

# ÇANKAYA UNIVERSITY

## Department of Industrial Engineering

Spring, 2017

### IE 117 - Computational Programming Tools in IE

(2 2 3 credits – 5 ECTS)

#### Course Description:

This is a one-semester course that covers the basic concepts of computer programming in C# and MATLAB by relating with Industrial Engineering concepts. Developing algorithms using stepwise refinement method. Fundamental concepts that are related to structured programming. Data types and variable definitions. Basic control structures. Conditional and looping structures. Function concept. Arrays and list. File I/O structure.

	<b>Instructor</b>	<b>Assistant</b>
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<b>Office hours:</b>	tba	tba

#### Weekly Course Schedule:

<b>Week</b>	<b>Topic(s)</b>
1	Flowcharting basics, debugging and tracing.
2	Basic concepts of programming. Variable declarations and data types in C#.
3	If...else if...else structure. Nested if structure in C#
4	Loop structure. Nested loop statements in C#.
5	One dimensional – multi dimensional arrays and foreach loop in C#
6	Advanced one dimensional – multi dimensional arrays and List structure in C#
7	Functions in C#. Iterative and recursive functions.
8	Advanced function applications.
9	Basic file operations, I/O using files in C#.
10	Introduction to MATLAB. Variable declaration, if clause in MATLAB
11	Plotting in MATLAB.
12	Loops structure at MATLAB programming.
13	Functions in MATLAB.
14	Basic file operations, I/O using files in MATLAB.

**Grading:** Failed students, who have not attended any of the exams, will get “NA” letter grade.

Lab work:	30% (Quizzes and homeworks)
Midterm 1:	30%
Final:	40%
<b>Total:</b>	<b>100%</b>

## Textbooks

Author(s)	Title	Publisher	Publication Year	ISBN
Paul Deitel and Harvey Deitel	C# 2012 for programmers	Prentice Hall	2014	978-0-13-344057-7
Amos Gilat	MATLAB, An Introduction with Applications	Wiley	2011	978-0-470-76785-6

### Policy on Homework and Exams:

Cheating in homework (lab works) and exams has serious consequences. Therefore, all work submitted should reflect your honest effort.

All the announcements, including the examination dates will be posted on [webonline.cankaya.edu.tr](http://webonline.cankaya.edu.tr)

Instructor has the right of updating syllabus.