Course Description Form of Agricultural equipment and machinery

1. Course Name:	
Agricultural equipment and machinery	
2. Course Code:	
AGEM112	
3. Semester / Year:	
Second semester/ 2024-2025	
4. Description Preparation Date:	
15/1/2025	
5. Available Attendance Forms:	
Attending	
6. Number of Credit Hours (Total) / Number of Units (Total)	
150 hours / 6 units	
7. Course Administrator's Name (Mention All, If More Than One Name)	
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8. Course Objectives	
Agricultural machinery studies the most important machines used in agricultural fields and the extent of their usefulness, It includes knowledge of the basic concepts of agricultural machinery like Knowing the features and specifications of agricultural machinery, the theoretical basis for	Course Objectives: Graduating students who are able to:
9. Teaching and Learning Strategies	

1- Explanation and clarification 2- Lecture method 3- Student groups 4- Practical lessons in agricultural fields 5- Scientific trips to learn about the most important agricultural machines used in agricultural fields	Strategy

10. Course Structure

Evaluation Method	Learning Method	Unit or Subject Name	Required learning	Hours	Week
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** Brainstorming	Important definitions and basic concepts in the sciences that	General definitions and basic concepts in agricultural	**5**	**1**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** Brainstorming	Sources of movement, tools and methods for transporting them	Methods of movements transportation	**5**	**2**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	Components of the agricultural tractor and its	Agricultural tug (definition - general description	**5**	**3**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	Components of agricultural tractors, the	The main parts of an agricultural tractor	**5**	**4**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	The basis of the engine's operation, its	Engine, general description - fixed and moving parts	**5**	**5**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	Parts of the system, methods of operation and types	Fuel system (diesel - gasoline)	**5**	**6**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	Parts of the system, methods of operation and types	Oil system (types - parts) Benefits of oil	**5**	**7**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	Parts of the system, methods of operation and types	Cooling system (water cooling - air cooling)	**5**	**8**
Daily, monthly and final exams and daily reports	**Lecture** **Dialogue & discussion** **Brainstorming**	The parts of the devices, the function of each part, and the mathematical relationships in	Transmission devices (clutch - gearbox - differential - final transmission)	**5**	**9**

		converting speeds between these devices			
Daily, monthly and final exams and daily reports	**Lecture Dialogue & discussion Brainstorming**	Introduction to the hydraulic system, power transmission devices to agricultural machinery, and methods of connecting them	Hydraulic system in agricultural machines, their types in terms of the method of connection with the tug	**5**	**10**
Daily, monthly and final exams and daily reports	**Lecture Dialogue & discussion Brainstorming**	Definition of equipment, its types, parts, methods of maintenance, and the most important mathematical relationships to calculate its productivity	Primary and secondary soil preparation equipment	**5**	**11**
Daily, monthly and final exams and daily reports	**Lecture Dialogue & discussion Brainstorming**	Definition of equipment, its types, parts, methods of maintenance, and the most important mathematical relationships to calculate its productivity	Fertilization equipment	**5**	**12**
Daily, monthly and final exams and daily reports	**Lecture Dialogue & discussion Brainstorming**	Definition of equipment, its types, parts, methods of maintenance, and the most important mathematical relationships to calculate its productivity	Irrigation equipment and methods	5	**13**

Daily, monthly and final exams and daily reports	**Lecture Dialogue & discussion Brainstorming**	Definition of equipment, its types, parts, methods of maintenance, and the most important mathematical relationships to calculate its productivity	Plant protection equipment	**5**	**14**
Daily, monthly and final exams and daily reports	**Lecture Dialogue & discussion Brainstorming**	Definition of equipment, its types, parts, methods of maintenance, and the most important mathematical relationships to calculate its productivity	Reaping and harvesting equipment	**5**	**15**

11. Course Evaluation
Examination Monthly & daily exams with discussion questions inside the lecture . The degree of participation in the questions related to the subject.

12. Learning and Teaching Sources	
Book of Engines & agricultural machinery	Required Textbooks (Curricular Books, If Any)
Agricultural machinery books Engines books	Main References (Sources)
International network for information on the subject	Electronic References, Websites