



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Structured Programming I		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CYS101		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	1	Semester of Delivery	
Administering Department	Dept. of Cybersecurity	College	College of Information Technology
Module Leader	Dr. Senan Ali Abd	e-mail	senan.a.abd@uofallujah.edu.iq
Module Leader's Acad. Title	Lect.	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Senan Ali Abd	e-mail	senan.a.abd@uofallujah.edu.iq
Peer Reviewer Name	Dr. Ahmad AlSabhany	e-mail	Ahmad.alsabhany@uofallujah.edu.iq
Scientific Committee Approval Date	25-5-2026	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 Objectives أهداف المادة الدراسية	1. Understand the concepts and terms used to describe languages that support the imperative, functional, and logic programming paradigms. 2. Solve problems using the functional paradigm 3. Introduce the basic concepts of computer programming using C++. 4. Develop students' ability to design simple algorithms for problem solving. 5. Teach the basic syntax and structure of C++ programs. 6. Enable students to use variables, data types, operators, and libraries in C++. 7. Develop programming skills using conditions and loops to control program flow. 8. Prepare students to write simple C++ programs to solve practical problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explain the fundamentals of computer programming languages and the role of C++ in software development. 2. Develop simple algorithms to solve computational problems before implementing them in code. 3. Write syntactically correct C++ programs using proper structure, syntax rules, and comments. 4. Declare and use variables and different data types to store and manipulate data in C++ programs. 5. Use standard C++ libraries and apply input/output operations to interact with the user. 6. Apply different types of operators in C++ including arithmetic, logical, relational, and bitwise operators to perform calculations and logical decisions. 7. Manipulate strings and perform mathematical operations using C++ built-in functions and libraries. 8. Use Boolean data types and expressions to evaluate logical conditions in programs. 9. Implement decision-making structures such as if, else, and switch statements to control program flow. 10. Construct iterative programs using loops, including while and for loops. 11. Control loop execution using break and continue statements when solving programming problems. 12. Design and implement simple C++ programs that integrate input/output, operators, conditions, and loops to solve practical problems.

Indicative Contents المحتويات الإرشادية	Introduction to computer programming Introduction to C++ Programming C++ Standard Library Control flow in C++ Memory Management in C++ C++ Application Development
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Lectures: Explain programming concepts and C++ syntax. • Practical Lab Sessions: Students write and test C++ programs. • Problem-Solving Exercises: Practice algorithms and coding tasks. • Class Discussions: Encourage understanding of programming concepts. • Assignments and Homework: Reinforce learning through practice. • Quizzes and Exams: Evaluate students' understanding and progress.

Student Workload (SWL) الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	122	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	8
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	200		

Module Evaluation تقييم المادة الدراسية					
	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome	
Formative assessment	Quizzes	2	10% (10)	5 and 12	LO #3, #4 and #10, #11
	Homework	2	5% (5)	4 and 9	LO #3, #4 and #7, #8
	Projects / Lab.	1	15% (15)	Continuous	All

	Exam / Lab.	1	10% (10)	13	LO #5, #8, #9 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	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 computer programming languages and C++
Week 2	Algorithms
Week 3	C++ Syntax and comments
Week 4	Variables & Data types
Week 5	C++ Libraries
Week 6	C++ User Output and Input
Week 7	C++ Operators (Arithmetic operators, Bitwise operators, logical operators, and Relational operators)
Week 8	Mid-term Exam
Week 9	C++ Strings & C++ Math
Week 10	C++ Booleans
Week 11	C++ conditions
Week 12	Switch statement
Week 13	While loop
Week 14	For loop
Week 15	Break and Continue statements
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي المختبر

	Material Covered
Week 1	Introduction and install C++
Week 2	Algorithms
Week 3	Syntax And variables
Week 4	C++ Libraries

Week 5	C++ User Input & Output
Week 6	Data Types
Week 7	C++ Operators
Week 8	Lab Mid-term Exam
Week 9	C++ Strings & C++ Math & C++ Booleans
Week 10	If condition
Week 11	Switch condition
Week 12	While loop C++
Week 13	For loop
Week 14	Break and continue
Week 15	Final Exam

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1. The C++ Programming Language (4th Edition) by Bjarne Stroustrup 2. C++ How to Program 10 th Edition by Paul Deitel and Harvey Deitel	Yes
Recommended Texts		
Websites	https://www.learncpp.com/	

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.				