Course Description Form

1. Course Name:

Design of Agricultural Machinery

2. Course Code:

DAMA383

3. Semester / Year:

second course 2023-2024

4. Description Preparation Date:

1/2/2024

5. Available Attendance Forms:

presence

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

75 hours /3.5 units

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

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8. Course Objectives

Theoretical: -	Practical:
- Enabling the student to know the style of design philosophy - Introducing the student to the importance and role of designing machine parts in practical life - Delve deeper into the concepts of optimal design through a study - Special scientific concepts for designing equipment and machines for machines - Agricultural to achieve optimal quality and performance of machine parts agricultural	- Enabling the student to solve problems using mathematical concepts related engineering problems regarding the load on the machine or piece through stresses, strains, shocks, torsion, and other influencing factors.

9. Teaching and Learning Strategies

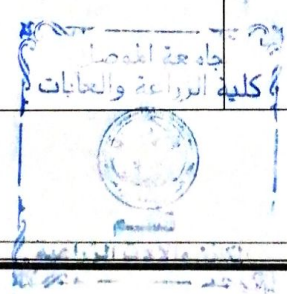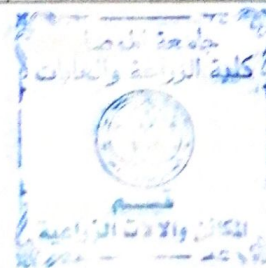| Theoretical:	Practical:
- Interactive lecture -Brainstorming -Dialogue and discussion - Assigning tasks	- Assigning tasks - Dialogue and discussion - Interactive lecture

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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical	a1: getting to Know the design concept and the things that should To be taken into consideration consideration when designing	Theoretical: An introduction to science the design	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	: a11 solving problems	Practical: Solving stress issues and emotion	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
2	2 Theoretical	a2: getting to know Stress term direct stress and emotion	Theoretical: The concept of forces and stresses	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	a12 : solving problems	Practical: Solving stress issues And emotion	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
3	2 Theoretical	a3: understanding the law Hook and elastic material How to calculate a coefficient Safety and longitudinal emotion And accidental And types of cutting	Theoretical: Hooke's law , ratio Bousbon , single shear Safety coefficient Single, double cut	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion

	3 Practical	solving problems	Practical: Solving stress issues and emotion	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
4	2Theoretical	a4: Identify the tests that are conducted On materials and minerals used in design	Theoretical: technical examinations must be carried out in the design Machinery parts	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	a14: examinations that run on materials and metals before use	Practical: conducting examinations Laboratory (shock and hardness)	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
5	2Theoretical	c1: conduct an experiment stretching on a specific metal and performing a shock test and the hardness	Theoretical: Tensile experiment, Compound stresses in designs	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	a15: Conduct an experiment	Practical: Conducting shock, shock and hardness experiments practically	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
6	2Theoretical	a5: knowing how Draw shear forces and moments Bending for concentrated loads	Theoretical: Application of shear force and bending moment diagrams for concentrated loads	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion

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	3 Practical	b3: solving problems	Practical: solving Power problems Shear and bending Moments for Concentrated loads	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
7	2 Theoretical	a6: knowing how Draw shear Forces and moments Bending for distributed loads	Theoretical: applying schemes Shear forces and bending moments for distributed loads	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	b4: solving problems	Practical: solving Load problems spreader	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
8	2 Theoretical	c2: knowing how Draw shear Forces and the bending moment when exposed The machine or part for me	Theoretical: applying schemes Shear forces and bending moments Using li or torque	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	b5: solving problems	Practical: Solving power problems Shear and Bending moments	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion

9	2Theoretical	c3: knowing how Draw shear forces and moments Bending for inclined loads	Theoretical: Application of shear force and bending moment diagrams For inclined loads	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3Practical	a16: solve examples	Practical: solving Shear force problems Bending moments for inclined loads	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
10	2Theoretical	a7: knowledge of elements Simple bending theory Explain the concept of curvature	Theoretical: bending theory Simple and its applications	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	a17: finding determination The second is for space for each Other shapes	Practical: How to find the second moment For the area of some shapes T and I	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
11	2Theoretical	a8: acquisition Knowing how to find the second moment for space using the axial method Parallel or method Regular and specific neutral line	Theoretical: The second moment of space and the neutral axis	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3Practical	b6: solve examples	Practical: Solve finding problems The second moment of area and line neutral	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion

12	2Theoretical	a9: knowledge Shapes of thresholds Most used Common in designs	Theoretical: geometric thresholds Most used in designs	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	a18: more clarification Thresholds used in Designs T and I	Practical: solving theoretical problems Simple bending	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
13	2Theoretical	a10: getting to know Elements of torsion theory The concept of theory in preparation Designs	Theoretical: torsion theory Simple and its applications	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3Practical	a19: solve Examples rotating parts	Practical: solving theoretical problems Simple contortions	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
14	2Theoretical	b1: how to find Moments and twist angles for solid and hollow columns	Theoretical: rotating columns Solid and hollow Used in design	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 Practical	b7: solve examples	Practical: solving theoretical problems minor sprains	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
15	2Theoretical	b2: getting to know twist moment diagrams on rotating axes	Theoretical: applying schemes Twist moments on the axes rotary	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion

3 Practical	a20: solving problems	Practical: solving theoretical problems Minor sprains	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion

11. Course Evaluation

15% practical
25% theoretical
Total 40%
Final exam 60%
Final grade 100%

12. Learning and Teaching Resources

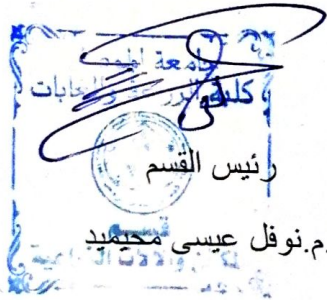|	
Required textbooks (curricular books, if any)	1. The book Mechanics of Materials, Part One, translated by Professor Dr. Sabah Muhammad Jameel Ali
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

مدرس المادة العملي:

م. شامل محمد صالح حسن

رئيس القسم

أ.م.نوفل عيسى محيميد

مدرس المادة النظري:

م. سعد توفيق محمد

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