Course Description Form

1. Course Name:
Sowing and fertilizing equipment
2. Course Code:
SOFE378
3. Semester / Year:
First semester (autumn)/2024-2025
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Combined (Attendance + distance education)
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hours (30 theoretical hours + 45 practical hours) / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Hussain Abed Hammood & Laith Mahmoud Yahya Email: hu_hamood@uomosul.edu.iq
8. Course Objectives

Course Objectives	– Graduating agricultural engineers and researchers to serve the agricultural sector. - Scientific cooperation with agricultural directorates and other parties with the aim of improving agricultural production in quantity and quality. - Investing in modern technology in the field of sowing and fertilizing equipment in order to develop education, training and research programmed. - Qualifying students to work according to the modern production system that relies on computers and information technology to operate. - Preparing an advanced technical staff in the field of sowing and fertilizing equipment design to meet the needs of society.

9. Teaching and Learning Strategies

theoretical: -Interactive lecture. -Brainstorming. -Dialogue and discussion. -Assigning tasks and reports	practical: Assigning the student to inspect the symptoms in sowing and fertilization equipment and the possibility of treating them within a specific period to reveal the student's skill ability. Assigning the student to calibrate and adjust sowing and fertilization equipment and ensure that its field performance requirements are met.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical	a1: Explain the basics and principles of seed characteristics and seed technology	Physical and technical characteristics of seeds	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b1: Acquires the ability to explain the basics and principles of seed characteristics and seed technology	Basics and principles of seed traits and seed technology	Attendance, distance education, or video lectures	Discussions, quizzes and reports

2	2 Theoretical	a2: Understands new sowing methods	New sowing methods	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b2: Acquire skill in using new sowing methods	sowing methods	Attendance, distance education, or video lectures	Discussions, quizzes and reports
3	2 Theoretical	a3: Learn about the classification of new sowing equipment and methods	Principles adopted in classifying sowing equipment	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b3: Acquires skill in classifying new sowing equipment and methods.	Classification of new sowing equipment and methods	Attendance, distance education, or video lectures	Discussions, quizzes and reports
4	2 Theoretical	a4: understands the techniques of seed feeding mechanisms.	Seed feeding techniques	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b4: Acquires the skill in classifying seed feeding mechanisms	Classification of seed feeding mechanisms	Attendance, distance education, or video lectures	Discussions, quizzes and reports
5	2 Theoretical	a5: understands the use of sowing and planting equipment and methods	Techniques of feeding mechanisms for cultivation and sorting –farrows and tubes transporting seeds	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b5: Acquires skill in using feeding mechanisms for cultivation and sorting - farrows and tubes transporting seeds	Feeding mechanisms for cultivation and sorting – farrows and tubes transporting seeds	Attendance, distance education, or video lectures	Discussions, quizzes and reports
6	2 Theoretical	a6: understands sowing classification and modern methods of agriculture	Types of seedlings based on prose and underlining – Types of plantings on lines	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b6: Acquires skill in sowing classification and modern methods of agriculture	sowing classification and modern methods of agriculture	Attendance, distance education, or video lectures	Discussions, quizzes and reports
7	2 Theoretical	a7: understands the parts and components of Sowing equipment	Sowing equipment	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b7: Acquires the skill to describe the parts and components of Sowing equipment	Parts and components of Sowing equipment	Attendance, distance education, or video lectures	Discussions, quizzes and reports
8	2 Theoretical	a8: understands designing, manufacturing and managing seedlings in a way that develops the agricultural sector	Seedling techniques + Monthly exam 1	Questions that include leading topics	Class test
	3 Practical	b8: Acquires the skill in classifying, manufacturing and managing seedling equipment	Classification, manufacturing and management of seedling equipment + a monthly practical exam	Questions that include leading topics	practical test

9	2 Theoretical	a9: Identify the contents of sowing and fertilization equipment manufacturing workshops and specialized exhibitions	A field visit to sowing and fertilization equipment manufacturing workshops and specialized exhibitions	A lecture by technicians in the repair shop	Questions and reports about the visit
	3 Practical	b9: The student is shown the contents of sowing and fertilization equipment manufacturing workshops and specialized exhibitions	Safety requirements in the circulation of contents of sowing and fertilization equipment manufacturing workshops and specialized exhibitions	A lecture by technicians in the repair shop	Questions and reports about the visit
10	2 Theoretical	a10: understands the parts and components of potato planters and rice seedlings	Parts and components of potato planters and rice seedling techniques	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b10: Acquires the skill in describing the parts and components of potato planters and rice seedlings	Parts and components of potato planters and rice seedlings	Attendance, distance education, or video lectures	Discussions, quizzes and reports
11	2 Theoretical	a11: Explains the basics and principles of the characteristics of organic fertilizer	Physical, chemical and technical characteristics of organic fertilizer	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b11: Acquires the ability to explain the characteristics of organic fertilizer	Organic fertilizer	Attendance, distance education, or video lectures	Discussions, quizzes and reports
12	2 Theoretical	a12: understands the types of fertilization equipment for organic fertilizer	Types of fertilization equipment for organic fertilizer	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b12: Acquires the skill in classifying new organic fertilization equipment and methods	Organic fertilization equipment and methods	Attendance, distance education, or video lectures	Discussions, quizzes and reports
13	2 Theoretical	a13: Clarifies the basics and principles of chemical fertilizer characteristics	Physical and technical characteristics of chemical fertilizer	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b13: Acquires the ability to explain the characteristics of chemical fertilizer	Chemical fertilizer	Attendance, distance education, or video lectures	Discussions, quizzes and reports
14	2 Theoretical	a14: understands the design and classification of new chemical fertilization equipment and methods	The engineering principles adopted in classifying fertilization equipment for chemical fertilizers	Attendance, distance education, or video lectures	Discussions, quizzes and reports
	3 Practical	b14: Acquires the skill in classifying new chemical fertilization equipment and methods	Organic fertilization equipment and methods	Attendance, distance education, or video lectures	Discussions, quizzes and reports
15	2 Theoretical	a15: understands the design of chemical fertilizer spreaders and soil application equipment	The technological process in spreading chemical fertilizers and equipment for applying fertilizer into the soil + monthly exam 2	Questions that include leading topics	Class test
	3 Practical	b15: Acquire skill in designing chemical fertilizer spreaders and equipment for applying	Chemical fertilizer spreaders	Questions that include leading topics	practical test

		fertilizer to the soil			

11. Course Evaluation

Seq.	Evaluating style	date	marks	Relative weight
1	Final report: theoretical + practical	Theoretical: Week 13 Practical: week 13	7 theoretical + 6 practical	%13
2	Monthly test 1	Week:8	4 theoretical + 2 practical	%6
3	Monthly test 2	Week:15	10 theoretical + 5 practical	%15
4	Quizzes	Week:12	4 theoretical + 2 practical	%6
5	Final practical test	The week of the theoretical exam	20	%20
6	Final theoretical test	The week of the Practical exam	40	%40
	the total		100	%100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Seeding and planting equipment. Dr. Nateq Sabri.
Main references (sources)	Seeding and planting equipment. Dr. Nateq Sabri.
Recommended books and references (scientific journals, reports...)	Agricultural Engineering Manual. Dr. Abdul Muti Al-Khalaf
Electronic References, Websites	https://www.youtube.com • Agricultural Engineering website

Lecturer:
Layth Mahmood Yahya

Lecturer:
Husain Abed Hamood

Head of the Scientific Committee:
Professor Dr. Adil Ahmed Abdullah

Head of the Agricultural Machinery and Equipment Department:
Assistant Professor Nofal Issa Mohamed