MECHANISM TECHNIQUE

1	Course Title:	MECHANISM TECHNIQUE
2	Course Code:	BSM3813-S
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	5
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	1.00
10	Laboratory (hour/week):	0
11	Prerequisites:	none
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. FERHAT KURTULMUŞ
15	Course Lecturers:	Yok
16	Contact information of the Course Coordinator:	e-posta : ferhatk@uludag.edu.tr Telefon: 0 224 2941600 Adres: Bursa Uludağ Üniversitesi, Ziraat Fakültesi, Biyosistem Mühendisliği Bölümü, Görükle Kampüsü, 16059, Nilüfer/BURSA
17	Website:	
18	Objective of the Course:	To introduce the arm-pendulum, crank-connecting rod, gear, heart and spring mechanisms used in agricultural machinery, to teach the methods of forming kinematic chains and the analysis methods of forced mobility conditions. To be able to analyze the position, velocity and acceleration of planar mechanisms both on paper and with the Python programming language.
19	Contribution of the Course to Professional Development:	Introduces planar mechanisms frequently used in the production of agricultural machinery. Gives the ability to solve vector loop closure equations manually and with a computer.
20	Learning Outcomes:	
	1	Learn basic concepts
	2	to be able to make kinematic analysis of mechanisms
	3	to be able to make position analysis in mechanisms
	4	To be able to analyze velocity and acceleration in mechanisms
	5	To learn common types of planar mechanisms
	6	To learn gear and belt-pulley mechanisms
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21	Course Content:	

Course Content:

Week	Theoretical	Practice
1	Basic Concepts	Sample Solution

2	Degrees of freedom and types of joints	Sample Solution
3	Degrees of freedom and special conditions in common types of mechanisms	Sample Solution
4	Kinematic chain generation	Sample Solution
5	Position Analysis in Mechanisms	Position analysis with Solidworks
6	Vector loops	Sample Solution
7	Vector loops (continued)	Solving mechanism equation systems using python
8	Velocity Analysis in Mechanisms	Solving mechanism equation systems using excel
9	Velocity Analysis in Mechanisms (continued)	Sample Solution
10	Acceleration analysis in mechanisms	Sample Solution
11	Acceleration analysis in mechanisms	Solution of linear mechanism equation systems with

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	1.00	14.00
Self study and preperation	13	3.00	39.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	15.00	15.00
Others	0	0.00	0.00
Final Exams	60	20.00	1200.00
Total Work Load			1311.00
Total work load/ 30 hr			43.87
ECTS Credit of the Course			4.00

22	Textbooks, References and/or Other Materials:	1. Söylemez, E., 2000. Mekanizma tekniği. Birsen Yayınevi, İstanbul Mimarlık Fakülşesi, BURSA. (Basılmamış) Kitabevi, İSTANBUL. 4. ÖZOKLAV H., 1988. Çözümlü Kinematik Problemleri 5. PASIN,F., GURGOZE,M., TAŞCAN,S., Mekanizma Tekniği, İstanbul Teknik Üniversitesi Vakfı, Kitap No: 16, İSTANBUL.
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	20.00
Quiz	0	0.00
Home work-project	4	20.00
Final Exam	60	60.00
Total	65	100.00

Contribution of Term (Year) Learning Activities to Success Grade	40.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	The effect of the midterm exam and the assignments on the course-passing grade is 40%, the effect of the final exam on the course-passing grade is 60%.

24 ECTS / WORK LOAD TABLE

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	0	0	0	3	0	0	0	0	0	5	0	0	0	0	0
ÖK2	4	0	0	0	5	0	0	0	0	0	3	0	0	0	0	0
ÖK3	5	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0
ÖK4	3	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0
ÖK5	5	0	0	0	5	0	0	0	0	0	4	0	0	0	0	0
ÖK6	4	0	0	0	3	0	0	0	0	0	5	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**