AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Modeling and Analysis in Agricultural Engineering						
Course Code	ZTM549		Couse Level	Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To Provide Students İnformation on Modeling, Analysis and simulation in the Subjects of Engineering Systems.						
Course Content	Modeling Dynamic Systems with Ordinary Differential Equations. Analytical and Numerical Solutions of Differential Equations, İntroduction to State Variable Methods of System Analysis. Simulation and Analysis of dynamic system. MATLAB will be used Throughout the Course for Modeling and Numeric Analysis.						
Work Placement	N/A						
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Demonstration				
Name of Lecturer(s)							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Modeling and Dynamics of Engineering Systems. Yücel ERCAN

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to Engineering System Modeling and Analysis
2	Theoretical	Modeling of Mechanical Systems
3	Theoretical	Modeling of Mechanical Systems
4	Theoretical	Modeling Hydraulic Systems
5	Theoretical	Modeling Hydraulic Systems
6	Theoretical	Analytical and Numerical Solution of System Models
7	Intermediate Exam	Midterm Exam
8	Theoretical	Analytical and Numerical Solution of System Models
9	Theoretical	Analytical and Numerical Solution of System Models
10	Theoretical	Analytical and Numerical Solution of System Models
11	Theoretical	Analytical and Numerical Solution of System Models
12	Theoretical	Analytical and Numerical Solution of System Models
13	Theoretical	Analytical and Numerical Solution of System Models
14	Theoretical	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	3	98
Assignment	6	5	10	90
Midterm Examination	1	3	3	6
Final Examination	1	3	3	6
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8

25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Obtain Mathematical Models of Various Engineering Systems
2	Obtain Analytical Solution for Engineering Systems
3	Obtain Numerical Solution for Dynamic Systems Using MATLAB Software

4	Analyze System Response Using MATLAB Software for This Purpose
5	Apply Knowledge of Modeling and Analysis on Various Subjects in Area of Biosystem Engineering .

Programme Outcomes *(Agricultural Machinery Master)*

1	Identification, formulation and solving the problems in the field of Agricultural Machinery
2	The ability to use modern engineering tools and techniques
3	The ability to use the information, which is obtained by following the scientific and technological developments, in the academic life and practice.
4	The ability to evaluate multi-faced relationship between them by understanding interaction among agricultural technology, soil, plants and animals
5	Professionalism and ethical responsibility
6	The ability to work in disciplinary and multi-disciplinary teams
7	The ability to communicate effectively
8	The ability to do research for accessing information and to use data base and other resources
9	The ability to do analyze and interpret the experimental results and the design of experiment
10	The ability to identify and interpret knowledge of current professional issues and events
11	The ability to get aware the universal and social effects of engineering solutions and applications
12	Accordance with the requirements of science and technology, ability to use scientific knowledge creative

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L3
P1		5
P2	4	5
P3		5
P4	4	5
P5		5
P6	5	4
P7		4
P8	4	4
P9	5	4
P10	5	4