Computer Programming (II) FORM

نموذج وصف المادة الدراسية

Module Information لومات المادة الدراسية					
Module Title	**Computer Programming (II)**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOMU0302021				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	الأنظمة الطبية الذكية		**College**	العلوم	
Module Leader	م.د. ميثم نبيل مقداد		**e-mail**	maytham.meqdad@uomus.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	م.د. ميثم نبيل مقداد		**e-mail**	maytham.meqdad@uomus.edu.iq	
Peer Reviewer Name	ا.د مهدي عبادي مانع		**e-mail**	mahdi.ebadi@uomus.edu.iq	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules لاعلاقة معلاموادلادراسيةلأاخرى			
Prerequisite module	BMI112	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents هأداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims هدف المادة الدراسية	1. To Introduce students to the fundamental concepts of computer programming. 2. To develop problem solving skills and understanding. 3. To develop the ability to express algorithms in individual steps, and encode these steps in a programming language. 4. To study the Java programming language as practical tools for software implementation. 5. Demonstrate how to resolve typical problems. 6. To familiarize students with good program design, correct coding, and practice debugging (error correcting) techniques.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students will: 1. Be able to define and list the various terms associated with algorithms, flowcharts, and computer programming languages. 2. Be able to analyze a given problem and to translate simple algorithms into simple steps. 3. Be able to present the syntax and semantics of the programming language as well as basic data types, offered by the language. 4. Be able to describe the correct usage of some high-level programming constructs: input/output commands, repetition/iterative statements, and conditional/selective statements. 5. Be able to write, examine, test, and evaluate the operation of computer programs.
Indicative Contents لامحتويات الإرشادية	- Introduction to Arrays. - Why arrays, declaring arrays, initializing an array, printing arrays. - Processing 1D-Arrays. - Processing 2D-Arrays. - Introduction to Strings - String Processing - Introduction to Methods. - Calling a Method. - Void Methods - Boolean Methods - Recursion - Overloading of Methods

	- Introduction to Files - Input Files. - Output Files.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Encourage students to participation in the module with the opportunity of getting more experience in programming field. Furthermore, 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	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/ Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	5% (5)	3, 8	LO # 2, 3, 4 and 5
	Assignments	5	2% (5)	2, 12	LO # 2, 3, 4 and 5
	Projects / Lab.	15	10% (10)	Continuous	
	Report	1	3% (5)	13	LO # 2, 3, and 4
Summative assessment	**Midterm Exam**	2 hr	30% (30)	7	LO # 2, 3, and 4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
للمنهاج الاسبوعي النظري

	Material Covered
Week 1	❖ Arrays Part I • Arrays • Why Arrays • Declaring Arrays • Initializing an Array • Printing Arrays Array
Week 2	❖ Arrays Part II • Reading Arrays • Processing Arrays • Searching Arrays
Week 3	❖ Arrays Part III • Multidimensional Arrays • Two-dimensional arrays • Declaring 2D-Arrays • Printing 2D-Arrays • Reading 2D-Arrays • Processing 2D-Arrays
Week 4	❖ Arrays Part IV • Main diagonal • Above the main diagonal • Below the main diagonal • Anti diagonal • Ragged Array
Week 5	❖ String Part I • Strings • Declaring Strings • Strings Representation • Reading a String from the Console • String Concatenation
Week 6	❖ String Part II • String Methods • Comparing Strings • Converting Characters and Numeric Values to Strings
Week 7	❖ String Part III ▪ Replace and Split ▪ The StringBuilder and StringBuffer Classes ▪ Escape Characters
Week 8	**Exam**
Week 9	❖ Methods Part I ▪ Methods ▪ Why User-Defined Methods are useful ▪ Calling A Method
Week 10	❖ Methods Part II • Void Methods Boolean Methods • Recursion • Overloading of Methods

	• Local Variables • Global Variables
Week 11	❖ Files Part I • File I/O • Input Files • Output Files
Week 12	❖ Files Part II • Input Streams • Output Streams
Week 13	❖ Files Part III • Binary Files • Text Files
Week 14	Review
Week 15	Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to arrays
Week 2	Lab 2: Processing 1D-Arrays.
Week 3	Lab 3: Processing 2D-Arrays.
Week 4	Lab 4: Introduction to Strings
Week 5	Lab 5: String Processing
Week 6	Lab 6: String Processing
Week 7	Lab 7: Methods
Week 8	Lab 8: Exam
Week 9	Lab 9: Void Methods and Boolean Methods
Week 10	Lab 10: Recursion Technique
Week 11	Lab 11: Overloading of Methods
Week 12	Lab 12: Introduction to Files
Week 13	Lab 13: Processing files
Week 14	Lab 14: Review
Week 15	Lab 15: Exam

Learning and Teaching Resources ادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Java an introduction to problem solving and programming, Walter Savitch , 6th edition, Pearson Education, Ltd., 2019	Yes
Recommended Texts	Java How to Program, Deitel T. R. Nieto, 9th Edition, 2012, Prentice Hall.	Yes
Websites	W3Schools Online Web Tutorials	

Grading Scheme ظ الدرجات				
Group	**Grade**	لاتقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	ماتياز	90 - 100	Outstanding Performance
	B - Very Good	د جدا	80 - 89	Above average with some errors
	C - Good	د	70 - 79	Sound work with notable errors
	D - Satisfactory	تموسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	بول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	ب (قالمعالجة)	(45-49)	More work required but credit awarded
	F – Fail	ب	(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.