GAU, Faculty of Engineering

Course Unit Title	Computer Programming I
Course Unit Code	ENG102
Type of Course Unit	Compulsory, All engineering students
Level of Course Unit	1st Year BSc
National Credits	3
Number of ECTS Credits Allocated	6 ECTS
Theoretical (hour/week)	2
Practice (hour/week)	-
Laboratory (hour/week)	2
Year of Study	1
Semester when the course unit is delivered	2
Mode of Delivery	Face to Face, Laboratory Experiments
Language of Instruction	English
Prerequisities and co-requisities	-
Recommended Optional Programme Components	Basic background in algorithms

Objectives of the Course:

- Analyze the problems and develop computer algorithms to solve novel problems
- Write, document, test and debug C language programs.
- Make use of variables, expressions, selection and looping statements
- Make use of arraysto store and process lists of data.
- Use editors to compose programming code and compilers to produce executable software

Learning Outcomes

When this course has been completed the student should be able to		Assesment.
1	Recognise the fundamentals of computer programming	1,2
2	Identify the behavior of primitive data types and arrays	1,2
3	Apply decision and iteration control sturctures to implement algorithms	1,2,5
4	Develop good programming skills	1,2
5	Use C compilers and debuggers	5

Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work

Course's Contribution to Program

		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	3
2	Ability to design and conduct experiments as well as to analyze and interpret data	4
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	2
4	Ability to apply systems thinking in problem solving and system design	3
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	3
7	Ability to express their ideas and findings, in written and oral form	2
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	2
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	3

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)

Course Contents

Week			Exams
1	Chapter 1	Introduction to C language	
2		Memory, processing and Primitive Data Types	
3		Formatted I/O	
4		Mathematical Operators and Expressions	
5	Chapter 2	Structure program development in C – Control structures; if Selection statement	
6		Structure program development in C – If...else Selection statement, nested-if Selection statement	Quiz
7		Structure program development in C – switch Multiple Selection statament	
8			Midterm
9	Chapter 3	C program Control; repetition essentials, for repetition statement	
10		C program Control; repetition essentials, While repetition statement	
11		C program Control; repetition essentials, do- while repetition statement	
12	Chapter 4	One Dimensional Arrays in C	
13		Defining Arrays; and examples	
14		Arithmetic array operations	Lab. Exam
15			Final

Recommended Sources

Textbook: C –How to program, Deitel, Deitel, (Fifth edition 2007), Pearson Prentice Hill,(Other editions are also useful)

Supplementary Material (s): Schaum's Outline of Theory and Problems of Programming with C, B.S. Gottfried, , McGraw-Hill, (1996)
C Programming: A Modern Approach, K. N. King and Norton, (2nd Edition 2008) (Other editions are also useful)

Assessment

Attendance	5%	
Laboratory	15%	
Midterm Exam (Written)	30%	
Quiz (Written)	10%	
Final Exam (Written)	40%	
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	2	30
Labs and Tutorials	10	2	20
Assignments	5	3	15
Project/Presentation/Report Writing	-	-	-
E-learning Activities	-	-	-
Quizzes(Lab Quiz+Quiz)	2	12	24
Midterm Examination	1	14	14
Final Examination	1	22	22
Self Study	14	4	56
Total Workload			181
Total Workload/30 (h)			6.00
ECTS Credit of the Course			6