Course Description Form

1.	**Course Name:**
	Design of Agricultural Machinery
2.	**Course Code:**
	DAMA383
3.	**Semester / Year:**
	second course 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 /3.5 units
7.	Course administrator's name (mention all, if more than one name)
	Letcher: Dr. Mohammed Hussin Ahmed Al-Mola Email: dr.mohammedalmola@uomosul.edu.iq Letcher: Shamil Mohammed Saleh Hassan Email: eng.sh.hassn@uomosul.edu.iq
8.	Course Objectives
	- 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 - Enabling the student to solve problems using mathematical concepts related to engineering problems regarding the load on the machine or piece through stresses, strains, shocks, torsion, and other influencing factors.
9.	Teaching and Learning Strategies
	1. Students are presented with a problem or issue related to the subject matter for them to analyze and solve on their own. 2. Discussions, presentations, and simulations are used to promote active student engagement. 3. Students are divided into groups to solve problems. 4. Digital tools such as recorded lectures, online platforms, and virtual reality are used to support learning. 5. Quizzes, assignments, and discussions are provided to continuously assess students' comprehension of the material.

10. Course Structure

Week	Hours/ lecture type	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 when designing	Theoretical: An introduction to science the design	Interactive lecture, brainstorming, dialogue and discussion, self-earning	Quiz
	3/ Practical	: a11 solving problems	Practical: Solving stress issues and emotion	Interactive lecture, brainstorming, dialogue and discussion, self-earning	Quiz
2	2/ Theoretical	a2: getting to know Stress term direct stress and emotion	The concept of forces and stresses	Interactive lecture, brainstorming, dialogue and discussion, self-earning	Quiz
	3 / Practical	a12 : solving problems	Solving stress issues And emotion	Interactive lecture, brainstorming, dialogue and discussion, self-earning	Quiz
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	Hooke's law ratio Bousbon , single shear Safety coefficient Single, double cut	Interactive lecture, brainstorming, dialogue and discussion, self-earning	Quiz
	3/ Practical	a13: solving problems	Solving stress issues and emotion	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
4	2 / Theoretical	a4: Identify the tests that are conducted On materials and minerals used in design	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	Conducting examinations Laboratory (shock and hardness)	Interactive lecture, brainstorming, dialogue and discussion, self-earning	Quiz discussion

5	2/ Theoretical	c1: conduct an experiment stretching on a specific metal and performing a shock test and the hardness	Tensile experiment, Compound stresses in designs	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 / Practical	a15: Conduct an experiment	Conducting shock, shock and hardness experiments practically	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
6	2 / Theoretical	a5: knowing how Draw shear forces and moments Bending for concentrated loads	Application of shear force and bending moment diagrams for concentrated loads	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 / Practical	b3: solving problems	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	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	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	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	Solving power problems Shear and Bending moments	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
9	2 / Theoretical	c3: knowing how Draw shear forces and moments Bending for inclined loads	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	2 / Theoretical	a7: knowledge of laments Simple bending theory Explain the concept of curvature	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	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	2 / Theoretical	a8: acquisition Knowing how to find the second moment for space using the axial method Parallel or Regular and specific neutral line	The second moment of space and the neutral axis	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 / Practical	b6: solve examples	Solve finding problems The second moment of area and line neutral	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
12	2 / Theoretical	a9: knowledge Shapes of thresholds Most used Common in designs	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	solving theoretical problems Simple bending	Interactive lecture, brainstorming	Quiz discussion
13	2 / Theoretical	a10: getting to know Elements of torsion theory The concept of theory in preparation Designs	torsion theory Simple and its applications	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Quiz discussion
	3 / Practical	a19: solve Examples rotating parts	solving theoretical problems Simple contortions	Interactive lecture, brainstorming, dialogue	Quiz discussion
14	2 / Theoretical	b1: how to find Moments and twist angles for solid and hollow columns	rotating columns Solid and hollow Used in design	dialogue and discussion, self-learning	Quiz discussion
	3 / Practical	b7: solve examples	solving theoretical problems minor sprains	Discussion , self-learning	Quiz discussion

15	2 / Theoretical	b2: getting to know twist moment diagrams on rotating axes	applying schemes Twist moments on the axis's rotary	Discussion , self-learning	Quiz discussion
	3 / Practical	a20: solving problems	solving theoretical problems Minor sprains	discussion, self-learning	Quiz discussion

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

No.	Evaluation method	Marks	% Grads	Evaluation week
1	Lab. Exam	15	%15	Weeks 3, 5, and 7
2	Quizzes	5	%5	All 1-10 weeks
3	Term Exam	20	%20	Week 10
4	Final Exam(experimental)	20	%20	Week 13
5	Final Exam (Theory)	40	%40	Week 14
	sum	**100**	%100	

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The book Mechanics of Materials, Part One, translated by Professor Dr. Sabah Muhammad Jameel Ali
Main references (sources)	Journal of Mesopotamian Agriculture / College of Agriculture and Forestry / University of Mosul / Iraq
Recommended books and references	
Electronic References, Websites	https://www.fvtc.edu/program/agriculture-horticulture-natural-resources/agriculture/10-070-1/agricultural-equipment-technology

مدرس المادة العملي
م. شامل محمد صالح حسن

مدرس المادة النظري
م. د. محمد حسين احمد المولى

رئيس اللجنة العلمية
أ. د. عادل احمد عبد الله

جامعة الموصل
كلية الزراعة والغابات

رئيس قسم المكائن وآلات الزراعية
أ. م. نوفل عيسى محيميد