	Ministry of Higher Education and Scientific Research - Iraq University of Warith Alanbyaa Aircraft engineering	

MODULE DESCRIPTOR FORM

Module Information
معلومات المادة الدراسية

Module Title	Computer Science علم الحاسوب	**Module Delivery**	
Module Type	SUPLEMENT		
Module Code	COSC111		
ECTS Credits	3		
SWL (hr/sem)	75		

Module Level	1	**Semester of Delivery**	1
Administering Department	Aircraft	**College**	Engineering
Module Leader	Asst. Lec. Alaa Akram	**e-mail**	alaa.akram1995@gmail.com
Module Leader's Acad. Title	Asst. Lec.	**Module Leader's Qualification**	Masters
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval	03/04/2024	**Version Number**	1.0

Relation With Other Modules
العالقة مع المواد الدراسية ألخرى

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. This course teaches the student how to apply fundamental procedural programming concepts to the programming language C++. Programming principles and constructs, such as data types, common control flow structures, basic data structures, and console input/output will be explained. 2. To provide sufficient knowledge of programming Language C++ to write straightforward programs. 3. The development of the student's ability to apply the knowledge in order to be able to correct analysis of the question and thus put the appropriate assumptions and interpretation to reach a solution. Through textbooks and lectures, in addition to the (programming I) Laboratory experiments. 4. Knowledge and Understanding • Use a special programming language C++ compiler with the issuance of a modern software solves all the complex questions. • Solution of different equations and problems using C++ language. • Model Description Terms of solution for each and every way mathematical operation. 5. To develop the student to have specific skills • Logical thinking when solving problems • The use of mathematical equations. • Determine the appropriate method of solution. • Explain ways to enter matrices and vectors
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Enable the student to learn and understand the basic of: • Evolution of Computers, Generation of Computers, Super Computers, Mainframe Computers, Personal Computers (Different Types)) • Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size • Characteristics of Computers, Block Diagram of a Digital Computer. 2. The student should Know the general information of Operating systems (OS), Types of OS, and the other subjects as it sequenced by

	the Course Materials and Schedule. 3. Understanding the Programming Concepts, such as: • Global concept in any programming languages. • Structured Programming. • Algorithms and Flowcharts with Examples 4. The ability to make and build programs in different ME applications. 5. Enable the student to learn the Variables, Data Types, Arithmetic operators, Assignment operators, Comparison operators, Logical operators. 6. The student should understand and be able to relate Basic Input / Output, Control Structures, and Functions.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Introduction to Computers I+ II (History)</u> Evolution of Computers, Generation of Computers, Super Computers, Mainframe Computers, Personal Computers (Different Types)), Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size, Characteristics of Computers, Block Diagram of a Digital Computer, Operating systems (OS), Types of OS, Dos and Windows operating systems. [3 hrs] <u>Introduction to Programming Concepts I</u>, Global concept in any programming languages, Structured Programming Algorithms and Flowcharts with Examples. [3 hrs] <u>Introduction for C++ programming language</u> Instructions for using (Dev) software, Basics of C++, Program Structure. [3 hrs] <u>Variables, Data Types</u> int • double • float • string • bool • Constants • , Arithmetic operators Assignment operators, Comparison operators, Logical operators. [4 hrs] <u>Basic Input / Output</u> Course input cin>>, Course output cout<< [4 hrs] <u>Control Structures</u> if statement, if…else Statement, if...else if...else Statement, switch Statement Iteration structures (loops), For loop, While Loop [5 hrs] <u>Functions (I)+ (II)</u> [5 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	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 simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقويم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	10% (10)	5, 8, 12, 14	LO # 1 to 6
	Assignments	10	15% (15)	Continuous	LO # 1 to 6
	Projects / Lab.	15	10% (10)	Continuous	LO # 1 to 6
	Report	1	5% (5)	13	LO # 1 to 6
Summative assessment	**Midterm Exam**	1.5 hr	10% (10)	7	LO # 1 to 6
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج االسبوعي النظري	
	Material Covered
Week 1	Introduction to Computers I (History) • Evolution of Computers, Generation of Computers, Super Computers, Mainframe Computers, Personal Computers (Different Types). • Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size. • Characteristics of Computers, Block Diagram of a Digital Computer.
Week 2	Introduction to Computers II (History) • Operating systems (OS). • Types of OS, Dos and Windows operating systems.
Week 3	Introduction to Programming Concepts I, • Global concept in any programming languages. • Structured Programming. • Algorithms and Flowcharts with Examples.
Week 4	Introduction for C++ programming language • Instructions for using (Dew) software • Basics of C++ • Structure of a program
Week 5	Variables, Data Types • int • double • float • string • bool • Constants • • Arithmetic operators • Assignment operators • Comparison operators • Logical operators
Week 6	Basic Input / Output • Course input cin>> • Course output cout<<
Week 7	Control Structures • if statement • if…else Statement • if...else if...else Statement • switch Statement
Week 8	
Week 9	Applications and case study.
Week 10	Control Structures • Iteration structures (loops) • For loop • While Loop • Applications
Week 11	
Week 12	Functions (I) + Applications
Week 13	

Week 14	Functions (II) + Applications
Week 15	
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج االسبوعي للمختبر	
	Material Covered
Week 1	Exp. 1: Practical learning of computers types moreover to software and hardware's.
Week 2	Exp. 2: Practical learning of operating systems types.
Week 3	Exp. 3: Simple code and flowchart about Program structure.
Week 4	Exp. 4: Simple code of C++.
Week 5	Exp. 5: Basics code with variables and data types.
Week 6	Exp. 6: Basic code with Input / Output.
Week 7	Exp. 7: C++ code with control structures as if statement.
Week 8	Exp. 8: C++ code with control structures as switch statement.
Week 9	Exp. 9: Applications and case study.
Week 10	Exp. 10: C++ code with control structures as loops, for, and While statements.
Week 11	Exp. 11: Applications of control structures as loops, for, and While statements.
Week 12	Exp. 12: C++ code with Functions (I)
Week 13	Exp. 13: Functions (I) applications.
Week 14	Exp. 14: C++ code with Functions (II)
Week 15	Exp. 15: Functions (II) applications.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lecture notes from the Module Leader	Yes
Recommended Texts	STARTING OUT WITH C++ From Control Structures through Objects. EIGHTH EDITION Tony Gaddis, Haywood Community College. Copyright © 2015, 2012, 2009 Pearson Education, Inc., publishing as Addison-Wesley. ISBN 13: 978-0-13-376939-5 ISBN 10: 0-13-376939-9	No
Websites	https://cplusplus.com/doc/	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB 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.