

## Course Description Form

1. Course Name:	
Design of Agricultural Machinery	
2. Course Code:	
DAMA382	
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)	
Letcher: Shamil Mohammed Saleh Hassan Email: <a href="mailto:eng.sh.hassn@uomosul.edu.iq">eng.sh.hassn@uomosul.edu.iq</a> Letcher: Saad Tawfic Mohammed Email : <a href="mailto:Saad.t.m@uomosul.edu.iq">Saad.t.m@uomosul.edu.iq</a>	
8. Course Objectives	
<b>Theoretical: -</b> - 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	<b>Practical:</b> – <b>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.</b>
9. Teaching and Learning Strategies	
<b>Theoretical:</b> - Interactive lecture -Brainstorming -Dialogue and discussion - Assigning tasks	<b>Practical:</b> - Assigning tasks - Dialogue and discussion - Interactive lecture

## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3 Practical	a3: getting to know the design concept and the things that should be taken into consideration when designing  Practical: solving problems	Theoretical: introduction to science the design  Practical: Solving stress issues and emotion	presence	Quiz  discussion
2	2 theoretical 3 Practical	a12: getting know Stress term direct stress & emotion  Practical: solving problem	Theoretical: The concept of forces and stresses  Practical: Solving stress issues And emotion	presence	Quiz discussion
3	2Theoretical 3 Practical	a37: understanding the law Hook and elastic material How to calculate a coefficient Safety and longitudinal emotion And accidental And types cutting	Theoretical: Hooke's law , ratio Bousbon ,single shear Safety coefficient Single, double cut  Practical: Solving stress issues and emotion	presence	Quiz discussion

		Practical: solving problem			
4	3Theoretical 2 <b>Practical</b>	a3: Identify the tests that are conducted on materials and minerals used in design  Practical: examinations that run on materials and metals before use	Theoretical: technical examinations must be carried out in design Machinery parts  Practical: conducting examinations Laboratory (shock and hardness)	presence	Quiz discussion
5	3Theoretical 2 <b>Practical</b>	c1: Conduct an experiment Stretching On a specific Metal and performing shock test and the hardness  Practical: Conduct experiment	Theoretical: Tensile experiment, Compound stresses in designs  Practical: Conducting shock, shock and hardness experiments practically	presence	Quiz discussion
6	3Theoretical 2 <b>Practical</b>	a12: know how Draw shear forces and moments Bending concentrated loads  Practical: solving problems	Theoretical: Application shear force and bending moment diagrams for concentrated loads  Practical: Solving Power problems Shear and bending moments For concentrated loads	presence	Quiz discussion

7	3Theoretical 2 Practical	a12: know how Draw shear Forces and moments Bending distributed loads  Practical: Solving problems	Theoretical: applying schemes Shear forces and bending moments for distributed loads  Practical: Solving load problems Spreader	presence	Quiz discussion
8	3Theoretical 2 Practical	c23: knowing ho Draw shear Forces and the bending moment when exposed The machine part for me  Practical: solving problems	Theoretical: applying schemes Shear forces and bending moments Using li or torqu  Practical: Solving power problems Shear and Bending moments	presence	Quiz discussion
9	3Theoretical 2 Practical	c23: know how Draw shear forces and moments Bending inclined loads  Practical: Solve examples	Theoretical: Application shear force and bending moment diagrams For inclined loads  Practical: Solving shear Force problems Bending moments inclined loads	presence	Quiz discussion
10	3Theoretical 2 Practical	a37: knowledge elements Simple bending theory Explain concept	Theoretical: bending theory Simple and its applicatio Practical:	presence	Quiz discussion

		<p>curvature</p> <p>Practical: finding determination The second is space for each Other shapes</p>	<p>How to find second moment For the area some shapes T and I</p>		
11	3Theoretical 2 <b>Practical</b>	<p>a2: acquisition Knowing how to find second moment For space using the axial method Parallel method Regular and specific neutral line</p> <p>Practical: Solve examples</p>	<p>Theoretical: The second moment of space and the neutral axis</p> <p>Practical: Solve finding problems The second moment of area and line neutral</p>	presence	Quiz discussion
12	3Theoretical 2 <b>Practical</b>	<p>a37: knowledge Shapes thresholds Most used Common designs</p> <p>Practical: more clarification Thresholds Used in designs T and I</p>	<p>Theoretical: geometric thresholds Most used designs</p> <p>Practical: solving theoretical problems Simple bending</p>	presence	Quiz discussion
13	3Theoretical 2 <b>Practical</b>	<p>a12: getting know Elements torsion theory The concept theory preparation Designs</p> <p>Practical: solve examples</p>	<p>Theoretical: torsion theory Simple and applications</p> <p>Practical: solving theoretical problems Simple contortions</p>	presence	Quiz discussion

		Rotating parts			
14	3 Theoretical 2 Practical	a12: how to find Moments and twist angles for solid and hollow columns  Practical: Solve examples	Theoretical: rotating column Solid and hollow used in designs  Practical: solving theoretical problems minor sprains	presence	Quiz discussion
15	3 Theoretical 2 Practical	c23: getting to Know twist Moment diagrams On rotating axes  Practical: solving problems	Theoretical: applying schemes Twist moments on axes rotary  Practical: solving theoretical problems Minor sprain	presence	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 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

مدرس المادة النظري  
م. سعد توفيق محمد

رئيس قسم المكين والآلات الزراعية  
أ.م. نوافل عيسى مجيد

رئيس اللجنة العلمية  
أ.د. أركان محمد أمين صديق

