	Ministry of Higher Education and Scientific Research - Iraq University of Technology Biomedical Engineering Department	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Science**			**Module Delivery**	
Module Type	**Other**			☒**Theory** ☒**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**COSC124**				
ECTS Credits	5				
SWL (hr/sem)	**125**				
Module Level	UGI		**Semester of Delivery**	Two	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Introduce students to principles and practice of computer system. 2. Learn the foundational concepts of computer science and challenges them to explore how computing and technology can impact other fields like medicine. 3. Help students develop critical thinking abilities and problem-solving skills when working with computers. 4. Provide the basic principles behind computer programming. 5. Enable students to build technical skills in programming languages and how to solve problems through the development of algorithms and programs.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Familiarity with computer systems. 2. Students will develop interests in using computers for professional work. 3. Ability to understand programming concepts and apply them to solve problems.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Computer Fundamentals Part: Include an Introduction to computers, Hardware Components and Software Classifications Including System software and Application Software, Types of Computers, Computer Networks and Internet. Programming Part: - Include Basic concepts of programming, including notions of algorithms, flowcharts, overview of computer programming Languages. - Introduction to C++ programming, Anatomy of a C++ program, Basic syntax and semantics, Comments and program structure, Variables and Data types, Basic input and output. - C++ Control Structures including Conditional statements (if-else, switch-case) and Looping constructs (for, while, do-while). - C++ Functions including Modular programming and functions, Function declaration and definition, Arguments and return values, passing arguments by reference and by value, Function overloading and default arguments.

Course Description	
Course Description	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. This will be achieved through classes, interactive tutorials and by considering type of assignments involving some problem solving that are interesting to the students.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Lectures, Presentations, Group Discussions, Experimental Lab, Assignments, Quizzes, Examinations.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	All
	Assignments	2	10% (10)	2, 12	All
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	5	10% (10)	13	All
Summative	**Midterm Exam**	2 hr	10% (10)	7	All

assessment	**Final Exam**	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to computers
Week 2	Hardware
Week 3	Software
Week 4	Programming Basics: Notions of algorithms, flowcharts and programming.
Week 5	Overview of Programming language C++
Week 6	C++ Program Structure
Week 7	C++ Variables and Data Types
Week 8	C++ Basic Input and Output
Week 9-10	C++ Decision Making
Week 11-12	C++ Loops
Week 13-14	C++ Functions
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1-3	Lab 1-3: Microsoft Office Application package for Word Processing, Spread Sheet, and Presentation.
Week 4-5	Lab 4-5: Basic Computer Maintenance
Week 6	Lab 6: C++ Environment Setup
Week 7-8	Lab 7-8: C++ Programming language Basics
Week 9-11	Lab 9-11: C++ Decision Making and Looping
Week 12-13	Lab 12-13: C++ Functions

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- Fundamentals of Computers by V. Rajaraman and N. Adabala. 2- Fundamentals of Programming C++ by Richard L. Halterman.	Yes
Recommended Texts	1- Computer Fundamentals by Anita Goel. 2- Programming Fundamentals: A Structured Approach Using C++ by Kenneth Leroy Busbee.	Yes
Websites	1- https://www.tutorialspoint.com/cplusplus/index.htm	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.