

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program and Course Description Guide

2025

Academic Program Description Form

University Name **University Of Basrah**

Faculty / Institute **College Of Agriculture**

Scientific Department **Department of Agricultural Machines and equipment**

Academic or Professional Program : **Agricultural Machines and equipment**

Final Certificate Name **Bachelors in Agricultural Machines and equipment**

Academic System **Semester System**

Description Preparation Date 10 June 2026

File Completion Date 21 June 2026



Head of Department Name

Prof Dr. Salim Acher Bander

Date 21 June 2026



Scientific Associate Name

Prof Dr. Sadiq Jabar Muhsin

21 June 2026

Signature



This File Is Checked By Prof Dr. Aqeel Abbood Suhaim

Department of Quality Assurance and University Performance

Director of The Department Of Quality Assurance and University Performance

Date 21 June 2026



Prof Dr Sarmad Ghazi Mohammed

Approval of The Dean

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

1. Program Vision

We aspire to be a prestigious program on a global level in education, research, and innovation in the development of agricultural machinery and equipment technology. We aim to contribute to the development of a sustainable and resource-efficient future of agriculture by graduating a generation of qualified and creative experts who contribute to the development of innovative solutions for global agricultural challenges.

2. Program Mission

We strive to provide an inspiring educational environment that encourages innovation and scientific research, while promoting communication and collaboration with the industry and the local community. This approach aims to empower and equip students with the knowledge and skills necessary to become pioneers and innovators in the field of agricultural machinery and equipment design and development. Our goal is to cultivate qualified leaders who contribute to improving the performance of the agricultural sector and enhancing sustainability and development.

3. Program Objectives

- 1. Providing high-quality education that combines theoretical knowledge and practical skills in the fields of agricultural machinery and equipment design, development, and maintenance..**
- 2. Equipping students with the necessary skills to provide innovative and sustainable technological solutions to improve the efficiency and productivity of agricultural operations.**
- 3. Promoting scientific research in the development and improvement of agricultural machinery and equipment technologies to support continuous advancements in performance and productivity..**
- 4. Creating an educational environment that encourages innovation, critical thinking, and fosters interaction with the industry and the local community.**

5 Enhancing awareness of the importance of sustainability in the design and use of agricultural machinery and equipment, and motivating students to adopt environmentally friendly practices in their solutions.

6 Graduating qualified and inspiring professionals who contribute to the development and application of modern technology in the agricultural sector to enhance food security and sustainable development. They will possess the ability to work in various agriculture-related sectors both locally and internationally.

4. Program Accreditation

Not find

5. Other external influences

Not find

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	8	16	%9	Basic
College Requirements	9	28	%16	Basic
Department Requirements	43	131.5	%75	Basic
Summer Training	YES			Basic
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

The stage/ the semester	Course Code	Course Name	Credit Hours	
			theoretical	practical
The second / first	001820	Static mechanics	2	3

The second / first	001820	Mineralogy	2	3
The second / first	001820	Principles of plant protection	2	3
The second / first	001820	Agricultural equipment & machinery	2	3
The second / first	0C1820	Agricultural economics	2	–
The second / first	001820	Lands leveling and amendment	2	3
The second / first	001820	Industrial drawing	–	3
The second / first	U01820	Computer applications 2	–	3
The second / first	001820	Engineering workshop 2	–	3
The second / first	U01820	Crimes of the defunct Ba'ath Party.	2	–
The second / second	002820	Dynamic mechanics	2	3
The second / second	002820	Soil physics	2	3
The second / second	002820	Pesticides	2	3
The second / second	002820	Principles of food industries	2	3
The second / second	0C2820	Principles of animal production	2	3
The second / second	0C2820	Statics	2	3
The second / second	U02820	Arabic language/2	2	–
The second / second	U02820	Specialized English language.	2	–
The third / first	001830	Thermodynamics	2	3
The third / first	001830	Internal Combustion Engine	2	3
The third / first	001830	Animal Production Mechanization	2	3

The third / first	001830	Horticures equipment	2	3
The third / first	001830	Fluid Mechanics	2	3
The third / first	001830	Irrigation and drainage systems	2	3
The third / second	002830	Tractors performance mechanics	2	3
The third / second	002830	Swing and fertilizing equipment	2	3
The third / second	002830	Irrigation and drainage equipment	2	3
The third / second	002830	Design of agricultural equipment	2	3
The third / second	002830	Soil preparation equipment	2	3
The third / second	002830	Experimental design and analysis	2	3
The fourth / first	001840	Plant protection equipment	2	3
The fourth / first	001840	Heavy machinery and equipment	2	3
The fourth / first	001840	Hydraulic equipment and systems	2	3
The fourth / first	001840	Food processing equipment	2	3
The fourth / first	001840	Agricultural tractors electricity	2	3
The fourth / first	001840	Agricultural buildings	2	3
The fourth / first	001840	Agricultural Projects	–	3
The fourth / second	002840	Harvest equipment	2	3
The fourth / second	002840	Post-harvest equipment	2	3
The fourth / second	002840	Economics of agricultural	2	3

		machinery management		
The fourth / second	002840	Maintenance of tractors and agricultural equipment	2	3
The fourth / second	002840	Feed production equipment	2	3
The fourth / second	002840	Seminar	1	–
The fourth / second	002840	Agricultural Projects	–	3

8. Expected learning outcomes of the program

Knowledge

1. Types of machinery and equipment in modern agriculture and how to efficiently utilize them.
- 2.The physical, engineering, and technical principles of agricultural machinery and equipment operation.
- 3.Operation and maintenance techniques necessary for agricultural machinery and equipment.
- 4.Challenges and issues related to the use of machinery and equipment in agriculture and how to address them.

Skills

1. Skills in designing and developing agricultural machinery and equipment to enhance efficiency and reduce costs.
- 2.Critical thinking and problem-solving skills in the field of agricultural machinery and equipment.
- 3.Systematic thinking skills and implementation of technological solutions to improve agricultural operations.
- 4.Management and leadership skills in operating and maintaining agricultural machinery and equipment.

Ethics

- 1.Awareness of the importance of continuous learning and keeping up with the application of technology to improve agricultural productivity and achieve sustainability.**
- 2.Commitment to occupational safety and health in the use and maintenance of agricultural machinery and equipment.**
- 3.Awareness of the importance of environmental sustainability and social responsibility while using agricultural machinery and equipment.**
- 4.Ability to conduct oneself ethically in the agricultural profession and contribute to the sustainable and responsible development of the sector.**
- 5.Dedication to serving the agricultural sector and the community.**

9. Teaching and Learning Strategies

- 1. Enhancing the connection between theory and practice:**
 - Integrating theoretical lectures with practical activities through conducting experiments and observations in laboratories and fields.
 - Organizing field visits to farms, factories, and agricultural companies.
- 2. Continuous diagnostic and guidance assessment:**
 - Utilizing multiple assessment methods such as tests, practical projects, and assignments.
 - Providing personal assessment to measure students' progress and offering feedback to enhance their performance in using agricultural machinery and equipment.
 - Identifying areas in which students need improvement and guiding them towards further development.
- 3. Problem-solving-based learning:**
 - Presenting realistic and specific problems and challenges related to the design and development of agricultural equipment, and encouraging students to seek innovative solutions.

- Fostering innovation and guiding students to utilize the knowledge and skills they have acquired to find practical solutions to the challenges faced by the agricultural sector.

4. Technology–driven learning:

- Incorporating modern technologies and engineering software in teaching the concepts of agricultural machinery and equipment design.
- Providing interactive teaching tools such as 3D models and computer simulations to illustrate engineering concepts.

5. Active interaction:

- Encouraging students to participate in discussions and study groups related to topics concerning agricultural machinery and equipment.
- Employing interactive activities such as field studies or scientific visits to factories and agricultural companies.

6. Cooperative learning:

- Organizing scientific activities and group projects that promote interaction among students and improve their communication and teamwork skills.
- Facilitating knowledge and experience exchange among students by forming multidisciplinary work teams to find realistic solutions to real problems encountered in the agricultural mechanization sector.

7. Self–directed learning:

- Encouraging students to read more about agricultural engineering topics and stay updated on advancements in agricultural machinery and equipment.
- Guiding students to reliable sources of knowledge.

10. Evaluation methods

1. Tests and Questionnaires:

- Using final and midterm exams to assess students' understanding of theoretical concepts and practical applications.

- **Distributing questionnaires to measure students' satisfaction with the quality of teaching, course materials, and the learning environment.**
- 2. Projects and Reports:**
- **Evaluating students' performance through design and development projects of agricultural machinery and equipment, and analyzing the quality of the proposed solutions.**
 - **Requesting reports from students about their practical experiences and applied projects.**
- 3. Practical Assessment:**
- **Assessing students' performance during practical training and workshops, and observing their practical application of concepts and skills.**
 - **Utilizing specific criteria to evaluate students' performance in practical tasks, such as designing and maintaining agricultural equipment.**
- 4. Discussions and Presentations:**
- **Evaluating students' participation in classroom discussions and seminars, and assessing their application of theoretical concepts in solving practical problems.**
 - **Assessing students' presentations and evaluating the clarity and comprehension of concepts and skills related to agricultural machinery and equipment.**
- 5. Assessment of Personal and Technical Abilities:**
- **Assessing the development of students' personal abilities, such as initiative, innovative thinking, and teamwork.**
 - **Evaluating students' technical abilities in using engineering software and design tools to develop agricultural machinery and equipment.**
- 6. Practical Training Assessment:**
- **Assessing students' performance during practical training periods in institutions and agricultural companies, and observing their application of acquired skills and concepts in the program.**

11. Faculty

Faculty Members

faculty members	Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
		General	Special			Staff	Lecturer
Dr. Majid Saleh Hamoud	Professor	Agricultural Machinery	Machine and Agricultural Power Engineering			1	0
Dr. Sadiq Jabbar Mohsen	Professor	Soil Management	Fertilizer Machinery and Equipment			1	0
Mr. Samir Khair Lazem	Professor	Physics	Agricultural Physics			1	0
Dr. Salem Ajr Bandar	Professor	– Machinery and Agricultural Equipment	Agricultural Machinery and Equipment			1	0
Dr. Majid Hazem Rashk	Professor	Machinery and Agricultural Equipment	Agricultural Machinery and Equipment			1	0
Dr. Aqeel Jouni Nasser	Professor	Soil Management	Plowing Equipment and Machinery			1	0
Dr. Asaad Youssef Khudair	Assistant Professor	– Agricultural Machinery	Livestock Machinery Management			1	0

Dr. Mortada Abdulazim Abdulnabi	Assistant Professor	Soil and Water Sciences	Soil Management			1	0
Dr. Marwan Nouri Ramadan	– Assistant Professor	Field Crops	Field Crop Production			1	0
Dr. Haider Abdulhussain Shanann	Lecturer	Agricultural Machinery	Agricultural Machinery			1	0
Dr. Diaa Sbahi Ashour	Lecturer	Soil and Water Sciences	Soil Management			1	0
Dr. Hussein Abdul Kareem Safi	Lecturer	– Field Crops	Field Crop Production			1	0
Dr. Akram Abdul Daim Ahmed	Lecturer	– Field Crops	– Field Crop Machinery			1	0
Mr. Farqad Mortada Hamid	Lecturer	Agricultural Machinery	Agricultural Machinery			1	0
Ms. Asmaa Abdullah Ahmed	Lecturer	Agricultural Machinery	Agricultural Machinery			1	0
Mr. Abbas Abdulhussain Mashael	Lecturer	Animal Production	Animal Production			1	0
Mr. Ali Abdul Majid Alwan	Lecturer	Agricultural Machinery	Agricultural Machinery			1	0

Mr. Ahmed Kazem Mohammed	Assistant Lecturer	– Field Crops	Field Crop Production			1	0
Mr. Qusay Samir Sabah	Assistant Lecturer	Field Crops	Field Crop Production			1	0
Mr. Ali Hussein Awad	Assistant Lecturer	Field Crops	Field Crop Production			1	0
Mr. Mustafa Fadel Hussein	Assistant Lecturer	Soil and Water Sciences	Soil Management			1	0
Mr. Abdulahad Abbas Salem	Assistant Lecturer	Soil and Water Sciences	Soil Management			1	0
Mr. Ammar Musa Salem	Assistant Lecturer	Agricultural Machinery	Agricultural Machinery			1	0

Professional Development

Mentoring new faculty members

Professional guidance for new faculty members relies on providing them with the necessary information to succeed in their academic roles. This is achieved through the following:

1. Introduction to the university and its policies:

New faculty members are introduced to the university's vision, mission, organizational structure, policies, and procedures. The aim is to clarify the overall goal of the university and guide new members towards its achievement.

2. Empowering new members with knowledge of their rights and responsibilities:

New members should have a clear understanding of their rights and duties within the university. This includes laws and regulations related to teaching, research, and university service.

3. Introduction to university facilities and services:

New members should be familiar with the facilities and services available at the university. This includes libraries, laboratories, research centers, and technological resources.

4. Enhancing awareness of program quality and academic accreditation:

New members should understand the importance of academic accreditation and quality standards. This includes providing information about evaluation and accreditation processes.

5. Introduction to scientific research and professional development programs:

New members should be acquainted with scientific research programs and the opportunities available to them. This includes the electronic research system, rewards, and promotions.

Professional development of faculty members

1. Continuing Education and Teaching Skills Development:

- Organizing workshops and specialized training sessions for faculty members to enhance their teaching skills and educational guidance.
- Encouraging faculty members to participate in self-learning and professional development programs online or through courses and seminars offered by other universities or specialized organizations.
- Providing support and funding for participation in workshops and scientific conferences to exchange experiences and acquire new knowledge.

2. Research and Scientific Publishing:

- Providing support and incentives for faculty members to publish scientific research in peer-reviewed journals and participate in national and international scientific conferences.
- Offering assistance resources to develop new research projects and collaborate with industry sectors and relevant institutions.

3. Interaction with Industry and the Community:

- Encouraging faculty members to interact with the local industry and community through scientific consultations and participation in technological development projects.
- Organizing joint workshops and seminars with companies related to the program to exchange knowledge and identify labor market needs.

4. Assessment and Monitoring:

- Conducting periodic evaluations of faculty members' performance and monitoring their progress in achieving professional development goals.

- Providing constructive feedback and assistance in identifying areas that need improvement and further development.
- 5. Resource Provision and Support:**
- Providing financial and technical support to faculty members for research projects, technological development, and educational projects.
 - Supplying necessary resources and human resources to support professional development and scientific research activities.

12. Acceptance Criterion

There is only one criterion for accepting students into this program, which is the overall grade point average (GPA) from their secondary school education in the science track. Students are admitted according to the centralized admission process in the Ministry of Higher Education and Scientific Research

13. The most important sources of information about the program

1. <https://www.cab.uobasrah.edu.iq/>
2. <https://www.facebook.com/profile.php?id=100054214161235&mibextid=ZbWKwL>

14. Program Development Plan

Here is a proposed development plan for the Bachelor's program in Agricultural Machinery and Equipment, aimed at improving the quality of education, enhancing the student experience, and aligning it with the needs of the job market and the aspirations of the agricultural industry:

1. **Continuous Monitoring and Evaluation:**
Conduct regular program assessments to measure the achievement of objectives and identify areas that need improvement. This includes analyzing curriculum and course materials, teaching and assessment methods, infrastructure, and facilities.
2. **Industry and Job Market Needs Assessment:**
Conduct interviews and surveys with employers and professionals in the agricultural industry to identify the skills and knowledge that need to be enhanced in students.
Evaluate technological advancements and innovations in the field of agricultural machinery and equipment and incorporate them into the curriculum.

3. Curriculum and Course Material Updates:

Develop and update the curriculum to include the latest advancements in agricultural engineering and technology. Add new courses that cover topics such as artificial intelligence, sustainability, and robotic control techniques in agriculture.

4. Enhancing Practical Experiences:

Expand opportunities for practical training and learning through partnerships with the industry and local farms. Establish advanced laboratories equipped with state-of-the-art technologies to enable students to experience and apply theoretical concepts.

5. Promoting Research and Innovation:

Promote scientific research in various areas of agricultural machinery and equipment by providing support to students and faculty members. Create platforms for knowledge exchange and collaboration among students, researchers, and industry professionals to foster innovation and develop new solutions.

6. Strengthening Teaching Skills:

Provide training programs and workshops for faculty members to enhance their teaching skills and utilize best educational practices. Encourage faculty members to participate in academic and industrial research and development activities.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
The second / first	001820	Static mechanics	Basic				✓			✓					
The second / first	001820	Mineralogy	Basic			✓				✓					
The second / first	001820	Principles of plant protuction	Basic			✓									
The second / first	001820	Agricultural equipment & machinery	Basic			✓				✓					
The second / first	0C1820	Agricultural economics	Basic				✓		✓					✓	
The second / first	001820	Lands leveling and amendment	Basic			✓					✓				

The second / first	001820	Industrial drawing	Basic			✓				✓					
The second / first	U01820	Computer applications 2	Basic			✓				✓					
The second / first	001820	Engineering workshop 2	Basic			✓				✓				✓	
The second / first	U01820	Crimes of the defunct Ba'ath Party.	Basic			✓									✓
The second / second	002820	Dynamic mechanics	Basic			✓				✓					
The second / second	002820	Soil physics	Basic			✓			✓						
The second / second	002820	Pesticides	Basic			✓			✓						

The second / second	002820	Principles of food industries	Basic			✓			✓						
The second / second	0C2820	Principles of animal production	Basic			✓				✓					
The second / second	0C2820	Statics	Basic			✓				✓					
The second / second	U02820	Arabic language/2	Basic				✓				✓			✓	
The second / second	U02820	Specialized English language.	Basic			✓				✓					
The third / first	001830	Thermodynamics	Basic			✓									

The third / first	001830	Internal Combustion Engine	Basic			✓									
The third / first	001830	Animal Production Mechanization	Basic			✓									
The third / first	001830	Horticutures equipment	Basic			✓									
The third / first	001830	Fluid Mechanics	Basic			✓									
The third / first	001830	Irrigation and drainage systems	Basic			✓				✓					
The third / second	002830	Tractors performance mechanics	Basic			✓				✓					

The third / second	002830	Swing and fertilizing equipment	Basic				✓			✓					
The third / second	002830	Irrigation and drainage equipment	Basic				✓			✓					
The third / second	002830	Design of agricultural equipment	Basic				✓				✓			✓	
The third / second	002830	Soil preparation equipment	Basic			✓				✓					
The third / second	0C2830	Experimental design and analysis	Basic				✓				✓				
The fourth / first	001840	Plant protection equipment	Basic			✓				✓					

The fourth / first	001840	Heavy machinery and equipment	Basic			✓				✓					
The fourth / first	001840	Hydraulic equipment and systems	Basic			✓				✓					
The fourth / first	001840	Food processing equipment	Basic			✓				✓				✓	
The fourth / first	001840	Agricultural tractors electricity	Basic			✓				✓					
The fourth / first	001840	Agricultural buildings	Basic			✓			✓					✓	
The fourth / first	001840	Agricultural Projects	Basic								✓			✓	
The fourth / second	002840	Harvest equipment	Basic			✓				✓					

The fourth / second	002840	Post-harvest equipment	Basic			✓				✓					
The fourth / second	002840	Economics of agricultural machinery management	Basic				✓			✓				✓	
The fourth / second	002840	Maintenance of tractors and agricultural equipment	Basic				✓				✓				✓
The fourth / second	002840	Feed production equipment	Basic			✓				✓					
The fourth / second	002840	Seminar	Basic				✓				✓				✓

The fourth / second	002840	Agricultural Projects	Basic								✓			✓	
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Third-year

First Semester

Course Description Form

1. Course Name:	
Fluid mechanics	
2. Course Code:	
ME304	
3. Semester / Year:	
First /	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
At class	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 / 1.5	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Marwan N. Ramadhan Email: marwan.ramadhan@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	- Introducing the student to the theoretical and practical foundations of applied fluid mechanics. - Enabling the student to conduct experiments and tests related to the individual aspects of the curriculum.
9. Teaching and Learning Strategies	
Strategy	Learn about units, dimensions, and basic measurement systems Identify the definitions of basic physical quantities related to density, relative density, and compressibility Understanding and defining dimensional theory and its computational applications Conduct calculations related to compressive flow Knowing the types of flow of fluids Identify pumps and their types and perform calculations related to discharge and capacity
10. Course Structure	

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	w 1	Units, dimensions and measurement systems	Explanation and clarification Model view Lecture method	Participation and attendance in class and weekly testing
2	3	w 2	Physical quantities	=	=
3	3	w 3	Dimensional theory and its applications Exercises on dimensional theory	=	=
4	3	w 4	Scientific trip	=	=
5	3	w 5	Hydrostatic exercises	=	=
6	3	w 6	Exam	=	=
7	3	w 7	Fluid flow	=	=
8	3	w 8	Exercises on types of flow	=	=
9	3	w 9	Exercises on types of flow	=	=
10	3	w 10	Applications to pressure and manometers	=	=
11	3	w 11	Applications to pressure and manometers	=	=
12	3	w 12	Exercises and problems on types of pumps	=	=
13	3	w 13	Exercises and problems on types of pumps	=	=
14	3	w 14	Exercises and problems on specific gravity, relative density, and mass density	=	=
15	3	w 15	Exam	=	=

11. Course Evaluation	
Distribution of the score out of 20 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc. Score details 20 monthly exams 4 report 4 Oral exam 2 Daily preparation 30 total score	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	Fluid mechanics. Engineer Kazemiya Muhammad / Petroleum Training Institute 1993 Hydraulic and fluid mechanics Dr. P.N.Mody, M.SETH, 17th edition. 2009
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Course Description Form

1.	Course Name:
	Thermodynamics
2.	Course Code:
	ME 301
3.	Semester / Year:
	Autumn semester
4.	Description Preparation Date:

1/9/2025

5. Available Attendance Forms:

Attendance only

6. Number of Credit Hours (Total) / Number of Units (Total)

45 hours, 3 hours per week

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

Name: Hayder Abdel-Hussein Shanan

Email: hayder.shanaan@uobasrah.edu.iq

8. Course Objectives

Course Objectives

1. Learn about the laws of thermodynamics and their applications

2. Utilize energy efficiently

9. Teaching and Learning Strategies

Strategy

- 1- Involving the student in discussion sessions
- 2- Developing the student's abilities to reach the stage of analysis and conclusion
- 3- Creating a competitive atmosphere among students in the answers to scientific topics when asked

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 hours	Thermodynamics	Unit conversion	1- Lecture and slide show	Weekly, monthly, daily, written
2	3 hours				
3	3 hours				

4	3 hours		Review the basics of mathematics and physics	2-Solve problems	and end-of semester exams.
5	3 hours				
6	3 hours		Problems and solutions for thermal work		
7	3 hours		Issues and solutions		
8	3 hours		Measuring pressure using devices		
9	3 hours		Pressure issues		
10	3 hours		Concepts of heat and temperature		
11	3 hours		Temperature measurements		
12	3 hours		Sizes and size measurements		
13	3 hours		Problems and solutions of pressure, temperature and volume		
14	3 hours		Issues of ideal law and laws of dynamics		
15	3 hours		Questions		
			Questions		
			Engine thermal cycle diagrams		
			Refrigeration equipment diagrams		
11. Course Evaluation					
Homework: 15% Daily exam: 15% Written exam: 50% Scientific reports: 20%					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Thermodynamic concepts		

Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://www.scribd.com/docs

Course Description Form

13. Course Name:	Soil physical/ practical
14. Course Code:	SO 301
15. Semester / Year:	Autumn semester
16. Description Preparation Date:	1/9/2025
17. Available Attendance Forms:	Second stage students
18. Number of Credit Hours (Total) / Number of Units (Total)	75 hours/ 3.5 units
19. Course administrator's name (mention all, if more than one name)	Name: Mustafa Fadel Hussain Email: mustafa.almoosa@uobasrah.edu.iq
20. Course Objectives	
Course Objectives	Students learn about the physical properties of soil.

			• Students learn about the mechanical properties of soil. • Teaching students how to measure physical and mechanical properties laboratory and field.		
21. Teaching and Learning Strategies					
Strategy		Explaining methods for measuring and estimating the physical and mechanical properties of soil, explaining the steps for measuring each of them, and assigning students to conduct laboratory and field experimen			
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first week	3	practical	Capillary property soil	practical	Practical repo
second week	3	practical	Soil Moisture conte	practical	Practical repo
third week	3	practical	Soil Moisture conte	practical	Practical repo
fourth week	3	practical	Mechanical analysis of soil	practical	Practical repo
fifth week	3	practical	Mechanical analysis of soil	practical	Practical repo
sixth week	3	practical	Bulk density	practical	Practical repo
seventh week	3	practical	Particle density	practical	Practical repo
eighth week	3	practical	Aggregate stability	practical	Practical repo
ninth week	3	practical	Aggregate stability	practical	Practical repo
tenth week	3	practical	Soil Consistency	practical	Practical repo
eleventh week	3	practical	Soil Consistency	practical	Practical repo
twelfth week	3	practical	Saturated Hydraul conductivity	practical	Practical repo

thirteenth week	3	practical	Saturated Hydraulic conductivity	practical	Practical report
fourteenth week	3	practical	Soil penetration resistance	practical	Practical report
fifteenth week	3	practical	Soil cohesion and adhesion	practical	Practical report
23. Course Evaluation					
50 marks monthly exam					
25 marks practical reports					
25 marks seminar and sources					
24. Learning and Teaching Resources					
Required textbooks (curricular books, if any)					
Main references (sources)			د. مهدي إبراهيم (1991) أساسيات فيزياء تربة، وزارة التعليم العالي والبحث العلمي (كتاب مترجم)		
Recommended books and references (scientific journals, reports...)			Klute A. (1986). Methods of soil analysis, Part 1-physical and mineralogical methods		
Electronic References, Websites					

Course Description Form

25.Course Name:
Internal combustion engines
26.Course Code:
ME 303
27.Semester / Year:
Autumn semester
28.Description Preparation Date:
1/9/2025
29.Available Attendance Forms:

Attendance only					
30.Number of Credit Hours (Total) / Number of Units (Total)					
45 hours, 3 hours per week					
31.Course administrator's name (mention all, if more than one name)					
Name: Hayder Abdel-Hussein Shanan Email: hayder.shanaan@uobasrah.edu.iq					
32.Course Objectives					
Course Objectives			• Introducing students to engines, their development and design • Identify the engine parts and their working principles • Training students on diagnosing engine malfunctions and how to treat them		
33.Teaching and Learning Strategies					
Strategy		The student will acquire the skills required to handle fuel devices for gasoline and diesel engines Ability to diagnose and treat engine malfunctions			
34. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 hours	Combustion engines internal	Identify the engine parts	1- Practical / inside the engines laboratory 2- Watch video clips of engine parts	Weekly, monthly, daily, written and
2	3 hours		Identify the functions of engine parts		
3	3 hours		Identifying the devices and systems that work with the engine: 1- The fuel device		
4	3 hours				
5	3 hours				
6	3 hours		Oiling device		

7	3 hours		Cooling device	3-Performing maintenance one of the engines	end-of-semester exams.
8	3 hours		Ignition device		
9	3 hours		First month exam		
10	3 hours		Mixer (Cabritur)		
11	3 hours		Cleaning device		
12	3 hours		Identify faults that occur in the engine		
13	3 hours		Learn about the types of filters and how to diagnose and treat them		
14	3 hours		Opening and installing engine parts		
15	3 hours		Second month exam Review of engine parts Article review		

35.Course Evaluation

Homework: 15% Daily exam: 15% Written exam: 50% Scientific reports: 20%

36.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Internal combustion engines book - Prof. Dr. Shaker Hantoush Aday
Main references (sources)	Agricultural machines and machinery book Yassin Hashem Al-Tahan
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://coeng.uosamarra.edu.iq/wp-content/uploads

Course Description Form

37. Course Name:	
HORTICULTURAL EQUIPMENT AND CROP SERVICE	
38. Course Code:	
ME307	
39. Semester / Year:	
Autumn / 2024-2025	
40. Description Preparation Date:	
1/9/2025	
41. Available Attendance Forms:	
Presence only	
42. Number of Credit Hours (Total) / Number of Units (Total)	
75h (5h weekly)	
43. Course administrator's name (mention all, if more than one name)	
Name: T.D.Hussain Abdulkarim Safi Email: hussain.safi@uobasrah.edu.iq	
44. Course Objectives	
article aims to learn how to establish and plan orchards rding to sound scientific bases, to see the special drawers to work orchard fields and how to work on them, and to identify the various operating	
45. Teaching and Learning Strategies	
Strategy	1 Education strategy collaborative concept planning. 2. Brainstorming education strategy. 3. Education Strategy Notes Series.
46. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5 hours	Laptop, display screen, and spouse	Create orchids	attendance	daily test
2	5 hours	Laptop, display screen, and spouse	Soil reclamation	attendance	
3	5 hours	Laptop, display screen, and spouse	oil reclamation equipments	attendance	
4	5 hours	Laptop, display screen, and spouse	oil preparation equipments	attendance	daily test
5			ee digging tting equipments		Assignment 1
6	5 hours	Laptop, display screen, and spouse	Tree cutting equipments	attendance	
7	5 hours	Laptop, display screen, and spouse	Agricultural tractors	attendance	
8	5 hours	Laptop, display screen, and spouse	Seedling equipments	attendance	
9	5 hours	Laptop, display screen, and spouse	Hoeing equipments	attendance	Assignment 2
10	5 hours	Laptop, display screen, and spouse	Fertilization equipments	attendance	
11	5 hours	Laptop, display screen, and spouse	ying and fogging equipments	attendance	
12	5 hours	Laptop, display screen, and spouse	Irrigation equipments	attendance	
13	5 hours	Laptop, display screen, and spouse	per cutting and transporting equipments	attendance	Assignment 3
14	5 hours	Laptop, display screen, and spouse	Palm service equipments		
15	5 hours	Laptop, display screen, and spouse	Fruit picking and harvesting equipments		

47.

Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc.

48. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Nothing
Main references (sources)	1-Encyclopedia of agricultural machinery, equipment and machinery , prof. Dr. Abdul Razzaq Abdul Latif Al Jassim

	, prof. Dr.Abdul Hussein Ghanem Sakhi and Prof . Dr. Abdulaziz Abbas Aziz,2017 Iraq –Baghdad. 2- Techniques for serving date palam trees , prof. Dr. Abdul Razzaq Abdul Latif Al Jassim Prof. Dr.Muayyad Rajab Abboud and Dr. Shamil Mazhar Abboud ,2017 Iraq-Baghdad
Recommended books and references (scientific journals, reports...)	Professor Dr.Iyad Hani Al-Allafblog(creating fruit orchards). The Data Palm Journal.
Electronic References, Websites	Department of agricultural extension and training / Iraqi Ministry of agriculture / S post

Second Semester

Course Description Form

1. Course Name:	
Soil preparation equipment	
2. Course Code:	
ME 310	
3. Semester / Year:	
Spring semester	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Attendance only	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45 hours, 3 hours per week	
7. Course administrator's name (mention all, if more than one name)	
Name: Hayder Abdel-Hussein Shanan Email: hayder.shanaan@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	Introducing the student to the types of equipment used in soil preparation. Introducing the student to how soil preparation equipment works and how to maintain it
9. Teaching and Learning Strategies	
Strategy	Ability to use appropriate equipment and improve field efficiency

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 hours	Soil preparation equipment	Get to know all the equipment and machines	1Explanation of the scientific material 2-Discussion about the topic	Weekly, monthly, daily, written and end-of-semester exams.
2	3 hours		Adjustment and network method		
3	3 hours		Forces affecting plows		
4	3 hours		Disc plow		
5	3 hours		Rotary plow training		
6	3 hours		Digger plow		
7	3 hours		Plow below the soil surface		
8	3 hours		Disc combs		
9	3 hours		Toothed combs		
10	3 hours		Hammers and irons		
11	3 hours		Compound machines		
12	3 hours		Practical application on machinery maintenance		
13	3 hours		Calculating slippage in machines		
14	3 hours		Store machines		
15	3 hours		Review the article		
11. Course Evaluation					
Homework: 15% Daily exam: 15% Written exam: 50% Scientific reports: 20%					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Soil preparation equipment book - Aziz Ramo Banna		
Main references (sources)			Agricultural machines and machinery		

	book - Yassin Hashem Al-Tahan
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://www.damanshour.edu.eg/pdf/Foreginers/%D9%A9.pdf

Course Description Form

1. Course Name:
Design and analysis of agricultural experiments
2. Course Code:
5183
3. Semester / Year:
First / 2024-2025
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
At class
6. Number of Credit Hours (Total) / Number of Units (Total)
2 / 2
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Marwan N. Ramadhan Email: marwan.ramadhan@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• Introducing the types of agricultural experiments. • How to design, analyze and interpret single-factor agricultural experiments. • How to compare average transactions. • How to design, analyze and interpret two-factor agricultural experiments. • Learn about the concept of correlation and regression and how to calculate and interpret them.
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9. Teaching and Learning Strategies

Strategy	Knowing how to scientifically design experiments in the field, laboratory, greenhouse, etc. Familiarity with methods for analyzing results manually or through statistical programs according to the hypotheses set by the researcher. How to make decisions and conclusions based on the results of the analysis. How to prepare scientific reports for scientific research and experiments and the results they led to.
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10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	2	w 1	Research, scientific method and statistics. General review in statistics	Explanation and clarification Model view Lecture method	Participation and attendance in class and weekly testing
2	2	w 2	Experiment, design and analysis. Types of agricultural experiments.	=	=
3	2	w 3	The most important designs for simple experiments	=	=
4	2	w 4	Completely randomized design	=	=
5	2	w 5	Testing averages	=	=
6	2	w 6	Randomized complete block design Latin square design	=	=

7	2	w 7	Exam	=	=
8	2	w 8	Factorial experiments according to a completely randomized design	=	=
9	2	w 9	Factorial experiments according to a completely randomized block design	=	=
10	2	w 10	Split plot designs according to a completely randomized design	=	=
11	2	w 11	Split plot designs according to a completely randomized block design	=	=
12	2	w 12	Split plot designs	=	=
13	2	w 13	Split plot designs	=	=
14	2	w 14	Split block designs Correlation and simple regression	=	=
15	2	w 15	Exam	=	=

11. Course Evaluation

Distribution of the score out of 30 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc.

Score details

20 monthly exams

4 report

4 daily exam

2 Daily preparation

30 total score

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)

Main References (Sources)	Design and analysis of agricultural experiments. Khasha Mahmoud Al-Rawi and Abdul Aziz Muhammad Khalaf Allah.
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Fourth-year

First Semester

Course Description Form

1. Course Name:	
Plant protection equipment/practical part	
2. Course Code:	
PPEQ412	
3. Semester / Year:	
First semester 2024-2025	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Attendance laboratory and field education in groups	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45 hours	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Akram Abdel-Daem Ahmed Tohme Email: gmail.com@khalidyakram	
8. Course Objectives	
Course Objectives	• • Introducing students to mechanical and chemical pest control machines. • . • Training students on organizing and preparing mechanical control machines and calibrating spraying and fogging machines in the field and laboratory. • • Introducing students to the principle of operation of spraying and fogging machines, along with practical practice of spraying
9. Teaching and Learning Strategies	

Strategy		Qualifying students to practice pest control applications in a scientific and practical way and providing them with skills that achieve the goal of conducting pest control with high efficiency and with minimal environmental damage through field visits, correct practical application, and field practices.			
10. Course Structure					
Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation Method
The first	3	Mechanical control equipment	Plant protection equipment/practical part	Watch and apply in action	Quarterly exam +Quiz + reports
The second	3	Types of spraying machines (solution sprayers) and their uses	Plant protection equipment/practical part	Watch and apply in action	Quarterly exam +Quiz + reports
The third	3	Manual spray machines with intermittent and continuous pressure	Plant protection equipment/practical part	Watch and apply in action	Quarterly exam +Quiz + reports
The fourth	3	Knapsack sprayers with separate pump Knapsack sprayer with attached pump Backpack sprayer with plunger suction pump	Plant protection equipment/practical part	Watch and apply in action	Quarterly exam +Quiz + reports
The fifth	3	Hydraulic field sprayer	Plant protection equipment/practical part	Watch and apply in action	Quarterly exam +Quiz +
The sixth	3	Orchard tree sprayer and towed blaster	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz +
The seventh	3	Organizing and calibrating laboratory spraying machines	Plant protection equipment/practical part	practical application	Quarterly exam +Quiz + reports

The eighth	3	Organizing and calibrating field spraying machines	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The ninth	3	Types of fogging machines (powders)	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The tenth	3	Self-propelled and electronically programmed sprayers	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The eleventh	3	Manual sander	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The twelveth	3	Dorsal crest with fan Dorsal pallidum with bellows	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The Thirteenth	3	Aerial spraying Spraying by fixed wing aircraft Spraying by rotating wing aircraft	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The fourteenth	3	Micro spray machines	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports
The Fifteenth	3	Fuzzers, blowers and smokers sprayers	Plant protection equipment/practical part	Watch a video	Quarterly exam +Quiz + reports

11. Course Evaluation

Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc. **Homework: 15% Daily exam: 15% Written exam : 50% Scientific reports: 20%**

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)

Main References (Sources)	Control machines / practical / Prof. Dr. Abdel Hamid Hassan, Prof. Dr. Muhammad Nassour, engineer. Adnan Makhoul. Faculty of Agricultural Engineering, Tishreen University Pest control machines, Dr. Ibrahim Muhammad Omar. Menoufia University, Faculty of Agriculture, Department of Agricultural Engineering and
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Agricultural Tractors Electricity
2. Course Code:
TREL416
3. Semester / Year:
The First Semester 2024-2025
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
Presence only
6. Number of Credit Hours (Total) / Number of Units (Total)
45
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Qusay Sameer Sabah Email: qusay.sameer@uobasrah.edu.iq
8. Course Objectives

Course Objectives		• Introduce students and train them on electrical devices and components in agricultural machinery, how to use them, and maintain them • Train students on how electrical circuits work in agricultural tractors			
9. Teaching and Learning Strategies					
Strategy		1. Education strategy collaborative concept planning. 2. Brainstorming education strategy. 3. Education Strategy Notes Series.			
10. Course Structure					
Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1			Identifying parts related to inspection	Watch and apply in action	Weekly tests, monthly exams, and scientific reports
2			Understanding induction - magnetic fields - conductors - insulators - electrical		
3			Battery components - parallel and series connections		
4			Battery charging - types of charging - preparing the		
5			Opening the generator - inspecting parts - maintaining faulty		
6			Inspecting the current regulator - wiring - switching		
7			Opening the starter motor - identifying parts - inspecting the		
8			First-month exam		
9			Inspecting the wire connecting the starter motor and the battery and maintaining it		

10			Inspecting the ignition coil - inspecting the		
11			Inspecting the contact breaker (platina) - adjusting the spark		
12			Inspecting spark plugs - maintaining them -		
13			Inspecting the electronic distributor and electrical		
14			Inspecting lighting - replacing faulty bulbs		
15			Second-month exam		
11. Course Evaluation					
The distribution is as follows: Monthly exam grade: 10 grade Daily exam grade: 5 grade Report grade: 5 grade Final exam grade: 20 grade					
12. Learning and Teaching Sources					
Required Textbooks (Curricular Books, If Any)					
Main References (Sources)					
Recommended Books and References (Scientific Journals, Reports...)					
Electronic References, Websites					

Course Description Form

1. Course Name:
Food Manufacturing Equipment/ Practical Part
2. Course Code:
FPMA415
3. Semester / Year:
The First Semester/2024-2025
4. Description Preparation Date:
1/9/2025

5. Available Attendance Forms:					
Presence only					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45h (3h weekly)					
7. Course administrator's name (mention all, if more than one name)					
Name: Qusay Sameer Sabah			Email: qusay.sameer@uobasrah.edu.iq		
8. Course Objectives					
Course Objectives		• Practically preparing students for the management operation, and maintenance of food industry facilities. • Identifying some integrated process units in food factories. • Utilizing appropriate technologies to address technical issues in the food manufacturing field.			
9. Teaching and Learning Strategies					
See	1 Education strategy collaborative concept planning. 2. Brainstorming education strategy. 3. Education Strategy Notes Series.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 hours	Identifying methods of shaping food materials	Food manufacturing equipment/ Mechanical Part	Watch and apply in action	Weekly, monthly, daily, written and end-of-semester exams.
2	3 hours	Observing transport and handling processes			
3	3 hours	Understanding and determining the operation mechanism of fans and pumps.			
4	3 hours	Observing various mechanical processes.			
5	3 hours	Field identification of food material transportation methods.			
		Energy calculations and balancing.			

6	3 hours	Energy calculations and balancing			
7	3 hours	Identification of Heat Transfer Methods			
8	3 hours	Observing Transfer in Manufacturing			
9	3 hours	Observing Manufacturing Processes: Grinding, Crushing			
1	3 hours	Dispersion			
0		Drying of Food Materials			
	3 hours	Concentration of Food Materials			
1	3 hours	Separation and cleaning units in food factory			
1	3 hours	Heat Control			
1	3 hours	Thermal Processes in the Food Laboratory			
2	3 hours				
1	3 hours				
3					
1					
4					
1					
5					

11. Course Evaluation

The distribution is as follows: Monthly exam grade: 10 grade Daily exam grade: 5 grade Report grade: 5 grade Final exam grade: 20 grade

12. Learning and Teaching Resources

Required textbooks (curricular books, if a	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Second Semester

Course Description Form

13. Course Name:	
Post-harvest equipment	
14. Course Code:	
K 404	
15. Semester / Year:	
Spring semester	
16. Description Preparation Date:	
1/9/2025	
17. Available Attendance Forms:	
Attendance only	
18. Number of Credit Hours (Total) / Number of Units (Total)	
45 hours, 3 hours per week	
19. Course administrator's name (mention all, if more than one name)	
Name: Hayder Abdel-Hussein Shanan Email: hayder.shanaan@uobasrah.edu.iq	
20. Course Objectives	
Course Objectives	- Ability to choose equipment that suits the type of crop - Learn about the methods and types of packing and wrapping agricultural products
21. Teaching and Learning Strategies	
Strategy	1- Involving the student in discussion sessions 2- Developing the student's abilities to reach the stage of

		analysis and conclusion			
		1- Creating a competitive atmosphere among students in their answers to scientific topics when asked			
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 hours	Post-harvest equipment	Identify handling and transportation equipment	1- Lecture and slide show	Weekly, monthly, daily, written and end-of-semester exams.
2	3 hours		Steps to operate the mills	2- A visit to the mills	
3	3 hours		Learn how to fill and unload carts	3- A visit to Silo Basra	
4	3 hours		A visit to the mills	2- Visit the date factory	
5	3 hours		Watch documentaries about cleaning and grading equipment		
6	3 hours		Identify the changes that occur to the crop after drying		
7	3 hours		Solving mathematical problems in drying		
8	3 hours		Watching scientific films about drying		
9	3 hours		Purpose of storage		
10	3 hours		The visit to Silo Basra		
11	3 hours		Watch scientific films about packaging factories		
12	3 hours		Watch scientific films about packaging factories		
13	3 hours				
14	3 hours				
15	3 hours				

			See the types of packaging available in the local market		
			A visit to one of the private date factories in Basra		
			Review of the article		
23. Course Evaluation					
Homework: 15% Daily exam: 15% Written exam: 50% Scientific reports: 20%					
24. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Bala, B.K. 1997. Drying and storage of cereals and grains. Science publisher, Inc. Enfield (NH) USA.		
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites			https://www.truck1.net/agricultural-machinery/post-harvest-equipment/pom		

Course Description Form

1. Course Name:
Maintenance of Tractors / Practical Part
2. Course Code:
EQMA424

3. Semester / Year:	
First Semester /2024-2025	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence only	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45	
7. Course Administrator's Name (Mention All, If More Than One Name)	
Name: Qusay Sameer Sabah Email: qusay.sameer@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	1. Comprehensive Understanding of Tractor Systems and Their Functions: This includes various components such as the engine, cooling systems, lubrication, fuel, air filtration systems, and the electrical system. 2. Fault Diagnosis and Maintenance: Gaining skills to identify common faults in the engine and other components, and applying correct methods for their maintenance. 3. Practical Training: Providing hands-on applications that involve dismantling and reassembling the engine's core parts and maintaining elements such as the gearbox, clutch, and differential. 4. Enhancing Skills in Maintenance of Motion Systems: Mastering the repair and maintenance of various motion transmission systems to ensure their efficient use. 5. Improving Practical Proficiency Through Training and Assessment: Conducting practical lessons and periodic evaluations to develop students' skills in repairing and maintaining agricultural equipment effectively.
9. Teaching and Learning Strategies	

Strategy	1. Interactive and Applied Learning: Focus on practical applications such as dismantling key parts of the engine and maintaining components like cooling, lubrication, and fuel systems to develop students' hands-on skills. 2. Fault Diagnosis and Maintenance: Teach students how to identify faults in devices such as engines and gearboxes, with direct strategies for repairing them using effective tools and techniques. 3. Intensive Practical Learning: Provide field lessons to work with agricultural machinery and tractors, enabling students to apply theoretical concepts in practical settings. 4. Integrated Systems Training: Offer a comprehensive understanding of tractor systems such as the electrical system, clutch, and differential, while enhancing repair and maintenance skills. 5. Periodic Assessment and Performance Improvement: Organize weekly and monthly tests to ensure student progress, with an emphasis on practical projects that boost their proficiency.
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10. Course Structure

Week	Hours	Required learning outcomes	Unit or Subject Name	Learning Method	Evaluation Method
1	3	Comprehensive understanding of all tractor systems and their roles, with the ability to identify components and use them efficiently in agricultural operations.	Tractor components and their functions	Observation and practical application	Weekly tests, monthly exams, and scientific reports
2	3	Developing skills to diagnose common faults in the engine and other tractor systems, with the application of effective repair techniques.	Engine component faults, how to diagnose them, and maintenance methods		
3	3	Ability to dismantle and reassemble the key components of the engine and perform necessary maintenance to ensure optimal performance.	Practical applications for dismantling the main engine components of the tractor		
4	3	Understanding the functioning of the cooling system and its maintenance to ensure proper engine temperature management.	Cooling system		

5	3	Learning to maintain the lubrication system to reduce friction between engine parts and enhance efficiency.	Lubrication system		
6	3	Understanding the role of the fuel system and its maintenance to improve energy consumption efficiency.	Fuel system		
7	3	Ability to maintain the air filtration system to ensure clean air intake for the engine.	Engine air filtration system		
8	3		First-month exam		
9	3	Learning to diagnose and maintain the tractor's electrical system to ensure reliable operation.	Electrical system of the tractor		
10	3	Understanding the function and design of the gearbox and its maintenance to ensure effective power transmission.	Gearbox		
11	3	Ability to maintain the clutch to enhance movement control.	Clutch		
12	3	Ability to maintain the differential to improve movement control.	Differential		
13	3	Learning how to maintain motion transmission systems to ensure smooth and integrated operation.	Tractor transmission devices		
14	3	Applying acquired knowledge in practical workshops to repair and maintain agricultural machinery efficiently.	Practical lessons in maintaining and repairing agricultural machinery		
15	3		Second-month exam		
11. Course Evaluation					

Grade distribution out of 100 based on tasks assigned to the student, such as daily preparation, weekly tests, monthly exams, scientific reports, etc.	
12. Learning and Teaching Sources	
Required Textbooks (Curricular Books, If Any)	
Main References (Sources)	
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
معدات ما بعد الحصاد / الجزء النظري
2. Course Code:
PHEQ419
3. Semester / Year:
Second semester 2024-2025
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
In-person education
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course Administrator's Name (Mention All, If More Than One Name)
Name: Akram Abdel-Daem Ahmed Tohme Email: gmail.com@khalidyakram

8. Course Objectives					
Course Objectives			• Graduating agricultural engineers and researchers dedicated to agriculture in the field of equipment and subsequent equipment in an appropriate manner to facilitate agricultural production operations in quantity and quality.		
9. Teaching and Learning Strategies					
Strategy		1 -Involving the student in discussion sessions. 2- Developing the student’s abilities to reach the stage of analysis and conclusion. 3 -Creating a competitive atmosphere among students in their answers to scientific topics when asked.			
10. Course Structure					
Week	Hours	Required learning	Unit or Subject Name	Learning Method	Evaluation
The first	2	Post-harvest equipment/theoretical part	Equipment for handling and transporting agricultural	Lecture and presentation	Quarterly exam +Quiz + reports
The second	2	Post-harvest equipment/theoretical part	Loaders	Lecture and presentation	Quarterly exam +Quiz + reports
The third	2	Post-harvest equipment/theoretical part	Vehicles and their types	Lecture and presentation	Quarterly exam +Quiz + reports
The fourth	2	Post-harvest equipment/theoretical part	Field crop cleaning equipment	Lecture and presentation	Quarterly exam +Quiz + reports
The fifth	2	Post-harvest equipment/theoretical part	Field crop grading equipment	Lecture and presentation	Quarterly exam +Quiz +
The sixth	2	Post-harvest equipment/theoretical part	Drying: its importance and basics	Lecture and presentation	Quarterly exam +Quiz +

The seventh	2	Post-harvest equipment/theoretical part	Mathematical calculations related to drying	Lecture and presentation	Quarterly exam +Quiz + reports
The eighth	2	Post-harvest equipment/theoretical part	Drying equipment	Lecture and presentation	Quarterly exam +Quiz + reports
The ninth	2	Post-harvest equipment/theoretical part	Methods of storing agricultural crops	Lecture and presentation	Quarterly exam +Quiz + reports
The tenth	2	Post-harvest equipment/theoretical part	Silos	Lecture and presentation	Quarterly exam +Quiz + reports
The eleventh	2	Post-harvest equipment/theoretical part	Packaging and wrapping of agricultural products	Lecture and presentation	Quarterly exam +Quiz + reports
The twelfth	2	Post-harvest equipment/theoretical part	Packaging equipment	Lecture and presentation	Quarterly exam +Quiz + reports
The Thirteenth	2	Post-harvest equipment/theoretical part	Types of packaging used with each agricultural product	Lecture and presentation	Quarterly exam +Quiz + reports
The fourteenth	2	Post-harvest equipment/theoretical part	Receiving, cleaning and grading dates	Lecture and presentation	Quarterly exam +Quiz + reports
The Fifteenth	2	Post-harvest equipment/theoretical part	Packing and pressing dates	Lecture and presentation	Quarterly exam +Quiz + reports

11. Course Evaluation

Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral, monthly, or written exams, reports, etc. **Homework: 15% Daily exam: 15% Written exam : 50% Scientific reports: 20%**

12. Learning and Teaching Sources

Required Textbooks (Curricular Books, If Any)

Main References (Sources)	-Bala, B.K. 1997. Drying and storage of cereal grains. Science publisher, Inc. Enfield (NH), USA.
Recommended Books and References (Scientific Journals, Reports...)	
Electronic References, Websites	