**THE INTERNATIONAL UNIVERSITY (IU) – VIETNAM NATIONAL UNIVERSITY - HCMC**

**School of Electrical Engineering**

**Introduction to Computer for Engineers**

1. **Course number and name**

EE050IU – Introduction to Computer for Engineers

1. **Credits and contact hours**

3 credits, four periods (45minutes per period), once per week

1. **Instructor’s or course coordinator’s name**

Dr. Ta Quang Hien

1. **Textbooks and Other Required Materials:**

*MATLAB Programming for Engineers,* Stephen J. Chapman, Thompson Books

Lecture Notes

1. **Other supplemental materials**

**None**

1. **Specific course information**

*a.* ***Brief description of the content of the course (catalog description)***

This course is an introduction to solving engineering problems through the use of the computer. It introduces general problem-solving techniques including the concepts of step-wise refinement applied to the development of algorithms. This course will cover elementary programming concepts using the MATLAB programming language and apply those concepts towards the solution of engineering problems.

*b.* ***Pre-requisite:***

None

***Co-requisite:***

None

c. ***Indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program***

This is a required course.

1. **Specific goals for the course**

*a. Upon the successful completion of this course students will be able to:*

1. Understand the basic programming using MATLAB.
2. Understand the fundamental of data types and storage classes in MATLAB.
3. Understand the conditional program execution, program loops, and iteration.
4. Design, implement & debug a program that uses MATLAB programming constructs.
5. Apply numerical approximations to calculating integrals, curve fitting and ODE.

*b. The relationship between Course Outcomes (1-5) and Student Outcomes (1-7) is shown in the following table:*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| Course Outcomes No.1 | x |  |  |  |  |  |  |
| Course Outcomes No.2 | x |  |  |  |  |  |  |
| Course Outcomes No.3 | x |  |  |  |  |  |  |
| Course Outcomes No.4 | x |  |  |  |  |  |  |
| Course Outcomes No.5 |  |  |  |  |  | x |  |
| Total (%) | 80 |  |  |  |  | 20 |  |
| ABET Evidences | 3 HW  3 Quizzes |  |  |  |  | 3 Midterms  3 Finals |  |

1. **Lecture Topics:**

* Introduction
* Basic functions of MATLAB
* Matrices and Vectors
* Files and Cell arrays
* Mathematical operations with arrays
* Plots and graphs
* Script and function files
* Logical Operators and Conditional Statements
* Loops
* Strings
* Curve fitting and interpolation
* Numerical Integration
* Graphical User Interface (GUI)
* ODE
* MATLAB applications to DC Circuit, Signal, Probability and Wireless Communications.

Lecture hours: depends on semester calendar .

Office hours: based on detailed semester calendar, or by appointment @ O2.206

Contact information: vtphuoc@hcmiu.edu.vn

**Independent Learning Experiences:**

Quizs are given randomly, collected and graded.

**Course Policies:**

Assignments: All assignments need to be submitted on the due date. Otherwise, a penalty of 20% per day can be considered for each assignment.

Policy on dishonesty: Students are expected to do their own work at all times. Any evidence of plagiarism or cheating will be treated as grounds for failure in the class.

Link to download materials: **http://blackboard.hcmiu.edu.vn/**

**Prepared by:** Ta Quang Hien