DYNAMIC

1	Course Title:	DYNAMIC	
2	Course Code:	INS2014	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	4	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. M.ÖZGÜR YAYLI	
15	Course Lecturers:	Prof. Dr. M. Özgür YAYLI	
16	Contact information of the Course Coordinator:		
17	Website:	http://insaat.uludag.edu.tr	
18	Objective of the Course:	• Solving Initial and Boundary Value Problems in Engineering Applications - Understanding of basic concepts in the theory of functions of complex variables	
19	Contribution of the Course to Professional Development:	• Establishing mathematical models of problems encountered in engineering • Obtaining general information about complex variables and applying them • Series and its applications • Differential equations and Transformation techniques	
20	Learning Outcomes:		
		1	Be able to describe orally and in writing the problems in dynamic and kinematics
		2	Be able to model the fundamental principles of applied kinematics for particles and rigid bodies in engineering dynamics by using simple drawing techniques and modern computer technology.
		3	Be able to implement an integrated understanding of engineering dynamics principles through applications involving problem solving and through creation of design solutions to engineering scenarios.
		4	Be able to model the dynamics problems by using the simple drawing techniques and modern computer tools and also be able to drive the mathematical formulations of dynamics problems.
		5	Be able to analyze the dynamics of particles and rigid bodies with applications.
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21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Kinematics of Particles	
2	Kinematics of Particles	
3	Kinetics of Particles: Newton's Second Law	
4	Kinetics of Particles: Newton's Second Law	
5	Kinetics of Particles: Energy and Momentum Methods	
6	Kinetics of Particles: Energy and Momentum Methods	
7	Systems of Particles	
8	Systems of Particles	
9	Kinematics of Rigid Bodies	
10	Kinematics of Rigid Bodies	
11	Plane Motion of Rigid Bodies: Forces and Accelerations	
12	Plane Motion of Rigid Bodies: Forces and Accelerations	
13	Plane Motion of Rigid Bodies: Energy and Momentum Methods	
14	Plane Motion of Rigid Bodies: Energy and Momentum Methods	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	6	1.00	6.00
Projects	2	12.00	24.00
Field Studies	0	0.00	0.00
Midterm exams	1	3.00	3.00
Others	0	0.00	0.00
Final Exams	1	3.00	3.00
Total Work Load			120.00
Total work load/ 30 hr	60.00		4.00
ECTS Credit of the Course			4.00

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	Understanding the principles of applied mathematics used in the course

24	**ECTS / WORK LOAD TABLE**

Hill, 2007.
Engineering Mechanics-Dynamics, 11th SI Ed., Hibbeler,
Engineering Mechanics-Dynamics, 5th SI Ed., Meriam J. L., Kraige L. G. and Palm W.J., John Wiley, 2003.

22	Assesment

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm exams	1	40
Quiz	0	0
Final Exam	1	60
Total		100

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	0	5	0	0	0	0	3	2	0	0	0	2	0	0	0	0
ÖK2	5	3	0	4	0	4	3	0	0	0	0	0	0	0	0	0
ÖK3	5	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	5	0	0	0	5	4	0	0	0	0	0	3	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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