جامعة الشرقية
A' SHARQIYAH UNIVERSITY

ACADEMIC YEAR	2020/2021		
Course Code & Title	ENGR111 – Computer Applications		
Credit hours	3	**Level of study**	Undergraduate
College / Centre	College of Engineering		
Co-requisites	NA	**Pre-requisites**	NA

1.   COURSE OUTLINE

This course exposes students to a *numerical computing environment* and an integrated *development environment* (IDE) through learning MATLAB and Visual Basic programming languages, respectively. The course includes hands-on laboratory sessions.

2.   AIMS

The aim of this course is to provide problem solving skills to students using a computer programming approach. The students will be able to formulate problems, plan for solutions, implement these solutions in numerical computing environments.

3.   LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes *(Definitive)* Upon successful completion of this course, students will be able to:	Teaching and Learning methods *(Indicative)*	Assessment *(Indicative)*
1. Demonstrate competency in using numerical computing and development environments.	Lectures and student-centric learning with activities/seat works and practical exercises	Tests, quizzes, Assignment, and final exam
2. Exhibit good programming skills including designing, writing, testing and debugging computer programs.	Lectures and student-centric learning with activities/seat works and practical exercises	Tests, quizzes, Assignment, and final exam
3. Demonstrate problem solving skills relating to numerical computing and development using different programming languages.	Lectures and student-centric learning with activities/seat works and practical exercises	Tests, quizzes, Assignment, and final exam

4.   ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Mid-term Examination 1	15
Mid-term Examination 2	15
Project-based Assignment	20

Laboratory	20
Final Examination	30
TOTAL	**100%**

5.   ACHIEVING A PASS

Students will achieve **3** credit hours for this course by passing **ALL** of the course assessments *[alternatively, list the compulsory pass assessments*]* and achieving a **minimum overall score of 50%**

*NB *Ensure that ALL learning outcomes are taken into account*

6.   COURSE CONTENT (Indicative)

LECTURE TOPIC	TIME (HOURS)
Pseudocodes, algorithms and flowcharts	3
MATLAB Environment	3
Built-In MATLAB Functions	3
Manipulating MATLAB Matrices	3
Plotting and graphics control	6
User-Defined Functions	6
User-Controlled Input and Output	3
Logical Functions and Selection Structures	3
Repetition (control) Structures	6
Introduction to Visual Basic IDE, Controls and Their Properties, Variables, Constants,	3
Calculations, Decisions, Conditions, Menus	3
Procedures, Functions, Lists, Loops, Printing, and Arrays.	3
TOTAL HOURS	**45**
Plus **RECOMMENDED INDEPENDENT STUDY HOURS**	

TOTAL COURSE HOURS	90

7.   RECOMMENDED READING

Core text/s:

- Holly Moore, MATLAB for Engineers, 4th edition, Pearson Education Inc, 2015.
- Diane Zak, Programming with Microsoft Visual Basic 2015, 7th Edition, Course Technology, Cengage Learning, 2016.

Reference Books:
- Stephen J. Chapman, MATLAB Programming for Engineers, 5e, Cengage Learning, 2016.
- Tony Gaddis, Kip R. Irvine, Starting Out With Visual Basic, 7/E, Pearson, 2017.