

Computer II

Course Description Form

1. Course Name:					
Computer II					
2. Course Code:					
MUC224					
3. Semester / Year:					
First semester / Second year					
4. Description Preparation Date:					
1 st September 2025					
5. Available Attendance Forms:					
Weekly (Lect :2 hr lab.: 2 hr)					
6. Number of Credit Hours (Total) / Number of Units (Total)					
Lecture :30 hours Lab:30 hours ECTS: 3					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Noor Kadhim Maftin Email: noor.kadhim@muc.edu.iq					
8. Course Objectives					
Course Objectives		1 The student should be able to draw a flowchart for simple to intermediate problem statement. 2. The student should develop the knowledge and ability to write scripts in Matlab programming language. 3. The student should be able to apply his knowledge in core civil engineering classes (Engineering Mechanics and Mechanics of Materials) in preparing the necessary steps to write a script to solve a problem within these fields. 4. The students should be able to submit at the end of the term a project that conclude what he/she learned that term.			
9. Teaching and Learning Strategies					
Strategy		The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills by developing their own problem statements. This will be achieved through classes, and interactive tutorials through the hands-on activities during using computers and work on a final project.			
Course Structure					
We ek	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1.	Th.:2 Pr.: 2	Demonstrate the ability to read, interpret, and construct basic flowcharts for problem-solving.	Introduction, Flowcharts	Lect. & Lab.	Homework
2.	Th.:2 Pr.: 2	Operate the MATLAB interface and perform basic mathematical commands successfully.	Matlab: introduction, Starting windows and simple operations	Lect. & Lab.	Classwork
3.	Th.:2 Pr.: 2	Create arrays and apply fundamental mathematical operations on them.	Arrays: Creating and Mathematical operation (part 1)	Lect. & Lab.	Homework
4.	Th.:2 Pr.: 2	Manipulate arrays using advanced operations and indexing techniques.	Arrays: Creating and Mathematical operation (part 2)	Lect. & Lab.	Quiz
5.	Th.:2 Pr.: 2	Write simple MATLAB scripts and save, load, and manage data files.	Using Script Files and Managing Data (part 1)	Lect. & Lab.	Classwork
6.	Th.:2 Pr.: 2	Apply scripting skills to analyze and process datasets independently.	Exam 1 + Using Script Files and Managing Data (part 2)	Lect. & Lab.	Exam 1
7.	Th.:2 Pr.: 2	Use conditional statements to control program decisions and logical flow.	Conditional statements	Lect. & Lab.	Classwork
8.	Th.:2 Pr.: 2	Construct and execute for-loops to perform iterative computations.	For Loops	Lect. & Lab.	Quiz
9.	Th.:2 Pr.: 2	Apply nested loops to solve multi-level repetitive computational problems.	Nested loops	Lect. & Lab.	Quiz
10.	Th.:2 Pr.: 2	Use while-loops to perform conditional iterative processes efficiently.	While loops	Lect. & Lab.	Classwork
11.	Th.:2 Pr.: 2	Create user-defined functions and apply them to modularize MATLAB programs.	Functions + Exam 2	Lect. & Lab.	Exam 2
12.	Th.:2 Pr.: 2	Produce clear, labeled 2D plots to visualize engineering and mathematical data.	2D plotting	Lect. & Lab.	Classwork
13.	Th.:2 Pr.: 2	Analyze polynomial functions and perform curve-fitting using MATLAB tools.	Polynomials and curve Fitting 1	Lect. & Lab.	Homework
14.	Th.:2 Pr.: 2	Collaborate in teams to plan and develop a MATLAB-based applied project.	Group gathering to work on the project	Lect. & Lab.	Classwork
15.	Th.:2 Pr.: 2	Present analytical results, MATLAB codes, and conclusions in a clear professional format.	Projects Presentation	Lect. & Lab	Classwork

16. Course Evaluation

The grade distribution is as follows:

Assessment: Formative 40 marks, monthly exam 10 marks

Final exam: Theory 50 marks

17. Learning and Teaching Resources

Required textbooks (curricular books, if any)

1. Cambridge English for Engineering

	2. Headway – intermediate 3. The Academic Guide for English (A handout Lect. Zena Ibrahim & Asst. Lect. Sheelan S. Kamal)
Main references (sources)	1. English for engineers and technologists 2. Cambridge Professional English in Use
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://www.ets.org/toefl.html https://www.bbc.co.uk/learningenglish/