

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Computational Thinking for Problem Solving		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CS102		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	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	01/06/2023	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

<b>Module Aims</b> أهداف المادة الدراسية	<ol style="list-style-type: none"><li>1. Develop computational thinking skills.</li><li>2. Enhance problem-solving abilities.</li><li>3. Foster logical and analytical thinking.</li><li>4. Promote algorithmic reasoning and design.</li><li>5. Cultivate creativity and innovation in problem solving.</li></ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"><li>1. Apply computational thinking techniques to analyze and solve problems.</li><li>2. Utilize algorithms and logical reasoning to develop efficient solutions.</li><li>3. Demonstrate proficiency in problem decomposition and pattern recognition.</li><li>4. Employ abstraction and generalization to model and solve complex problems.</li><li>5. Cultivate critical thinking and creativity in problem-solving approaches.</li><li>6. Communicate and collaborate effectively in problem-solving scenarios.</li></ol>
<b>Indicative Contents</b> المحتويات الإرشادية	<p>Indicative content includes the following.</p> <ol style="list-style-type: none"><li>1. Basics Introduction: number systems, data encoding.</li><li>2. Problem Solving: Problem definition, decomposition, abstraction.</li><li>3. Algorithmic Thinking: Flowcharting, selection, repetition.</li><li>4. Data organization: Lists, arrays, modularization.</li><li>5. Problem Solving Techniques: Factoring, recursion.</li></ol>

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	<ol style="list-style-type: none"><li>1. Engage students through interactive lectures and discussions.</li><li>2. Utilize hands-on coding exercises and projects to apply computational thinking concepts.</li><li>3. Provide real-world examples and case studies to demonstrate the practical application of problem-solving techniques.</li><li>4. Foster collaborative learning through group activities and problem-solving challenges.</li><li>5. Offer opportunities for self-paced learning and practice through online resources and coding platforms.</li><li>6. Provide timely feedback and guidance to support students' progress and improvement in problem-solving skills.</li></ol>
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