

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Structured Programming		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Code	ICE122		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	UGx11	Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Fatima Bahjat Ibrahim	e-mail	fatima@kecbu.uobaghdad.edu.iq
Module Leader's Acad. Title	Lecturer	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	/06/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	<ol style="list-style-type: none">1. To solve problems through algorithms and mathematical modules utilizing structured programming.2. To demonstrate creation of derived data types and perform operations on them.3. To gain knowledge about the capability to store information together in a complicated data structure.4. To test a program for correctness (all error type)
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none">1. Understanding the basic principles of program design and implementation by applying structured programming manner.2. Writing efficient and well-documented modular programs.3. Employing structured programming principles to develop a program.4. Developing applications to address practical requirements.5. Analyzing problems and solve them with the help of computers.6. Coping with future courses that that require computer programming.
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <p><u>Part A – Array</u> 1D array - 2D array – Multidimensional array [5 Hrs]</p> <p><u>Part B – Function</u> Predefined – Value returned - Void. [20 Hrs]</p> <p><u>Part C – Structure</u> Struct – with array – with Function. [15 Hrs]</p> <p><u>Part D – Pointers</u> Pointers – with array – struct – Function. [20 Hrs]</p> <p><u>Part E – Lab</u> Demonstrate all the above using Visual studio C++ Compiler. [45 Hrs]</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	This module is a fast-paced introduction to the C and C++ programming languages, with an emphasis on good programming practices and how to be an effective programmer in these languages. This module helps the students in gaining the
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	knowledge to write C++ language applications, mathematical and engineering problems. Students are given weekly coding assignments and a final project to hone their skills. Students are expected to understand how a program is executed, get acquainted with the structured programming principles. This module helps to undertake future courses that assume this programming language as a background in computer programming. Topics include control structures, arrays, functions, recursions, pointers.
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Student Workload (SWL) الحمل الدراسي للطالب محسوب ل ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	108	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	20% (20)	3 /7/ 13	LO #1 - #2 - #3. LO #2 - #5 - #6 LO #4 - #6
	Assignments	5	5% (5)	3 / 5/ 7/ 10/13	LO #1 LO #2 - #3. LO #4, #5. LO #6, #6. All
	Projects	1	5% (5)	Continuous	All
	Lab. Reports	15	10% (10)	Continuous	All
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري

	Material Covered
Week 1	Overview on Computer Programming, Programming in C++.
Week 2	2D array and Multidimensional Array.
Week 3	Implementing String Variables, String handling Functions.
Week 4	Concept of Function, Predefined Functions, User-Defined Functions.
Week 5	Value-Returning Functions, Parameters and Return Values, Void Functions.
Week 6	Function with arrays, Function Overloading, Recursion.
Week 7	Need of Structure, Implementing Structure Variable, Arrays of Structure.
Week 8	Mid Exam + Structure within Structure.
Week 9	Pointers.
Week 10	Pointers and memory.
Week 11	Arrays and Pointers, Pointer Arithmetic.
Week 12	Pointer to Structure, Pointers and Functions.
Week 13	User-defined Simple Data type, Enumeration Type.
Week 14	Namespaces, Type Casting.
Week 15	Scope of an Identifier
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	1D array.
Week 2	2D array + multidimensional array.
Week 3	CString and array.
Week 4	Predefined Functions.
Week 5	Value Returning Functions.
Week 6	Void Functions, Function Overloading.
Week 7	Value Parameters and Reference Parameters.
Week 8	Functions and Array.
Week 9	Struct.
Week 10	Array of Struct. + Struct with array.
Week 11	Pointers.

Week 12	Pointers and array.
Week 13	Pointers and Functions.
Week 14	Enumeration Type.
Week 15	Project with all tools.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	C++ PROGRAMMING From Problem Analysis to Program Design, 6th ed. By Dr. Malik.	Yes
Recommended Texts	Problem solving with C++ / Walter Savitch; contributor, Kenrick Mock. -- Ninth edition.	No
Websites	https://www.programiz.com/cpp-programming	

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.