MUTAH UNIVERSITY
Faculty of Engineering
Department of Computer Engineering

Course Syllabus

Course Code	Course Name	Credits	Contact Hours
0405112	Programming for Engineers	3	3 T

INSTRUCTOR/COORDINATOR	
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Office Hours	

TEXTBOOK	
Title	C++ PROGRAMMING: PROGRAM DESIGN INCLUDING DATA STRUCTURES
Author/Year/Edition	D.S. MALIK./4th Edition
Other Supplemental Materials	
Title	C++ programming : From Problem Analysis to Program Design / C plus plus programming
Author/Year/Edition	D.S. MALIK./ 4th Edition

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

This course is designed to teach students the basics of C++ programming language, which include data types, declaring variables, control (selection and repetition) operators, user-defined functions, strings, arrays, and records. Topics covered contain fundamentals of algorithms, problem-solving steps, and programming concepts with examples and applications using the C++ language. The course prepares students for more advanced programming courses such as Object-Oriented programming and Data structures using the C++ programming language.

B. Pre-requisites (P) or Co-requisites (C)

Computer Skills 99 (0304099) **(P)**

C. Course Type (Required or Elective)

Required

SPECIFIC GOALS

A. Course Learning Outcomes (CLOs)

By the end of this course, the student should be able to:
CLO1: Follow the problem-solving steps and create the solution algorithm [1].
CLO2: Know the basic parts of C++ programs such as data types, declaring variables and readable documentation [1].
CLO3: Use the selection and repetition operators and user-defined functions to write simple and complex C++ programs [2].
CLO4: Use arrays and records programming concepts efficiently as structure data types [2].

B. Student Learning Outcomes (SOs) Addressed by the Course

1	2	3	4	5	6	7
✓	✓					

BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
Introduction to computer hardware and programming languages	1	3
Basic elements of C++ (data types)	2	6
Input/Output (format operators)	2	6
Control Structures *(Selection)*	2	6
Control Structures *(Repetition)*	1	3
User-Defined Functions (Return value)	2	6
User-Defined Functions (Void)	1	3
Arrays	2	6
Records (struct)	1	3
Total	*14*	*42*

EVALUATION

Assessment Tool	Due Date	Weight (%)
Mid Exam	According to the university calendar	30
Course Work (Homeworks, Quizzes, Projects, …etc.)	One week after being assigned	20
Final Exam	According to the university calendar	50

ABET's Students Learning Outcomes (Criterion # 3)		
	Relationship to program outcomes	
ABET 1-7		**… Engineering Student Outcomes**
1.	✔	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2.	✔	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic
3.		ability to communicate effectively with a range of audiences
4.		an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5.		an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6.		an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7.		an ability to acquire and apply new knowledge as needed, using appropriate learning strategies