communication of scientific information
5. To enrich students with opportunities for alternative education in the area of biology through undergraduate research, internships, and study-abroad

4. Student Learning Outcomes

The Agricultural Machines and Equipment program at the College of Agriculture, University of Basrah, prepares graduates with a comprehensive understanding of the design, operation, and maintenance of agricultural machinery, as well as the application of technology in sustainable farming practices. The curriculum is designed to equip students with both theoretical knowledge and practical skills, ensuring they are well-prepared for careers in agricultural engineering, technology development, and resource management.

Outcome 1

Understanding of Agricultural Systems

Graduates will be able to illustrate and explain the principles of agricultural machinery design and operation, including how various components interact within complex agricultural systems to optimize productivity and sustainability.

Outcome 2

Technical Communication

Graduates will be able to effectively communicate technical information related to agricultural machinery and systems, both orally and in writing, including the ability to present research findings, technical reports, and design proposals to diverse audiences.

Outcome 3

Practical Skills and Safety Protocols

Graduates will be proficient in conducting laboratory experiments and field studies, using advanced machinery, scientific equipment, and computer technology while adhering to industry-standard safety protocols and practices.

Outcome 4

Innovation and Problem-Solving

Graduates will be able to apply critical thinking and problem-solving skills to identify challenges in agricultural systems and develop innovative solutions, leveraging emerging technologies and sustainable practices.

Outcome 5

Data Analysis and Application

Graduates will demonstrate quantitative skills, including the ability to analyze and interpret data from field studies and experiments, and apply this knowledge to improve the design and efficiency of agricultural machinery.

Outcome 6

Research and Development

Graduates will be able to design and conduct independent research projects, utilizing scientific methods to investigate issues related to agricultural technology and machinery, and contribute to the advancement of the field.

Outcome 7

Ethical and Environmental Responsibility

Graduates will understand the ethical implications of their work and be able to incorporate environmental considerations into the design, operation, and management of agricultural machinery and systems, promoting sustainability and responsible resource use.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Basrah University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

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:				

Number 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.

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 240

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
UOB102	English language اللغة الانكليزية	32	18	2	B	
UOB104	Democracy and Human rights الديمقراطية وحقوق الانسان	32	18	2	B	
MATH111	Mathematics الرياضيات	48	77	5	B	
SOIL114	Soil Science علم التربة	78	97	7	B	
FICR115	Field Crops محاصيل حقلية	78	97	7	B	
TRAC122	Agricultural Tractors الساحبات الزراعية	78	97	7	cor	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
UOB101	Arabic language اللغة العربية	32	18	2	B	
UOB103	Computer الحاسوب	48	27	3	B	

PLSU118	Plane Surveying المساحة المستوية	78	72	6	B	
ENWO121	Engineering Workshop الورش الهندسية	78	72	6	cor	
GPHY120	Physics الفيزياء	78	72	6	B	
ENDR117	Engineering Drawing الرسم الهندسي	48	127	7	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

8. Contact

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University of Basrah
جامعة البصرة

First Cycle – Bachelor's Degree (B.Sc.) – Agricultural Sciences

بكالوريوس – علوم زراعية

Table of Contents

1. Overview

This catalogue is about the courses (modules) given by the program of Agricultural Machines and Equipment to gain the Bachelor of Agricultural Sciences degree. The program delivers (xx) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

نظره عامه

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج المكائن والالات الزراعية للحصول على درجة بكالوريوس علوم زراعية. يقدم البرنامج (٤٠) مادة دراسية، على سبيل المثال، مع (٦٠٠٠) إجمالي ساعات حمل الطالب و ٢٤٠ إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2024-2025

Module 1

Code	Course/Module Title	ECTS	Semester
UOB102	English language	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			
This section includes a description of the module, 100-150 words			

English language is a fundamental subject in the Bologna process for Agricultural Machines and Equipment students. This course focuses on developing essential language skills needed in the field, including technical vocabulary, reading comprehension, and effective communication. Students will learn to understand and use industry-specific terminology, read technical manuals, and write reports. The course emphasizes practical language applications for agricultural contexts, helping students engage with international literature and collaborate with global professionals. Mastery of English will enhance students' ability to access resources, stay updated with technological advancements, and communicate effectively in a globalized agricultural industry.

Module 2

Code	Course/Module Title	ECTS	Semester
UOB104	Human Rights and Public Freedoms	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			
This section includes a description of the module, 100-150 words			

Human Rights and Public Freedoms is an important course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject introduces fundamental concepts of human rights and civil liberties, focusing on their relevance to the agricultural sector. Students will explore the principles of equality, non-discrimination, and the protection of individual freedoms. The course also addresses how these rights impact agricultural practices, labor conditions, and environmental policies. Understanding human rights ensures that students recognize and uphold ethical standards in their professional activities, contributing to fair and respectful treatment in the workplace and within agricultural communities.

Module 3

Code	Course/Module Title	ECTS	Semester

MATH111	Mathematics	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0	48	77
Description			
This section includes a description of the module, 100-150 words			

Mathematics is an essential subject in the Bologna process for first-year Agricultural Machines and Equipment students. This course covers fundamental mathematical concepts essential for understanding and applying engineering principles in agriculture. Topics include algebra, geometry, calculus, and statistics, focusing on practical applications such as machine design, data analysis, and optimization problems. Students will learn to solve equations, analyze data, and model agricultural systems, which are vital skills for effective problem-solving in the field. Proficiency in mathematics supports students in making informed decisions, improving machine efficiency, and advancing technological solutions in agriculture.

Module 4

Code	**Course/Module Title**	**ECTS**	**Semester**
SOIL114	Soil science	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97
Description			
This section includes a description of the module, 100-150 words			

Soil science is an essential course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject introduces the basic physical principles of soil, including soil texture, structure, and moisture content. Students will learn about soil behavior and its impact on agricultural machinery, such as how soil properties affect traction, compaction, and tillage. The course covers concepts like soil porosity, water retention, and soil strength, providing a foundation for understanding how these factors influence machinery performance and crop management. Mastery of soil physics fundamentals equips students to optimize equipment use and enhance agricultural productivity.

Module 5

Code	**Course/Module Title**	**ECTS**	**Semester**
FICR115	Field Crops	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97
Description			
This section includes a description of the module, 100-150 words			

Field Crops is a pivotal course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject covers modern techniques and technologies used in cultivating crops efficiently. Students will learn about crop varieties, planting methods, irrigation systems, fertilization, pest management, and

harvesting technologies. The course emphasizes the integration of machinery with crop production processes to enhance yield and reduce labor. Understanding these technologies helps students optimize equipment use and improve crop management practices. Knowledge in crop production technology supports effective machinery deployment and contributes to increased productivity and sustainability in agriculture.

Module 6

Code	Course/Module Title	ECTS	Semester
TRAC122	Agricultural Tractors	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97
Description			
This section includes a description of the module, 100-150 words			

Agricultural Tractors is a key course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject focuses on the design, operation, and maintenance of tractors used in modern agriculture. Students will learn about the various types of tractors, their components, and how they function to perform tasks such as plowing, planting, and harvesting. The course covers tractor systems, including engines, transmissions, and hydraulics, as well as safety and efficiency considerations. Understanding agricultural tractors helps students to effectively utilize and maintain these essential machines, optimizing performance and productivity in agricultural operations.

Module 7

Code	Course/Module Title	ECTS	Semester
UOB101	Arabic Language	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			
This section includes a description of the module, 100-150 words			

Arabic Language is an important course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject focuses on developing proficiency in reading, writing, and speaking Arabic, which is essential for effective communication in Arabic-speaking regions. Students will learn fundamental grammar, vocabulary, and conversational skills, with an emphasis on technical terminology related to agriculture and machinery. Mastery of Arabic enhances students' ability to engage with local communities, access technical resources, and collaborate in diverse agricultural environments. Understanding Arabic supports better integration into regional agricultural practices and broadens professional opportunities in Arabic-speaking countries.

Module 8

Code	Course/Module Title	ECTS	Semester
UOB103	Computer Science	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	27
Description			
This section includes a description of the module, 100-150 words			

Computer Science is a foundational course in the Bologna process for first-year Agricultural Machinery and Equipment students. This subject introduces students to essential computer skills, including software applications relevant to agricultural technology. Key areas of focus include basic computing, data management, and the use of specialized software for machinery design and operation. The course also covers programming fundamentals, data analysis, and digital tools for optimizing agricultural processes. Proficiency in computer science equips students to effectively utilize technology, enhance machinery performance, and manage agricultural data, which is crucial for innovation and efficiency in modern agricultural practices.

Module 9

Code	Course/Module Title	ECTS	Semester
PLSU118	Plane Surveying	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72
Description			
This section includes a description of the module, 100-150 words			

Surveying is a vital course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject teaches the fundamentals of measuring and mapping land, which is essential for planning and executing agricultural projects. Students will learn about surveying techniques, including the use of tools and instruments to determine distances, angles, and elevations. The course covers topics such as topographic mapping, land measurements, and data interpretation. Understanding surveying helps students effectively design machinery layouts, plan field operations, and manage agricultural land. Mastery of surveying ensures precision in agricultural engineering tasks and enhances overall project efficiency.

Module 10

Code	Course/Module Title	ECTS	Semester
ENWO121	Engineering Workshop	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72

Description
This section includes a description of the module, 100-150 words

Engineering Workshop is a crucial course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject provides hands-on experience with various tools, techniques, and processes used in machinery fabrication and repair. Students will engage in practical exercises, including welding, machining, and assembling components. The course emphasizes safety practices, precision work, and problem-solving skills. By working directly with materials and machinery, students gain practical insights into engineering principles and learn to apply theoretical knowledge in real-world settings. Mastery of workshop skills is essential for effectively designing, constructing, and maintaining agricultural equipment.

Module 1

Code	Course/Module Title	ECTS	Semester
GPHY120	Physics	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72
Description			
This section includes a description of the module, 100-150 words			

Physics is a fundamental course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject introduces core concepts of classical mechanics, thermodynamics, and electromagnetism, focusing on their applications in agricultural machinery. Students will explore topics such as force, motion, energy, and the principles of fluid dynamics, which are essential for understanding how machinery operates and interacts with materials. The course emphasizes problem-solving skills and the practical application of physical laws to optimize machinery performance and improve efficiency. Mastery of physics provides a solid foundation for designing, operating, and troubleshooting agricultural equipment effectively.

Module 12

Code	Course/Module Title	ECTS	Semester
ENDR117	Engineering Drawing	7	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	3	48	127
Description			

This section includes a description of the module, 100-150 words

Engineering Drawing is a crucial course in the Bologna process for first-year Agricultural Machines and Equipment students. This subject covers the principles and techniques of creating precise technical drawings used in machinery design and manufacturing. Students will learn to interpret and produce detailed diagrams, including orthographic projections, isometric views, and sectional drawings. The course emphasizes accuracy in representing mechanical components and assemblies, essential for effective communication and engineering design. Proficiency in engineering drawing enables students to visualize and develop machinery parts, ensuring that designs are both functional and manufacturable, which is vital for innovation and efficiency in agricultural machinery.

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	**Academic English**		**Module Delivery**	
Module Type	**Core**		☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOB102**			
ECTS Credits	**2**			
SWL (hr/sem)	**50**			
Module Level	1	**Semester of Delivery**	1	

Administering Department	Type Dept. Code	**College**	Type College Code
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Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/06/2023	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To improve students' proficiency in English, focusing on both written and spoken communication. 2. To enhance critical reading, writing, listening, and speaking skills. 3. To build a foundation for academic writing and research in English. 4. To introduce students to advanced vocabulary and grammatical structures. 5. To promote effective communication strategies in academic and professional contexts. 6. To develop collaborative learning and presentation skills.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module, students should be able to: 1. Identify and use advanced grammar and vocabulary in context. 2. Write clear, coherent, and well-structured essays and reports. 3. Summarize and analyze academic texts. 4. Deliver oral presentations with clarity and confidence. 5. Develop strategies for effective reading and comprehension.

	6. Engage in formal and informal conversations, demonstrating an understanding of tone, style, and purpose. 7. Critically assess peer work and provide constructive feedback. 8. Understand key aspects of academic research and referencing.
Indicative Contents المحتويات الإرشادية	This module will cover the following key areas: 1. **Academic Writing Skills**: Writing essays, reports, and formal letters. Focus on thesis development, argumentation, and evidence-based writing. 2. **Reading and Comprehension**: Reading academic texts, understanding main ideas, and extracting critical information. Strategies for skimming, scanning, and critical analysis. 3. **Listening and Speaking**: Listening to academic lectures and presentations. Engaging in discussions, debates, and oral presentations with proper structure and clarity. 4. **Grammar and Vocabulary Development**: Understanding and applying complex sentence structures, advanced tenses, phrasal verbs, and academic vocabulary. 5. **Critical Thinking and Argumentation**: Developing analytical skills to critique texts and present arguments effectively. 6. **Research and Referencing Skills**: Basics of research methods, avoiding plagiarism, and proper referencing using APA/MLA style. Total hrs = 35 = SSWL - (Exam hrs) = 35 - 5= 30 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1) **Interactive Lectures**: Encouraging student participation through discussions and group work. 2) **Workshops**: Hands-on sessions focusing on writing, grammar, and oral skills. 3) **Peer Reviews**: Students will review each other's work and provide feedback. 4) **Presentations**: Individual and group presentations to enhance speaking skills. 5) **Online Resources**: Utilizing language learning tools and platforms for additional practice. 6) **Assignments**: Weekly assignments focusing on both writing and speaking tasks.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	20	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.3
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**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	20% (20)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	-	0% (0)	Continuous	All
	Report	-	0% (0)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	20% (20)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to academic English and course overview
Week 2	Grammar and Vocabulary in Context
Week 3	Writing Skills: Essay Structures and Argumentation
Week 4	Reading Skills: Strategies for Comprehension
Week 5	Listening and Note-taking Strategies in Lectures
Week 6	Writing Skills: Reports and Formal Writing
Week 7	Mid-term Exam and Review
Week 8	Developing Oral Presentation Skills
Week 9	Research Methods: Understanding Plagiarism and Referencing
Week 10	Summarizing and Paraphrasing Academic Texts
Week 11	Peer Review and Critical Assessment Skills
Week 12	Collaborative Learning: Group Presentations and Feedback
Week 13	Final Presentations and Review
Week 14	Final Exam Preparation and Practice
Week 15	Revision and Q&A
Week 16	**The final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	New Headway English Course_ Elementary Level Student's Book-Oxford University Press Elt (2000)	Yes
Recommended Texts	*English Grammar in Use* (Murphy), *The Elements of Style* (Strunk & White)	No

Websites	https://www.coursera.org/browse/arts-and-humanities/english

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 Information معلومات المادة الدراسية					
Module Title	**Tractors and their power units**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☒ **Practical** ☒ **Seminar**	
Module Code	**TRAC122**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level		1	**Semester of Delivery**		1
Administering Department		BSc. Machines	**College**		Type College Code
Module Leader	Farkad Morteda Hameed		**e-mail**		Farkad.hameed@uobasrah.edu.iq
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Abdulahad Abbas Salim		**e-mail**		abdelahad.salim@uobasrah.edu.iq
Peer Reviewer Name		Salim A. Bander	**e-mail**		Salim.Bander@uobasrah.edu.iq
Scientific Committee Approval Date		11/09/2024	**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

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. فهم المفاهيم الأساسية للساحبات الزراعية. 2. تطوير المعرفة في المحركات وأنظمة نقل القدرة. 3. تطبيق مبادئ الهندسة الميكانيكية في تشغيل وصيانة الساحبات. 4. تنمية المهارات العملية في تشغيل وصيانة الساحبات. 5. تطوير الكفاءة في استخدام التكنولوجيا الحديثة في الساحبات. 6. تحليل وتحسين استهلاك الوقود وكفاءة التشغيل. 7. تزويد الطلاب بالمعرفة حول الأحمال الزراعية والقدرة المطلوبة.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. يكتسب الطالب المعرفة حول أهمية الساحبات الزراعية في العمليات الزراعية وتأثيرها على كفاءة الإنتاج. 2. يصبح الطالب قادرًا على تصنيف أنواع الساحبات بناءً على القدرة والاستخدامات المختلفة. 3. يتعلم الطالب مكونات المحرك الأساسية وكيفية عملها في الساحبات، ويفهم دورة الاحتراق في محركات الديزل والبنزين. 4. يصبح الطالب قادرًا على شرح آلية نقل القدرة من المحرك إلى العجلات والمعدات الزراعية الأخرى وتحليل أدائها. 5. يتمكن الطالب من تحليل أنظمة التوجيه والمكابح في الساحبات وتحديد أعطالها وصيانتها. 6. يكتسب الطالب القدرة على تقييم تأثير نوع العجلات أو الجنزير على أداء الساحبة في الظروف الزراعية المختلفة. 7. يتعلم الطالب كيفية عمل النظام الهيدروليكي في الساحبات واستخدامه لرفع وتحريك المعدات الزراعية. 8. يستطيع الطالب حساب القدرة اللازمة للمعدات الزراعية وتنفيذ عمليات النقل وتحليل كفاءة استخدام القدرة. 9. يكتسب الطالب المهارات اللازمة لفحص وصيانة أنظمة التبريد والتشحيم في الساحبات. 10. يصبح الطالب قادرًا على القيام بالصيانة الوقائية الكاملة للساحبات وتحديد الإجراءات الوقائية التي تحافظ على كفاءتها. 11. يتعلم الطالب كيفية حساب وتحليل استهلاك الوقود في الساحبات واقتراح حلول لتقليل الاستهلاك وتحسين الكفاءة. 12. يتمكن الطالب من تطبيق التقنيات الحديثة، مثل أنظمة GPS والأنظمة الذكية، لتحسين الأداء الزراعي. 13. يكتسب الطالب القدرة على حساب وتحليل الأحمال الزراعية واختيار الساحبة المناسبة لكل عملية زراعية. 14. يستطيع الطالب تحليل كفاءة الساحبات في العمليات الزراعية الميدانية وتقديم توصيات لتحسين الأداء. 15. في نهاية الدورة، يكون الطالب قادرًا على تنفيذ مشروع نهائي يتضمن استخدام الساحبة في عملية زراعية متكاملة، مع تطبيق جميع المفاهيم والمعارف المكتسبة خلال المادة.
Indicative Contents المحتويات الإرشادية	المحتويات الإرشادية لمادة الساحبات الزراعية: **<u>الجزء النظري:</u>** **الأسبوع 1-2: مقدمة للساحبات الزراعية** • تعريف بالساحبات الزراعية وأهميتها في العمليات الزراعية. • تطور الساحبات وتصنيفها حسب الاستخدامات والقدرة. • المكونات الرئيسية للساحبة (الشاصي، المحرك، أنظمة التحكم.**(4 ساعات)** **الأسبوع 3-4: المحركات في الساحبات الزراعية** • أساسيات عمل محركات الديزل والبنزين.

- مكونات المحرك الأساسية (الأسطوانة، المكبس، عمود الكرنك، إلخ.
- دورة الاحتراق الرباعية (الاشتعال الداخلي.**(4 ساعات)**

الأسبوع 5-6: أنظمة نقل القدرة

- شرح آلية نقل القدرة من المحرك إلى العجلات.
- مكونات نظام النقل (الكلتش، الجير، عمود التدوير.(
- أنواع ناقلات الحركة (يدوية وأوتوماتيكية.**(4 ساعات)**

الأسبوع 7-8: نظام التوجيه والمكابح

- مكونات نظام التوجيه في الساحبة.
- أنواع أنظمة المكابح (القرصية، الطبلة.(
- تأثير هذه الأنظمة على الأداء والسلامة.**(4 ساعات)**

الأسبوع 9-10: أنظمة العجلات والجنزير

- تصنيف العجلات والجنزير وتأثيرهما على الأداء.
- استخدامات العجلات المختلفة حسب الظروف الميدانية.
- التحليل المقارن بين العجلات المطاطية والجنزيرية.**(4 ساعات)**

الأسبوع 11: أنظمة الهيدروليك في الساحبات

- مكونات النظام الهيدروليكي (المضخة، الأسطوانات، السوائل).
- تطبيقات النظام الهيدروليكي في رفع المعدات الزراعية.**(2 ساعة)**

الأسبوع 12: وحدات القدرة

- فهم مفهوم القدرة الزراعية وتوزيع الطاقة.
- استخدام) PTO قوة السحب الخلفي) ونقل الطاقة إلى المعدات الزراعية.**(2 ساعة)**

الأسبوع 13: أنظمة التبريد والتشحيم

- مكونات نظام التبريد في الساحبة.
- أهمية التشحيم لتقليل الاحتكاك وزيادة العمر الافتراضي للأجزاء المتحركة.**(2 ساعة)**

الأسبوع 14: استهلاك الوقود وكفاءة الطاقة

- العوامل المؤثرة على استهلاك الوقود.
- استراتيجيات تحسين كفاءة الوقود في العمليات الزراعية.**(2 ساعة)**

الأسبوع 15: التكنولوجيات الحديثة في الساحبات الزراعية

- تطبيقات أنظمة GPS والأنظمة الذكية لتحسين الأداء الزراعي.
- مستقبل التكنولوجيا في تحسين كفاءة الساحبات.**(2 ساعة)**

<u>الجزء العملي</u>:

الأسبوع 1: التعرف على الساحبات الزراعية

- استعراض الأنواع المختلفة من الساحبات في المختبر أو الميدان.
- دراسة مكونات الساحبة بشكل مباشر . **(3 ساعات)**

الأسبوع 2: تصنيف الساحبات

- جولة ميدانية لمشاهدة أنواع مختلفة من الساحبات واستخداماتها.
- تقديم تقرير مقارن بين الأنواع المختلفة. **(3 ساعات)**

الأسبوع 3: تفكيك المحرك

- تفكيك محرك ساحبة في المختبر.
- دراسة عملية لمكونات المحرك وفهم وظيفتها. **(3 ساعات)**

الأسبوع 4: فحص نظام نقل القدرة

- دراسة ناقل الحركة في ساحبة واختبار أدائه.
- تحليل حركة التروس وتأثيرها على الأداء. **(3 ساعات)**

الأسبوع 5: اختبار نظام التوجيه والمكابح

- تجربة عملية لاختبار نظام التوجيه والمكابح في ساحبة.
- تحليل الأداء تحت ظروف مختلفة. **(3 ساعات)**

الأسبوع 6: فحص العجلات والجنزير

- تحليل أداء العجلات المطاطية والجنزيرية تحت ظروف ميدانية مختلفة.
- دراسة تأثير استخدام العجلات العريضة والضيقة. **(3 ساعات)**

الأسبوع 7: تجارب النظام الهيدروليكي

- تجربة رفع وتحريك معدات زراعية باستخدام النظام الهيدروليكي في الساحبة.
- تحليل كفاءة النظام الهيدروليكي في عمليات التحميل. **(3 ساعات)**

الأسبوع 8: تقييم وحدات القدرة

- توصيل معدات زراعية بالساحبة عبر.PTO
- اختبار كفاءة نقل الطاقة بين الساحبة والمعدات الزراعية. **(3 ساعات)**

الأسبوع 9: فحص أنظمة التبريد والتشحيم

- فحص عملي لنظام التبريد والتشحيم في ساحبة.
- تنفيذ عمليات تشحيم وتغيير زيت للساحبة. **(3 ساعات)**

الأسبوع 10: الصيانة الوقائية للساحبات

	• تنفيذ عملية صيانة وقائية شاملة لساحبة. • فحص وتغيير الأجزاء المهمة مثل المكابح والزيت وأنظمة التشحيم. **(3 ساعات)** **الأسبوع 11: استهلاك الوقود** • قياس وتحليل استهلاك الوقود في ساحبة تحت ظروف تشغيل مختلفة. • تقديم توصيات لتحسين كفاءة الوقود. **(3 ساعات)** **الأسبوع 12: استخدام التكنولوجيا الحديثة** • تجربة استخدام نظام GPS لمراقبة الحقول. • استخدام الأنظمة الذكية في التحكم في العمليات الزراعية. **(3 ساعات)** **الأسبوع 13: ربط المعدات الزراعية بالساحبة** • تجربة ربط معدات مختلفة بالساحبة وتحليل تأثير الأحمال على الأداء. **(3 ساعات)** **الأسبوع 14: كفاءة العمل في الحقل** • اختبار عملي لكفاءة الساحبات في تنفيذ مهام زراعية ميدانية. **(3 ساعات)** **الأسبوع 15: التقييم العملي النهائي** • إجراء اختبار عملي شامل يشمل جميع الجوانب المدروسة في المادة. • تقديم مشروع نهائي يوضح استخدام الساحبة في عمليات زراعية متكاملة. **(3 ساعات)** Total hrs = 75 = SSWL - (Exam hrs) = 80 - 5 = 75 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الاستراتيجية الرئيسية التي سيتم اتباعها في تقديم هذه المادة هي تشجيع مشاركة الطلاب في الأنشطة النظرية والعملية، مع التركيز على تعزيز مهارات التفكير النقدي لديهم. سيتم تحقيق ذلك من خلال المحاضرات، الدروس التفاعلية، والأنشطة العملية التي تشمل تجارب بسيطة وأنشطة ميدانية ذات صلة تثير اهتمام الطلاب. سيتم تحقيق هذه الاستراتيجية من خلال: 1. **المحاضرات التفاعلية** :ستوفر المحاضرات الأساس النظري للمادة، وسيتم تعزيزها باستخدام وسائل بصرية، مقاطع فيديو، ودراسات حالة توضح المفاهيم الأساسية. سيتم تشجيع الطلاب على طرح الأسئلة والمشاركة في النقاشات لتعميق فهمهم. 2. **التجارب العملية والعمل الميداني** :سيشارك الطلاب في جلسات عملية داخل المختبر وفي الميدان لتطبيق المفاهيم النظرية على أرض الواقع. ستشمل هذه الجلسات مهام مثل تفكيك مكونات الساحبة، إجراء صيانة، وتقييم الأداء تحت ظروف تشغيل مختلفة.

3. **ورش العمل لحل المشكلات** :سيتم دمج التعلم القائم على المشكلات من خلال ورش عمل حيث يتم تقديم سيناريوهات واقعية تتعلق باستخدام الساحبات في الزراعة. سيتم تكليف الطلاب بتشخيص المشكلات، اقتراح الحلول، وتحسين أداء الساحبة بناءً على المعطيات المتاحة. 4. **المشاريع الجماعية والتعاون** :ستتيح المشاريع الجماعية للطلاب العمل معًا على مهام عملية أكبر، مثل إجراء تحليل كفاءة أو مقارنة بين أنواع مختلفة من الساحبات لمهام زراعية محددة. يعزز هذا العمل الجماعي مهارات التواصل والتعاون بين الطلاب. 5. **استخدام التكنولوجيا الحديثة** :سيتم دمج التكنولوجيا الحديثة، مثل أنظمة GPS والأنظمة الذكية، في الجلسات العملية لتمكين الطلاب من تجربة الابتكارات في مجال الساحبات الزراعية. هذه التجربة العملية ستعد الطلاب للتعامل مع التقنيات المتقدمة في مستقبلهم المهني. 6. **التقييم والتغذية الراجعة** :سيتم تقديم تقييمات دورية تشمل اختبارات قصيرة، تقارير مختبرية، ومراجعات من الزملاء لضمان انعكاس تقدم الطلاب وفهمهم للمادة. سيتم تقديم ملاحظات بناءة تساعد الطلاب في تحسين أدائهم طوال مدة المادة. من خلال دمج التعلم النظري مع الخبرة العملية الواسعة، ستسهم هذه المادة في تطوير المهارات الفنية والتفكير النقدي لدى الطلاب، مما يؤهلهم للاستخدام الفعال والإدارة السليمة للساحبات الزراعية ووحدات القدرة في حياتهم المهنية المستقبلية.	

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	100	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.6
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**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7

	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	مقدمة حول الساحبات الزراعية، أهميتها ودورها في العمليات الزراعية.
Week 2	تصنيف الساحبات الزراعية حسب النوع والقدرة.
Week 3	المحرك في الساحبات الزراعية (المكونات والوظائف).
Week 4	نظام نقل القدرة (Gearbox) في الساحبات.
Week 5	نظام التوجيه والمكابح في الساحبات.
Week 6	نظام العجلات والجنزير وتأثيره على الأداء الزراعي.
Week 7	امتحان نصف الفصل
Week 8	أنظمة الهيدروليك والرفع في الساحبات الزراعية.
Week 9	وحدات القدرة وتوزيع الطاقة في الساحبات.
Week 10	أنظمة التبريد والتزييت في الساحبات.
Week 11	الاختبارات الدورية والصيانة الوقائية للساحبات.
Week 12	تقنيات استهلاك الوقود وتوفير الطاقة في الساحبات.
Week 13	التكنولوجيات الحديثة في الساحبات (مثل GPS والأنظمة الذكية).
Week 14	دراسة الأحمال الزراعية وطرق ربط المعدات بالساحبات.
Week 15	تحليل كفاءة العمل في الحقل باستخدام الساحبات.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	التعرف على مكونات الساحبات الزراعية بشكل مباشر في المختبر.
Week 2	جولة ميدانية لمشاهدة أنواع مختلفة من الساحبات.
Week 3	تفكيك محرك صغير ودراسة أجزائه بالتفصيل.
Week 4	دراسة نظام نقل القدرة في نموذج ساحبة.
Week 5	فحص عملي لأنظمة التوجيه والمكابح على ساحبة حقيقية.
Week 6	اختبار ميداني لأنواع مختلفة من العجلات.
Week 7	تجربة عملية على أنظمة الهيدروليك والرفع.
Week 8	تحليل عملي لكفاءة وحدة القدرة في ساحبة.
Week 9	فحص عملي لأنظمة التبريد والتزييت.
Week 10	تنفيذ صيانة وقائية على نموذج ساحبة.
Week 11	حسابات استهلاك الوقود في ظروف تشغيل مختلفة.
Week 12	تجربة نظام GPS على ساحبة لمراقبة الحقل.
Week 13	تجربة عملية لربط معدات زراعية بالساحبة.
Week 14	تجربة ميدانية لاختبار كفاءة الساحبة في العمليات الزراعية.
Week 15	مشروع نهائي أو تقييم عملي شامل.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	الساحبات الزراعية. الاستاذ الدكتور شاكر حنتوش عداي	Yes

Recommended Texts	Tractors and their Power Units. John B. Liljedahl, Paul K. Turnquist, David W. Smith, Makoto Hoki. (2002) Springer.	Yes
Websites	https://www.youtube.com/@HiTech_Farmer/videos https://www.youtube.com/@bigtractorpower/videos	

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 Information معلومات المادة الدراسية					
Module Title	**Soil Science**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐**x Practical** ☐ **Seminar**	
Module Code	**SOIL114**				
ECTS Credits	7				
SWL (hr/sem)	**175**				
Module Level		1	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Aqeel Johni Nassir Hussien		**e-mail**	aqeel.nassir@uobasrah.edu.iq	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Mustafa Fadel Hussein Ali		**e-mail**	mustafa.almoosa@uobasrah.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		1/9/2024	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To understand soil properties (physical, chemical, and biological) and their relevance to plant growth and environmental health. 2. To explore soil formation processes and develop knowledge of soil classification systems used for agricultural and ecological applications. 3. To teach students practical skills for assessing soil health through testing and analyzing soil properties such as pH, texture, and organic matter content. 4. To enhance understanding of soil management techniques for sustainable land use, emphasizing nutrient management, erosion control, and water conservation. 5. To promote awareness of soil's role in environmental systems, including its contribution to the carbon cycle, water filtration, and climate change mitigation. 6. To develop critical thinking for addressing challenges like soil degradation and applying soil conservation practices to improve land productivity and ecosystem resilience.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Demonstrate an understanding of the key functions of soil in ecosystems, including plant growth support, nutrient cycling, and water regulation. 2. Explain the physical properties of soils, such as texture, structure, bulk density, and porosity, and analyze how these properties influence plant growth, water movement, and root penetration. 3. Evaluate the chemical properties of soils, including pH, cation exchange capacity (CEC), and nutrient availability, and assess how these factors impact soil fertility and crop production. 4. Analyze the biological processes in soils, including microbial activity, organic matter decomposition, and the cycling of nutrients like carbon, nitrogen, and phosphorus. 5. Assess the factors influencing soil formation (climate, organisms, topography, parent material, and time), and explain how these factors result in the development of distinct soil types and horizons.

	6. Classify soils based on standard classification systems, and interpret soil profiles to determine soil characteristics and their implications for land use. 7. Develop strategies for soil fertility management, including the use of organic and inorganic amendments, crop rotation, and other techniques to optimize plant growth and soil health. 8. Examine soil-water interactions, including infiltration, water retention, drainage, and how these processes are influenced by soil properties and affect agricultural water management 9. Identify the causes and effects of soil degradation, including erosion, salinization, compaction, and nutrient depletion, and propose management solutions to restore soil health. 10. Explore the role of soils in climate change mitigation, with a focus on carbon sequestration and the potential of soil management practices to reduce greenhouse gas emissions 11. Apply principles of soil conservation and sustainable land management to prevent degradation, enhance soil health, and ensure long-term land productivity.

Indicative Contents
المحتويات الإرشادية
	• **Introduction to Soil:**
	  • Definition and key functions: plant support, nutrient cycling, water regulation, and habitat for organisms.
	  • Importance in agriculture and the environment.
	• **Soil Physical Properties:**
	  • Soil texture (sand, silt, clay) and structure.
	  • Bulk density, porosity, and water movement (infiltration, retention).
	• **Soil Chemical Properties:**
	  • pH and nutrient availability.
	  • Cation exchange capacity (CEC) and nutrient retention.
	  • Nutrient cycles (carbon, nitrogen, phosphorus) and salinity issues.
	• **Soil Biological Properties:**
	  • Soil organisms (bacteria, fungi) and organic matter decomposition.
	  • Role of microorganisms in nutrient cycling and plant health.
	• **Soil Formation and Classification:**
	  • Soil formation factors (climate, organisms, parent material).

	• Soil horizons and classification systems (USDA, FAO).
	
	• **Soil Fertility Management:**
	
	  • Essential nutrients for plants (macro and micro).
	  • Fertilizer use and sustainable soil management practices.
	
	• **Soil-Water Relationships:**
	
	  • Water retention, movement, and irrigation.
	  • Managing drainage and preventing waterlogging.
	
	• **Soil Degradation and Conservation:**
	
	  • Erosion, salinization, compaction.
	  • Soil conservation practices: terracing, cover cropping, agroforestry.
	
	• **Soils and Climate Change:**
	
	  • Soil carbon sequestration.
	  • Role of soil in climate mitigation and adaptation.
	
	• **Practical Soil Science:**
	
	  • Soil sampling, testing (pH, texture), and field assessments.
	  • Application of soil science to agriculture and environmental management.

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

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
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**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Soil science, its importance, and the objective of soil analysis and Definition of Soil.

Week 2	Some morphological characteristics of the soil.
Week 3	Physical-chemical of soil
Week 4	Stock's law of soil
Week 5	Soil texture
Week 6	Soil Structure:
Week 7	Mid-term Exam
Week 8	Soil Water
Week 9	Soil Temperature and Soil Air
Week 10	Soil cation exchange capacity.
Week 11	Soil electrical conductivity (EC).
Week 12	Soil compaction
Week 13	soil degradation
Week 14	Soil cohesion and adhesion and their relationship to moisture content
Week 15	Nutrients and their importance to plants.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Soil Sampling
Week 2	Lab 2: Determining Soil Texture
Week 3	Lab 3: Measuring Soil Density
Week 4	Lab 4: Measuring Soil EC
Week 5	Lab 5: Measuring soil Water content

Week 6	Lab 6: Measuring PH of soil
Week 7	Lab 7: : Determining cohesion of soil

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	محمد علي عبد الرازق. (2010). علم التربة. دار الكتب العلمية.	Yes
Recommended Texts	حسام الدين زكريا. (2015). أسس علم التربة. دار الفكر العربي. عبد الله السعيد. (2012). خصوبة التربة. دار الشروق. فريد حسين. (2018). التربة وبيئتها. دار العلوم. عايدة السعيد. (2013). علم التربة الزراعية. دار الفجر.	No
Websites	https://esdac.jrc.ec.europa.eu/	

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 Information

معلومات المادة الدراسية

Module Title	Field Crops	Module Delivery
Module Type	B	☒ Theory
Module Code	FICR115	☒ Lecture
ECTS Credits	7	☒ Lab
SWL (hr/sem)	175	☐ Tutorial ☐ Practical ☐ Seminar

Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Name	**e-mail**	E-mail
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name Marwan N. Ramadhan Hussain A. Safi	**e-mail**	E-mail marwan.ramadhan@uobasrah.edu.iq
Peer Reviewer Name	Name	**e-mail**	hussain.safi@uobasrah.edu.iq
Scientific Committee Approval Date	1/09/2024	**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

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives	

أهداف المادة الدراسية	1. 1. Develop field problem solving skills. 2. 2. Understand production methods through application of techniques. 3. 3. Identify the main grain crops, their economic importance and the method of cultivation. 4. 4. Understand the different methods and systems of cultivation and the method. 5. 5. Identify seeding methods for grain crops. 6. 6. Identify the agricultural machinery used in soil preparation and cultivation.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. 1. Identify cropping systems. 2. Define field cropping systems and patterns. 3. Discuss grain crops and their importance. 4. Identify the economic importance of major grain crops and land and crop service processes. 5. Understand the crop cycle, its benefits, and design steps. 6. Discuss seeds and their importance. 7. List the physical properties of soil. 8. Identify the method of preparing land for agriculture. 9. Review soil preparation equipment. 10. Discuss the concept of land reclamation. 11. Identify drainage and its importance. 12. Summarize seed technology. 13. Explain modern methods in weed control technology.
Indicative Contents المحتويات الإرشادية	The instructional content includes the following. Identify cropping systems. Define field cropping systems and patterns. Discuss grain crops and their importance. Identify the economic importance of major grain crops and land and crop service processes.

	Understand the crop rotation, its benefits, and design steps. Discuss seeds and their importance. List the physical properties of soil. Identify the method of preparing land for agriculture. Review soil preparation equipment. Discuss the concept of land reclamation. Identify drainage and its importance. Summarize seed technology. Explain modern methods in weed control technology.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The scientific material is presented to students in a simplified manner, linked to real-life examples, especially the obstacles facing specialists in this field related to practical application. The student is involved in discussing each topic related to the material, asking questions and discussing the answers by the students, and using the brainstorming method.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Cropping Systems
Week 2	Field Crop Cultivation Systems and Patterns
Week 3	Cereal Crops and Their Importance
Week 4	Economic Importance of Major Cereal Crops and Land and Crop Service Operations
Week 5	Agricultural rotation, Its Benefits, and Design Steps
Week 6	Seeds and Their Importance
Week 7	Physical Properties of Soil
Week 8	Physical Properties of Soil

Week 9	Preparing the Land for Cultivation
Week 10	Soil Preparation Equipment
Week 11	Soil Preparation Equipment
Week 12	The Concept of Land Reclamation
Week 13	Drainage
Week 14	Seeding Technology
Week 15	Modern Means of Weed Control Technology
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Cereal crops and their importance.
Week 2	Lab 2: Economic importance of major cereal crops and land and crop service operations
Week 3	Lab 3: Crop rotation, and design steps
Week 4	Lab 4: Types of seeds and their importance
Week 5	Lab 5: Physical properties of soil
Week 6	Lab 6: Methods of land preparation
Week 7	Lab 7: Weed control technology

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Soil preparation equipment, Soil principles, Seeding and fertilization equipment	Yes

Recommended Texts	Field crop principles	Yes
Websites	Field crop principles	

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 Information

معلومات المادة الدراسية					
Module Title	رياضيات			**Module Delivery**	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	MATH111				
ECTS Credits	5				
SWL (hr/sem)	150				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	سمير خيري لازم		**e-mail**	samir.lazim@uobasrah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	M.Sc.	
Module Tutor	سمير خيري لازم		**e-mail**	samir.lazim@uobasrah.edu.iq	
Peer Reviewer Name	سمير خيري لازم		**e-mail**	samir.lazim@uobasrah.edu.iq	
Scientific Committee Approval Date	01/09/2024		**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

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. **تزويد الطالب بالطرق المتنوعة في المشتقة والتكامل للدوال من أجل تنمية قدراته العقلية عند حل التمارين .** 2. **تمكين الطلبة من التوصل إلى حل للمشكلة والاستفادة منها في مواد علمية أخرى.** 3. **ـ تعلم كيفية التعامل مع المتجهات وتحليلها لزيادة معرفته عند التعامل مع الكميات الفيزيائية وتطبيقها في دروسه العلمية التخصصية.**

	4. **ربط البيانات الرياضية بمعلوماته للوصول إلى حل للقضية والاستفادة منها في موضوعات علمية أخرى.** 5. **سيكون الطلاب بعد اجتياز هذه الدورة قادرين على فهم مبادئ الرياضيات الأساسية ويمكنهم التعامل مع المشاكل الرياضية المختلفة مما يجعلهم مؤهلين لفهم مواضيع جديدة أكثر تعقيدًا.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. **فهم وتطبيق مجموعة متنوعة من الأساليب الرياضية: يتعلم الطلاب مجموعة متنوعة من الطرق والأساليب الرياضية المختلفة التي يمكن استخدامها لحل المسائل الرياضية المعقدة.** 2. **تطوير مهارات التفكير النقدي :يتم تعزيز مهارات التحليل والتركيب والتفكير النقدي عندما يتعلم الطلاب طرقًا رياضية متنوعة .يتم تشجيع الطلاب على التفكير بشكل منهجي والتحليل العميق للمسائل الرياضية** 3. **القدرة على حل المسائل الرياضية المعقدة: يتعلم الطلاب كيفية تحليل وفهم المسائل الرياضية المعقدة وتطبيق الأساليب والتقنيات الرياضية المناسبة لحلها بشكل صحيح.** 4. **التفكير الإبداعي والابتكار: يشجع تعلم طرق رياضية متنوعة الطلاب على التفكير الإبداعي والابتكار في مجال حل المسائل الرياضية. يتعلم الطلاب كيفية تطوير حلول جديدة وفريدة باستخدام الأساليب الرياضية.**
Indicative Contents المحتويات الإرشادية	مقدمة عن الدالة – منطلق ومدى الدالة - أمثلة وتمارين حول مدى ومنطلق الدالة - غاية الدالة – غاية الدالة ان وجدت – فحص غاية يمين ويسار الدالة. غاية الدالة اللانهائية – أمثلة وتمارين - رسم الدوال بابسط صورة ممكنة - المشتقة – الصيغ العامة للأشتقاق – مشتقة الدالة البارامترية – التفاضل الضمنية. تطبيقات المشتقة لأيجاد معادلة المستقيم المماس لمنحني الدالة – قاعدة السلسلة مقدمة عن التكامل- صيغ التكامل الغير محدد- التكامل المحدد - الدوال اللوغارتمية – الخواص - مشتقة وتكامل الدوال اللوغارتمية مراجعة عامة وتمارين الدوال الأسية – الخواص – مشتقة وتكامل الدوال الأسية - الدوال المثلثية – الخواص – مشتقة وتكامل الدوال المثلثية مقدمة عامة عن المتجهات – وحدة المتجه – معادلة المتجه في المستوي - المتجه في الفضاء – معادلة المتجه في الفضاء المتجه في الفضاء – معادلة المتجه في الفضاء - ضرب المتجهات – الضرب الثنائي العددي والمتجهي – الضرب الثلاثي العددي والمتجهي

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم	
Strategies	الاستراتيجية الرئيسية التي سيتم اعتمادها في تقديم هذه الوحدة هي تشجيع مشاركة الطلاب في التمارين، والتي سيتم تحقيقها من خلال المشاركة في الأنشطة التعليمية التي تساهم في تطوير استراتيجيات حل المشكلات ومهارات التفكير لفهم المفاهيم الرياضية. إن استخدام استراتيجيات التدريس التي تتطلب المشاركة المعرفية في بناء المعرفة الجديدة يسلط الضوء على أهمية حل المشكلات في الرياضيات. إن استخدام مهام حل المشكلات التي تلبي طرق التفكير المختلفة التي يظهرها الطلاب، بناءً على المعرفة التي يجلبونها إلى الفصل الدراسي.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
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)	5 and 10	LO #1, #2 and #10, #11
	Assignments	3	15% (15)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	0	0	Continuous	All
	Report	1	10%(10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		100% (100 Marks)

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	مقدمة عن الدالة – منطلق ومدى الدالة
Week 2	أمثلة وتمارين حول مدى ومنطلق الدالة
Week 3	غاية الدالة – غاية الدالة ان وجدت – فحص غاية يمين ويسار الدالة
Week 4	غاية الدالة اللانهائية – أمثلة وتمارين
Week 5	رسم الدوال بابسط صورة ممكنة
Week 6	المشتقة – الصيغ العامة للأشتقاق – مشتقة الدالة البارامترية – التفاضل الضمني
Week 7	تطبيقات المشتقة لأيجاد معادلة المستقيم المماس لمنحني الدالة – قاعدة السلسلة
Week 8	مقدمة عن التكامل- صيغ التكامل الغير محدد- التكامل المحدد
Week 9	الدوال اللوغارتمية – الخواص - مشتقة وتكامل الدوال اللوغارتمية
Week 10	الدوال الأسية – الخواص – مشتقة وتكامل الدوال الأسية
Week 11	الدوال المثلثية – الخواص – مشتقة وتكامل الدوال المثلثية
Week 12	مقدمة عامة عن المتجهات – وحدة المتجه – معادلة المتجه في المستوي
Week 13	المتجه في الفضاء – معادلة المتجه في الفضاء
Week 14	ضرب المتجهات – الضرب الثنائي العددي والمتجهي – الضرب الثلاثي العددي والمتجهي
Week 15	أسبوع التحضير قبل الامتحان النهائي

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.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	[1] Thomas' Calculus: Thirteenth Edition , George B. Thomas, Jr.2006 [2] التفاضل والتكامل-تاليف الدكتور علي عزيز علي وعبد الرزاق علي الجامعة المستنصرية- 1980	Yes
Recommended Texts		
Websites		

Module Information معلومات المادة الدراسية					
Module Title	**فيزياء عامة**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**GPHY120**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	سمير خيري لازم أكرم عبد الدائم أحمد		**e-mail**	**samir.lazim@uobasrah.edu.iq** **akram.ahmed@uobasrah.edu.iq**	
Module Leader's Acad. Title	Professor Lecturer		**Module Leader's Qualification**	M.Sc. Ph.D.	
Module Tutor	سمير خيري لازم		**e-mail**	**samir.lazim@uobasrah.edu.iq**	
Peer Reviewer Name	سمير خيري لازم أكرم عبد الدائم أحمد		**e-mail**	**samir.lazim@uobasrah.edu.iq** **akram.ahmed@uobasrah.edu.iq**	
Scientific Committee Approval Date	01/09/2024		**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives	

أهداف المادة الدراسية	6. التعرف على أهم المفاهيم الأساسية والنظريات في الفيزياء وكيفية استنتاج القوانين الفيزيائية واشتقاقها بشكل رياضي صحيح. 7. إعطاء أساس علمي وتطبيقي للطلبة بما يخدم متطلبات دراسة طلبة كلية الزراعة في المراحل المتقدمة . 8. القدرة على حل المسائل العلمية في الآلات الزراعية.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	5. حل المسائل الفيزيائية باستخدام التفكير الكمي والنوعي بما في ذلك التقنيات الرياضية المتطورة. 6. التعرف على الكميات الفيزيائية؛ ونظام الوحدات؛ وأبعاد الكميات الفيزيائية. 7. ملخص لبعض المصطلحات والتعاريف الفيزيائية. 8. شرح ومناقشة أنواع الحركة المنتظمة. 9. ملخص لتطبيقات قوانين نيوتن الأساسية للحركة. 10. وصف اتجاه متجه عزم الدوران. 11. مناقشة ميكانيكا الموائع العامة وخصائص الموائع. 12. 3. تلخيص معادلة الاستمرارية ومعادلة برنولي. 13. إظهار وشرح بعض تطبيقات معادلة برنولي.
Indicative Contents المحتويات الإرشادية	الكميات الفيزيائية وأنظمة القياس والابعاد الفيزيائية - بعض المصطلحات الفيزيائية المهمة. حركة الأجسام : الحركة في بعد واحد (معادلات الحركة على خط مستقيم بتعجيل ثابت - معادلات الحركة لجسم ساقط سقوط حر)- الحركة في بعدين (في مستوي) : معادلات الحركة الدائرية المنتظمة - معادلات الحركة للمقذوفات-حل التمارين والمناقشة. نبذة مختصرة عن قوانين نيوتن للحركة وبعض تطبيقاتها- العزم الدوراني والاتزان التام للأجسام - **إيجاد المعادلة الاتجاهية لعزم القوة**- حل التمارين والمناقشة. الموائع : مقدمة عامة ، خواص المائع - الشد السطحي – الأنابيب الشعرية – زاوية التلامس - الضغط في السوائل الساكنة- حل التمارين والمناقشة. مراجعة عامة وتمارين اللزوجة , قانون نيوتن للزوجة , تأثير درجة الحرارة والضغط على اللزوجة- مقدمة عن جريان الموائع- حل التمارين والمناقشة. بعض تطبيقات معادلة برنولي – مقياس فينتوري- انبوب بيتوت – نظرية تورشلي- مناقشة عامة. انبوب بيتوت – نظرية تورشلي- أسبوع التحضير قبل الامتحان النهائي.

استراتيجيات التعلم والتعليم

Strategies	الاستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة في التمارين مع تحسين وتوسيع مهارات التفكير النقدي لديهم في نفس الوقت. سيتم تحقيق ذلك من خلال الفصول الدراسية، والدروس التفاعلية، ومن خلال النظر في أنواع التجارب البسيطة. عند شرح مفهوم صعب في فصل فيزياء، حاول إعطاء مثال أو حكاية لمساعدة الطلاب على فهم الفكرة. إذا كان الطلاب قادرين على ربط مفهوم بشيء حدث في حياتهم، فمن المرجح أن يتذكروه لاحقًا. سيكون لدى طلابك كميات متفاوتة من المعرفة بأجزاء مختلفة من دورة الفيزياء. لمراعاة ذلك، ابحث عن فجوات في فهم كل طالب من خلال إجراء اختبار لاحق قبل أن تبدأ في تدريس المادة. يجب عليك بعد ذلك تنظيم فصلك وفقًا لمستوى معرفة كل طالب والبدء في البناء من هناك.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

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

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	الكميات الفيزيائية وأنظمة القياس والابعاد الفيزيائية - بعض المصطلحات الفيزيائية المهمة
Week 2	بعض المصطلحات الفيزيائية المهمة
Week 3	حركة الأجسام : الحركة في بعد واحد (معادلات الحركة على خط مستقيم بتعجيل ثابت - معادلات الحركة لجسم ساقط (سقوط حر
Week 4	الحركة في بعدين (في مستوي) : معادلات الحركة الدائرية المنتظمة - معادلات الحركة للمقذوفات
Week 5	نبذة مختصرة عن قوانين نيوتن للحركة وبعض تطبيقاتها
Week 6	العزم الدوراني والاتزان التام للأجسام
Week 7	إيجاد المعادلة الاتجاهية لعزم القوة
Week 8	الموائع : مقدمة عامة ، خواص المائع - الشد السطحي – الأنابيب الشعرية – زاوية التلامس
Week 9	الضغط في السوائل الساكنة
Week 10	اللزوجة , قانون نيوتن للزوجة , تأثير درجة الحرارة والضغط على اللزوجة
Week 11	مقدمة عن جريان الموائع
Week 12	معادلة الأستمرارية – معادلة برنولي
Week 13	بعض تطبيقات معادلة برنولي – مقياس فينتوري
Week 14	انبوب بيتوت – نظرية تورشلي
Week 15	أسبوع التحضير قبل الامتحان النهائي

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: تجربة البنول
Week 2	Lab 2: تجربة البندول المركب
Week 3	Lab 3: تجربة معامل يونك
Week 4	Lab 4: تجربة معامل الأحتكاك
Week 5	Lab 5: تجربة معامل الأنكسار
Week 6	Lab 6: تجربة عزم القصور الذاتي
Week 7	Lab 7: تحقيق قانون هوك باستخدام نابض حلزوني وتعيين ثابت القوة للنابض (الجزء الأول)
Week 8	تعيين الكتلة للنابض بطريقة تذبذبية (الجزء الثاني)

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts		
Recommended Texts	[1] (Serway, Jewett – Physics for Scientists and Engineers with Modern Physics (9th edition 2008) [2] David Halliday- Fundamentals of Physics Bush. (9th edition 2008)	
Websites	https://www.alfreed-ph.com/2019/02/fundamentals-of-physics-Manual-Solution-pdf.html	

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 Information

معلومات المادة الدراسية

Module Title	**Engineering Drawing**	**Module Delivery**	
Module Type	**B**	☒ **Lab** ☒ **Tutorial** ☒ **Practical**	
Module Code	**ENDR117**		
ECTS Credits	**7**		
SWL (hr/sem)	**175**		

Module Level	1	**Semester of Delivery**	2
Administering Department	Agricultural machines and equipment	**College**	Agriculture
Module Leader	Asmaa Abd Ala AL Aedan	**e-mail**	E-mail
Module Leader's Acad. Title	lecture	**Module Leader's Qualification**	M.Sc.
Module Tutor	Ali Hussein Awad	**e-mail**	ali.awad@uobasrah.edu.iq
Peer Reviewer Name	Assad Yousif Khudher	**e-mail**	E-mail assad.khudher@uobasrah.edu.iq
Scientific Committee Approval Date	01/09/2024	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	• Working in the field of engineering drawing to create engineering plans and drawings • Obtaining the skills required for the post-graduation plan (postgraduate studies). • Applying for external tests by local/regional/international bodies. • Providing students with skills to work in scientific and research laboratories and study engineering drawing
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Learn about manual drawing tools and modern methods 2- Correct installation of the drawing board and implementation of the information table 3- Professional drawing of lines, curves and circles 4- Drawing of projections 5- Other methods for drawing projections 6- Perspective drawing 7- Section drawing, shading and drawing hidden parts 8- Detailed drawing 9- Assembly drawing 10- Inking 11- Methods of saving drawing boards 12- Quick drawing 13- Documenting and authenticating the boards 14- Executive drawing 15- Learn about automated drawing
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. - Accuracy - Imagination

	- Clear ideas before starting to draw - Taking into account all dimensions includes the dimensions of the size and the dimensions of the site - Take all the information, date and ratification Determine the shades of the cut, the vehicle and the hidden parts - Setting details to read the painting and all process and assembly fees - Clean and taking into account the conditions for saving paintings

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	-To practice in the first place and apply scientific conditions in drawing parts and mechanical systems - Watch models and models on reality (physics) to help imagine and apply - Evaluating the duties after completing them immediately Classical evaluation and the end of the course

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	127	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
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	5%(5)	5 and 10	All 3 h Structured
	Assignments	5	5% (5)	2 and 15	All 3 h Structured
	Projects / Lab.	10	20% (20)	Continuous	All hours Structured
	Report	0	0	0	
Summative assessment	Midterm Exam	2hr	10% (10)	7	The Structured after 7 week
	Final Exam	3hr	50% (50)	16	The Structured all 16 week
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي نظري +العملي (مختبر الرسم)

	Material Covered
Week 1	Introduction to engineering drawing tools
Week 2	Introduction to the types of engineering drawing lines
Week 3	How to plan and install a drawing board
Week 4	Engineering operations, part one, includes A- Bisecting a straight line and B- Bisecting an angle.
Week 5	Engineering operations, part two, includes: C- Draw a pentagon inside a circle.
Week 6	Engineering operations, part three, includes: D- Draw a hexagon given the side length and E- Draw a hexagon surrounding a circle

Week 7	Engineering operations, part four, includes: E- Draw an arc tangent to a straight line
Week 8	Engineering operations, part Five, includes: F- Draw an arc tangent to the circumference of a circle and a known straight line and Draw a tangent to an interior circle.
Week 9	Dimensions of size and dimensions of the site
Week 10	Drawing of the projected (three faces)
Week 11	The drawing of the engineering (six faces)
Week 12	Perspective drawing (model)
Week 13	Draw the pieces and script
Week 14	The concept of detailed and assembly
Week 15	Inheritance
Week 16	The concept of drawing using the machine and Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	الرسم الهندسي لطلبة كليات الزراعة. د. ناطق صبري حسن. 9	Yes
Recommended Texts	Engineering drawing for engineers and technicians	No
Websites	https://books-library.net/free-1020743869-download	

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 Information

معلومات المادة الدراسية

Module Title	**Plane survey**	**Module Delivery**	
Module Type	**B**		☒ **Theory**
Module Code	**PLSU118**		☒ **Lecture**
ECTS Credits	**6**		☒ **Lab**
SWL (hr/sem)	**175**		☒ **Tutorial**
			☒ **Practical**
			Seminar

Module Level	1	**Semester of Delivery**	2
Administering Department	Agricultural Machines and equipment	**College**	Agriculture
Module Leader	Dheyaa Sbahi Ashour	**e-mail**	dheyaa.ashour@uobasrah.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor	Dheyaa Sbahi Ashour	**e-mail**	dheyaa.ashour@uobasrah.edu.iq
Peer Reviewer Name	Abdelahad Abas Salim	**e-mail**	abdelahad.salim@uobasah.edu.iq
Scientific Committee Approval Date	1/9/2024	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Confirming the location of engineering works and planning and constructing agricultural projects such as canals, farms, orchards, etc.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Acquire skill in the topic the drawing scales and their type 2. Acquire skill in the topic the methods of measuring distances 3. Acquire skill in the topic Use distance measuring tools. 4. Acquire skill in the correction of measurement errors. 5. Acquire skill in the devices used to measure distances. 6. Acquire skill in the topic angles. 7. Acquire skill in the topic irregular spaces. 8. Acquire skill in the topic measure distances across obstacles. 9. Acquire skill in the erecting columns.
Indicative Contents المحتويات الإرشادية	Educational content includes the following: Identify plane survey science Learn about survey systems Employment of plane survey in agriculture sciences as the irrigation, draining, classifying of agriculture lands……. etc.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Visual communication using computers and display screens to explain lectures to students to increase the student's mental comprehension. Verbal communication by explaining lectures, clarifying ideas, and group participation by answering questions. Written communication by enabling the student to express his scientific ideas about the subject and solve scientific problems.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #8, #9
	Assignments	2	10% (10)	6 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #9
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (The weekly practical curriculum)

المنهاج الاسبوعي العملي

	Material Covered
Week 1	Definition of planning, its divisions, units of measurement, drawing scale and its types

Week 2	Measuring horizontal distances
Week 3	Indirect measurement of distances
Week 4	Direct measurement of distances
Week 5	Measurement errors and sources of measured distances
Week 6	Scanning with chain or tape and control and investigation lines types
Week 7	Steps for scanning with chain or tape
Week 8	**Midterm Exam**
Week 9	Field notebook and Chain scanning methods
Week 10	Calculating the areas of regular shapes
Week 11	Calculating irregular shapes
Week 12	Erecting and dropping columns and measuring in the presence of obstacles
Week 13	Types of leveling devices and ruler reading
Week 14	Methods of calculating levels
Week 15	Sequential settlement
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Measuring tools on maps
Week 2	Field measuring tools and methods of using them
Week 3	Estimating horizontal distances
Week 4	Measure distances in steps
Week 5	Set straight lines

Week 6	Measure distances across obstacles
Week 7	Erecting and Dropping columns
Week 8	**Evaluate of student understanding by tutor**
Week 9	Drawing scale
Week 10	Training in drawing and reading maps
Week 11	Training on using the field notebook
Week 12	Types of leveling devices and ruler reading
Week 13	Use of leveling devices
Week 14	Sequential settlement
Week 15	Field training on sequential settlement
Week 16	**Final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Al-Khafaf, Riad Saleh (2000): Foundations of plane space and topography. faculty of Agriculture. University of Al Mosul. Iraq	Yes
Recommended Texts	Al-Ashry and Al-Saeed Ramadan (2000): Planning and its applications in agriculture. faculty of Agriculture. Al-Shattabi. Al-Escandria University. Egypt.	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 Information
معلومات المادة الدراسية

Module Title	Computer	**Module Delivery**	
Module Type	**B**	**Theory**	
Module Code	**CPMP101**	**Lecture**	
ECTS Credits	**3**	**Lab**	
SWL (hr/sem)	**75**	☐ **Tutorial**	
		☒ **Practical**	
		☐ **Seminar**	

Module Level	1	**Semester of Delivery**	2
Administering Department	Agricultural machines and equipment	**College**	Agriculture
Module Leader	Name Akram Abdul Daem Ahmed	**e-mail**	E-mail: akram.ahmed@uobasrah.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor	Akram Abdul Daem Ahmed Asmaa Abdulah Ahmed	**e-mail**	E-mail akram.ahmed@uobasrah.edu.iq
Peer Reviewer Name	Name	**e-mail**	asmaa.ahmad@uobasrah.edu.iq
Scientific Committee Approval Date	1/09/2024	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1 - Providing the student with scientific knowledge and concepts The field of computers and information technology related to his life and the needs of his community. 2-Introducing the student to the computer components (internal). (and external) and its various accessories. 3- Providing the student with specific skills Computer applications such as games and drawing programs, And data entry. 4- Highlighting the computer as a multi-use tool Aspects of life, focusing on computer characteristics And information technology such as speed, accuracy, and the ability to Storage and others. 5 - Developing the student's abilities and practical skills for employment Computer, and benefiting from it to increase productivity Individuality. 6- Providing students with self-reliance skills Research and investigation through computer applications. 7 - Introducing the student to aspects of the computer environment and environment Various devices attached to it. 8 - Providing students with basic maintenance skills Maintaining the computer, and instilling the principle of Safety or prevention is better than cure.) 9 - Directing the student towards acquiring positive inclinations towards Computer and information technology, and strengthening his desire Towards using the computer and its applications. 10 - Training the student to use computer applications Such as graphic programs and educational game programs Entertainment and simulation games. 11 - Training the student and developing his abilities Touch printing. 12 - Training the student on the functions of input units Data and output. 13 - Familiarize the student with various computer applications And information in public life

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	Educational content includes the following: Identify computer components Learn about computer systems Use of office and engineering computer programs Understand the crop rotation, its benefits, and design steps. Discuss seeds and their importance.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1 -Education strategy collaborative concept planning. Strategy 2- Brainstorming education strategy. 3-Education strategy series of notes.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.5
Total SWL (h/sem)	**50**		

الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (The weekly practical curriculum)

المنهاج الاسبوعي العملي

	Material Covered
Week 1	Computer basics
Week 2	Areas of computer use
Week 3	Computer components
Week 4	Types of computers
Week 5	Physical components
Week 6	CPU
Week 7	Input and output units and their types

Week 8	Word program, part one
Week 9	Word program, part two
Week 10	Excel program, part one
Week 11	Excel program, part two
Week 12	PowerPoint program, part one
Week 13	PowerPoint program, part two
Week 14	Statistical analysis program, part one
Week 15	Statistical analysis program, part two
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1:. Identify the computer's physical components by viewing
Week 2	Lab 2: Practical applications of Word
Week 3	Lab 3: Practical applications of Excel
Week 4	Lab 4: Practical applications of PowerPoint
Week 5	Lab 5: Practical applications of statistical analysis software
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	الكتاب المنهجي لوزارة التعليم العالي الجزء 1 والجزء 2 للمرحلة الاولى الكتاب المنهجي لوزارة التعليم العالي الجزء 1 والجزء 2 للمرحلة الاولى سلسلة يسر المصطفى للعلوم " اساسيات الحاسوب والانترنت, الاوفس 2010 د. زياد محمد عبود, 2013	Yes
Recommended Texts	سلسلة يسر المصطفى للعلوم " اساسيات الحاسوب والانترنت, الاوفس 2010 د. زياد محمد عبود, 2013	Yes
Websites	مركز الحاسبة اإللكترونية، جامعة البصرة	

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
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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 Information معلومات المادة الدراسية					
Module Title	**Workshop**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ENWO121**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		2
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Qusay Sameer Sabah		**e-mail**	qusay.sameer@uobasrah.edu.iq	
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		M.Sc
Module Tutor	Name		**e-mail**	E-mail	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		10/09/2024	**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 أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	By the end of the module, students should be able to: 1. **Identify and utilize hand tools** and workshop equipment for basic metalworking operations. 2. **Apply welding techniques** such as arc welding, gas welding, and soldering in practical scenarios. 3. **Understand the properties of different metals** and choose appropriate methods for forming, cutting, or joining them. 4. **Operate lathe and drilling machines**, applying standard procedures to achieve desired dimensions and shapes. 5. **Implement industrial safety procedures**, recognizing and mitigating risks in a workshop environment. 6. **Assemble mechanical components** using appropriate joining techniques (e.g., welding, bolting). 7. **Problem-solve workshop tasks**, selecting suitable tools and techniques for specific operations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module, students will be able to: 1. **Identify and use workshop tools and equipment** effectively for basic metalworking tasks, ensuring proper maintenance and operation. 2. **Demonstrate proficiency in welding techniques**, including arc welding, gas welding, and soldering, applying them to various materials and joint configurations. 3. **Understand the properties of metals** (e.g., steel, aluminum, copper), and choose appropriate methods for their manipulation, joining, and finishing. 4. **Safely operate lathe and drilling machines**, performing basic turning, boring, threading, and precision hole-making operations. 5. **Implement industrial safety standards**, recognizing potential hazards and applying protective measures while working with tools, machines, and hot metals. 6. **Assemble mechanical components** using welding, bolting, and fastening techniques, ensuring structural integrity and functional accuracy. 7. **Solve practical engineering challenges** by selecting suitable materials, tools, and techniques to meet design and manufacturing requirements.
Indicative Contents	1. **Workshop Safety and Introduction**:

المحتويات الإرشادية	o Workshop safety protocols (PPE, fire safety, emergency procedures) o Safe handling of tools and equipment o Hazards in metalworking and machine operations o Introduction to basic workshop layout and equipment 2. **Hand Tools and Measuring Instruments**: o Overview of hand tools (hammers, wrenches, files, etc.) o Proper use of calipers, micrometers, and gauges for precision measurement o Tool maintenance and sharpening o Application of hand tools in metal cutting, shaping, and finishing 3. **Welding Techniques**: o **Arc Welding (SMAW)**: Principles, equipment setup, and practical welding exercises o **Gas Welding (Oxy-Acetylene)**: Flame adjustment, gas handling, and welding metals o **Soldering and Brazing**: Techniques for small-scale joints and delicate metalwork o Types of weld joints (butt, lap, corner, etc.) and their applications 4. **Metals and Their Properties**: o Classification of metals (ferrous and non-ferrous) o Mechanical properties: tensile strength, hardness, ductility, and toughness o Selection of materials based on application and performance requirements o Testing metals for hardness and flexibility 5. **Blacksmithing and Metal Forming**: o Forging basics: Heating, hammering, and shaping metal using anvils and hammers o Introduction to die forming and bending techniques o Simple projects: Creating hooks, tools, or decorative metal objects o Heat treatment processes: Annealing, hardening, and tempering 6. **Lathe Machine Operations**: o Lathe components and their functions o Basic turning, facing, and parting operations o Thread cutting and boring on the lathe o Advanced lathe operations: tapering and knurling 7. **Drilling Machines and Techniques**: o Types of drilling machines and drill bits o Precision drilling: Hole creation, countersinking, and tapping o Speed and feed calculations for drilling operations o Safety precautions when using drilling machines 8. **Mechanical Assembly and Joining**:

	○ Techniques for assembling components (welding, bolting, riveting) ○ Alignment and tolerance in mechanical assemblies ○ Use of mechanical fasteners and joints for load-bearing applications ○ Practical project: Assembling metal parts using various joining methods

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**1 1. Cooperative Learning** • **Description**: Students work in small groups to achieve shared learning goals. This fosters collaboration and communication skills. • **Techniques**: Group projects, peer teaching, and cooperative problem-solving activities. **2. Brainstorming** • **Description**: A creative thinking technique that encourages the free flow of ideas among students to solve a problem or generate concepts. • **Techniques**: Idea generation sessions, round-robin brainstorming, and using mind maps to organize thoughts. **3. Differentiated Instruction** • **Description**: Tailoring teaching methods and resources to accommodate diverse learners' needs, preferences, and readiness levels. • **Techniques**: Flexible grouping, varied instructional materials, and personalized assessments. **4. Project-Based Learning** • **Description**: Students engage in extended projects that require critical thinking, collaboration, and real-world problem-solving. • **Techniques**: Inquiry-based projects, service-learning, and interdisciplinary themes.

5. Flipped Classroom

- **Description**: A model where traditional lecture and homework elements are reversed. Students learn content at home and apply knowledge in class.
- **Techniques**: Video lectures, online discussions, and in-class collaborative activities.

6. Socratic Method

- **Description**: A form of dialogue where the teacher asks open-ended questions to stimulate critical thinking and discussions among students.
- **Techniques**: Questioning strategies, group discussions, and debates.

7. Direct Instruction

- **Description**: A teacher-centered approach that focuses on explicit teaching of skills or concepts through structured lessons.
- **Techniques**: Lectures, demonstrations, and guided practice.

8. Experiential Learning

- **Description**: Learning through direct experience and reflection. Students engage in hands-on activities and apply their knowledge in real-world situations.
- **Techniques**: Simulations, field trips, internships, and service projects.

9. Inquiry-Based Learning

- **Description**: Students learn by asking questions, conducting investigations, and building new understandings. This approach emphasizes curiosity and exploration.
- **Techniques**: Research projects, experiments, and student-led discussions.

10. Multimedia and Technology Integration

- **Description**: Incorporating various media and technology tools to enhance learning experiences and engage students.
- **Techniques**: Interactive presentations, educational software, and online collaboration tools.

11. Scaffolding

- **Description**: Providing support structures to help students build on their prior knowledge and gradually increase their understanding of new concepts.
- **Techniques**: Modeling, guided practice, and gradually removing support as students gain independence.

	12. Reflective Practice • **Description**: Encouraging students to think critically about their learning experiences, strategies, and outcomes to promote continuous improvement. • **Techniques**: Journals, self-assessments, and peer feedback.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Engineering Workshops
Week 2	Hand Tools and Basic Workshop Equipment
Week 3	Introduction to Metal Welding
Week 4	Arc Welding
Week 5	Gas Welding (Oxy-Acetylene Welding)
Week 6	Industrial Safety in Workshops
Week 7	Mid
Week 8	Metals and Their Properties
Week 9	General Blacksmithing and Metal Forming
Week 10	Introduction to Lathe Machines
Week 11	Advanced Lathe Operations
Week 12	Drilling Machines
Week 13	Techniques for Operating Drilling Machines
Week 14	Metal Parts Assembly
Week 15	General Review and Practical Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	الورش التأسيسية / المؤسسة العامة للتعليم الفني والتدريب المهني / المملكة العربية السعودية	Yes
Recommended Texts	**كتاب الورشة الهندسية، م.م. عبد فارس علي العزاوي**	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.