

# Computer Programming (I) FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>Computer Programming (I)</b>		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>UOMU0302012</b>		
ECTS Credits	6		
SWL (hr/sem)	<b>150</b>		
Module Level	1	Semester of Delivery	
Administering Department	الأنظمة الطبية الذكية	College	العلوم
Module Leader	م.د ميثم نبيل مقداد	e-mail	<a href="mailto:maytham.meqdad@uomus.edu.iq">maytham.meqdad@uomus.edu.iq</a>
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	م.د ميثم نبيل مقداد	e-mail	<a href="mailto:maytham.meqdad@uomus.edu.iq">maytham.meqdad@uomus.edu.iq</a>
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Scientific Committee Approval Date	01/10/2025	Version Number	2.0

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

	<ol style="list-style-type: none"> <li>1. To Introduce students to the fundamental concepts of computer programming.</li> <li>2. To develop problem solving skills and understanding.</li> <li>3. To develop the ability to express algorithms in individual steps, and encode these steps in a programming language.</li> <li>4. To study the Java programming language as practical tools for software implementation.</li> <li>5. Demonstrate how to resolve typical problems.</li> <li>6. To familiarize students with good program design, correct coding, and practice debugging (error correcting) techniques.</li> </ol>
<b>Module Learning Outcomes</b>  مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> <li>1. Be able to define and list the various terms associated with algorithms, flowcharts, and computer programming languages.</li> <li>2. Be able to analyze a given problem and to translate simple algorithms into simple steps.</li> <li>3. Be able to present the syntax and semantics of the programming language as well as basic data types, offered by the language.</li> <li>4. Be able to describe the correct usage of some high-level programming constructs: input/output commands, repetition/iterative statements, and conditional/selective statements.</li> <li>5. Be able to write, examine, test, and evaluate the operation of computer programs.</li> </ol>
<b>Indicative Contents</b>  المحتويات الإرشادية	<ul style="list-style-type: none"> <li>- Introduction to algorithms.</li> <li>- Introduction to flowcharts.</li> <li>- The fundamental concepts of computer programming.</li> <li>- Basic computations.</li> <li>- Introduction to Java programming languages as practical tools for software implementation.</li> <li>- The Input and output operations.</li> <li>- Branching and Selection structures.</li> <li>- Looping and iteration structures.</li> </ul>

<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	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.
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<b>Student Workload (SWL)</b> الحمل الدراسي للطالب			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعياً	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعياً	6
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	150		

<b>Module Evaluation</b> تقييم المادة الدراسية					
		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	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
<b>Summative assessment</b>	Midterm Exam	3 hr	30% (30)	7	LO # 2, 3, and 4
	Final Exam	3 hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
<b>Week 1</b>	Introduction to algorithms.
<b>Week 2</b>	Introduction to flowcharts.
<b>Week 3</b>	The fundamental concepts of computer programming, Structured Programming, Program Errors .
<b>Week 4</b>	Basic Computation <ul style="list-style-type: none"> <li>• Data Types</li> <li>• Characters</li> <li>• Strings</li> <li>• Reserved Words</li> </ul>
<b>Week 5</b>	❖ Basic Computation Part II <ul style="list-style-type: none"> <li>• Identifiers</li> <li>• Variables</li> <li>• Initializing Variables</li> <li>• Naming Conventions</li> <li>• Constant Variables</li> </ul>
<b>Week 6</b>	❖ Basic Computation Part III <ul style="list-style-type: none"> <li>• Arithmetic Operators</li> <li>• Expressions</li> <li>• The Precedence of Arithmetic Operators</li> <li>• Evaluating Expressions and Operator Precedence, Assignment Statement</li> <li>• Type Casting</li> <li>• The Math Class – Library Functions</li> </ul>
<b>Week 7</b>	❖ Input and output Basics Part I <ul style="list-style-type: none"> <li>▪ The print() and println() Methods</li> <li>▪ Java User Input (Scanner)</li> <li>▪ Scanner Methods for Java User Input</li> <li>▪ Scanner Methods</li> </ul>
<b>Week 8</b>	Exam.
<b>Week 9</b>	❖ Input and output Basics Part II <ul style="list-style-type: none"> <li>▪ Java User Input (swing)</li> <li>▪ Multiline Output in a Dialog Window</li> </ul>
<b>Week 10</b>	❖ Branching and Selection Part I <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Relational Operators</li> <li>• Logical Operators</li> <li>• The if Statement</li> <li>• The if-else Statement</li> </ul>
<b>Week 11</b>	❖ Branching and Selection Part II <ul style="list-style-type: none"> <li>• Nest if-else statements</li> <li>• Conditional Operator (?:) - Concise if - else statement</li> <li>• Common Errors</li> </ul>

	<ul style="list-style-type: none"> <li>• Avoiding Duplicate Code in Different Cases</li> <li>• The switch-case Statement</li> <li>• Common Programming Error</li> </ul>
<b>Week 12</b>	<ul style="list-style-type: none"> <li>❖ Looping And Iteration Part I <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Counters</li> <li>• Accumulators</li> <li>• The for Statement</li> </ul> </li> </ul>
<b>Week 13</b>	<ul style="list-style-type: none"> <li>❖ Looping and Iteration Part II <ul style="list-style-type: none"> <li>• The while Statement</li> <li>• The do-while Statement</li> </ul> </li> </ul>
<b>Week 14</b>	<ul style="list-style-type: none"> <li>❖ Looping and Iteration Part III <ul style="list-style-type: none"> <li>• Nested Loops</li> <li>• The break Statement</li> <li>• The flag Controlled Loops</li> </ul> </li> </ul>
<b>Week 15</b>	<b>Second Test (Theoretical and Practical)</b>

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
<b>Week 1</b>	Lab 1: Introduction to computers and Java
<b>Week 2</b>	Lab 2: Setting Java in Windows , Java Program Structure , A Sample Java Program , Structured Programming
<b>Week 3</b>	Lab 3: Writing simple programs.
<b>Week 4</b>	Lab 4: Data Types, Characters , Strings, Reserved Words Input and output
<b>Week 5</b>	Lab 5: Identifiers, Variables, Initializing Variables, Naming Conventions, Constant Variables
<b>Week 6</b>	Lab 6: Arithmetic Operators, Expressions, The Precedence of Arithmetic Operators, Evaluating Expressions and Operator Precedence, Assignment Statement , Type Casting , The Math Class – Library Functions
<b>Week 7</b>	Lab 7: Input and output Basics
<b>Week 8</b>	Lab 8: Exam
<b>Week 9</b>	Lab 9: Input and output Basics
<b>Week 10</b>	Lab 10: Branching and Selection
<b>Week 11</b>	Lab 11: Branching and Selection
<b>Week 12</b>	Lab 12: Looping and Iteration
<b>Week 13</b>	Lab 13: Looping and Iteration
<b>Week 14</b>	Lab 14: Review
<b>Week 15</b>	Lab 15: Exam



## Learning and Teaching Resources

### مصادر التعلم والتدريس

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

## Grading Scheme

### مخطط الدرجات

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