

School of Engineering and Natural Sciences / Industrial Engineering (English)

2022 - 2023 Academic Year

PROGRAMMING with MATLAB

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
PROGRAMMING with MATLAB	IND2149090	Fall Semester	2+2	3	6
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Elective				
Course Coordinator	Assist.Prof. Atakan MANGIR				
Name of Lecturer(s)	Assist.Prof. Abdussamet SUBAŞI				
Assistant(s)					
Aim	Learning to computer programming and calculation principles with gaining ability to develop open source programming codes and contributing to develop of engineering problem solving ability.				
Course Content	This course contains; Introduction to Scientific and Engineering Computations, Introduction to Matlab Computing Environment, Variables, Operations and Simple Plot, Algorithms and Logic Operators, Flow Control, Errors and Source of Errors, Functions, Arrays, Solving Simple Equations, Examples on Polynomials, Applications of Curve Fitting, Applications of Interpolation, Application of Numerical Integration, Symbolic Mathematics, Ordinary Differential Equation (ODE) Solutions with Built-in Functions.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Student, succeeded at the course satisfactorily can: 1. Learn the knowledge on contemporary issues of engineering problems and relate them with the problem solutions methods, 2. Learn the engineering problems solution method, 3. Analyze a problem and gain engineering design talents, 4. Prepare scientific report and design engineering project.			1, 14, 15, 2, 4, 6	A, C, E	
Teaching Methods	1: Lecture, 14: Self-Study, 15: Problem solving, 2: Question - Answer, 4: Exercise, Practice, 6: Role Model, Making an example				
Assessment Methods	A: Written Exam, C: Homework, E: Quiz				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to Scientific and Engineering Computations				
2	Introduction to Matlab Computing Environment				
3	Variables, Operations and Simple Plot				
4	Algorithms and Logic Operators				
5	Flow Control, Errors and Source of Errors				
6	Functions				
7	Arrays				
8	Solving Simple Equations				
9	Examples on Polynomials				
10	Applications of Curve Fitting				
11	Applications of Interpolation				
12	Application of Numerical Integration				
13	Symbolic Mathematics				
14	Ordinary Differential Equation (ODE) Solutions with Built-in Functions				
Evaluation Methods		Weight(%)			
Midterm Exam		30			
General Exam		70			

Resources
William J. Palm, 2005, Introduction to Matlab 7 for Engineers, Mc Graw Hill. Brian H. Hahn, Daniel T. Valentine, 2017, Essential MATLAB for Engineers and Scientists, Academic Press