Course Description Form

1. Course Name:
   Agricultural Machinery
2. Course Code:
   AGMA243
3. Semester / Year:
   First fall semester/second stage/2024-2025
4. Description Preparation Date:
   1/2/2025
5. Available Attendance Forms:
   Attendance + Online
6. Number of Credit Hours (Total) / Number of Units (Total)
   75 hours (2 theoretical + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)

Name: Ghazwan Ahmed Dahham
Name: Muhammad Nazim Abdullah
Email: ghazwanagr@uomosul.edu.iq

8. Course Objectives

. Identify the types and parts of agricultural equipment.
. Clarifying the basics and principles of engineering sciences and their applications in various agricultural fields.
. Discussing every type of agricultural equipment and machinery for the production of agricultural crops (in terms of structure and function), starting from plowing the soil and preparing the seedbed, passing through the stages of serving the growing crop, ending with harvesting operations and the subsequent processes through which these agricultural products are prepared, whether for consumption or storage.
. Conducting the necessary adjustments for agricultural machines in order to obtain the optimal use of those machines in order to reach the intended use of those machines.
. The ability to maintain, maintain and repair agricultural equipment.
. The ability to disassemble and install these machines.
. Ability to manage agricultural equipment in the field.
. The ability to connect machines to the agricultural puller and carry out organizing and calibrating operations for them in a way that suits the agricultural operation required to be performed with the agricultural machine.

9. Teaching and Learning Strategies

- Interactive lecture
-Brainstorming
- Dialogue and discussion
-Field Training
- Practical exercises
- Field project

-Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical	a1: The student shows the initial soil preparation equipment (rolling plow and excavator).	Primary soil preparation equipment (rolling plow and excavator).	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	c7: Calculating field productivity of soil preparation equipment	Mathematical relations for calculating theoretical productivity, actual productivity, and field efficiency of plows	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1
2	2 Theoretical	a2: The student shows the primary soil preparation equipment (dump disc plow, vertical disc plow, and rotary plow).	Primary soil preparation equipment (disc plow, vertical disc plow, and rotary plow).	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	b4: Clamping and connecting the roll plow, clamping and connecting the tipping disc plow	Methods of netting and connecting the agricultural tug to the plows	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1
3	2 Theoretical	c1: The student shows the secondary soil preparation equipment	Secondary soil preparation equipment	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	b5: Excavator plow clamp, vertical disc plow clamp and clamp	Methods of netting and connecting agricultural pullers to non-dump plows	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1
4	2 Theoretical	c2: The student shows the special soil preparation equipment	Special soil preparation equipment	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	c8: Calculate the pulling force and pulling capacity of tillage equipment	Mathematical relations for calculating the pulling force and pulling capacity of plows	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1

5	2 Theoretical	C3: The student explains the withdrawal requirements for soil preparation equipment.	Drag requirements for soil conditioning equipment.	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	b6: The marching groups to combat jungles between agricultural lines	Regulations for hoeing equipment	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1
6	2 Theoretical	a3: The student identifies irrigation equipment.	Irrigation equipment.	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	c9: Calculate the horsepower required for the irrigation pump	Use mathematical relationships to calculate pump discharge, calculate pump efficiency, and calculate pump horsepower	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1
7	2 Theoretical	c4: The student shows the seeding and agricultural equipment	Seeding and farming equipment	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 Practical	b10: Laboratory and field organization of grain seeds	Organizing and calculating the seed rate	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short practical test1
8	2 Theoretical	C5: Shows the main parts of the hoeing equipment between the lines of planted plants	Hoeing equipment between lines of planted plants	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
	3 Practical	c10: Mathematical relations for calculating the seed rate per hectare	Using mathematical relationships to calculate the seed rate per hectare	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
9	2 Theoretical	a4: The student shows the fertilization equipment	Fertilization equipment	Interactive lecture, brainstormin g, dialogue	short exams, assignment of duty, discussions

				and discussion, field training, practical exercises, and self-learning	
	3 Practical	b11: Calculating the amount of fertilizer needed per unit area	Organizing and calculating the fertilization rate	Interactive lecture, brainstorming , dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
10	2 Theoretical	C6: Explains chemical control equipment (sprayers).	Chemical control equipment (sprays).	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
	3 Practical	b12: Calculating the amount of pesticide needed per unit area	Organizing and calculating the pesticide agent	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
11	2 Theoretical	b1: Scientific visit	Scientific visit	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
	3 Practical	b13: Scientific visit	Scientific visit	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
12	2 Theoretical	a5: Knows chemical control equipment (disinfectants)	Chemical control equipment (disinfectants).	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions

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	3 Practical	b14: Daily, weekly and end-of-season maintenance of soil preparation equipment	Maintaining and maintaining soil preparation equipment	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
13	2 Theoretical	b2: The student knows the methods of plowing using inverter and non-inverter plows	Methods of plowing with plows	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
	3 Practical	b15: Daily, weekly and end-of-season maintenance of seed and agricultural equipment	Maintaining and maintaining seed and agricultural equipment	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
14	2 Theoretical	a6: The student knows harvesting equipment	Harvesting equipment	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
	3 Practical	b16: Daily, weekly and end-of-season maintenance of harvesting equipment	Maintaining and maintaining harvesting equipment	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
15	2 Theoretical	b3: The student explains the most important symptoms resulting during harvesting and the necessary solutions to them through the special calibrations of the harvester units.	The most important symptoms resulting during harvesting and the necessary solutions for them through the special calibrations of harvester units.	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	short exams, assignment of duty, discussions
	3 Practical	b17: Safety procedures in the use of agricultural equipment and machinery	Instructions and safety procedures for using agricultural equipment and machinery	Interactive lecture, brainstorming, dialogue and discussion, field training, practical	short exams, assignment of duty, discussions

				exercises, and self-learning	

11.Course Evaluation

	Evaluation methods	Evaluation date (week)	Grade	Relative weight %
1	Report 1	Week Four	2.5	2.5
2	Report 2	Week Five 2.5	2.5	2.5
3	Short test (1) Quiz	Week Six	2	2
4	Short Test (2) Quiz	Week Fourteen	2	2
5	Short Test (3) Quiz	Week Fifteen	1	1
6	Semester test (1)	sixth week	7.5	7.5
7	Semester test (2	the eleventh week	7.5	7.5
8	final theoretical exam final semester exams 40 40	final semester exams	40	40
9	Practical field project	week fifteen	5	5
10	Field evaluation	weeks three and five	2	2
11	short practical tests (1) Quiz	the first week	1	1
12	short practical tests (2) Quiz	Week Four	0.5	0.5
13	Short practical test (3) Quiz	Week Fourteen	1	1
14	Direct drawings and homework	weeks 6, 8, 9, 10, 11, 12, and 13	5.5	5.5
15	Final practical exams	Final semester exams	20	20
Total	100		100%	100%

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Soil preparation equipment, written by Dr. Aziz Ramo Al-Banna. 2- Agricultural machines and machinery, written by Dr. Yassin Hashem Al-Tahan and Dr. Muhammad Jassim Al-Naama. 3- Field crop mechanization equipment, written by Mr. Lotfi Hussein and Dr. Abdul Salam Mahmoud.
Main references (sources)	Agricultural mechanization (pullers and agricultural machines), written by Ahmed Al-Rai Imam Suleiman and Sami Muhammad Younis.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

مدرس المادة النظري: م. غزوان احمد دحام

مدرس المادة العملي: م.م. محمد ناظم عبد الله

رئيس اللجنة العلمية: أ.د. عادل احمد عبد الله

رئيس قسم المكانن والآلات الزراعية: أ.م. نوفل عيسى مجيد

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