MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

<table>
<tr><td colspan="4" align="center">Module Information
معلومات المادة الدراسية</td></tr>
<tr><td>Module Title</td><td>Computational Thinking for Problem Solving</td><td colspan="2">Module Delivery</td></tr>
<tr><td>Module Type</td><td align="center">Core</td><td colspan="2" rowspan="4">☒ Theory
☒ Lecture
☐ Lab
☐ Tutorial
☒ Practical
☐ Seminar</td></tr>
<tr><td>Module Code</td><td align="center">CS102</td></tr>
<tr><td>ECTS Credits</td><td align="center">5</td></tr>
<tr><td>SWL (hr/sem)</td><td align="center">125</td></tr>
<tr><td>Module Level</td><td align="center">1</td><td>Semester of Delivery</td><td align="center">1</td></tr>
<tr><td>Administering Department</td><td>Type Dept. Code</td><td>College</td><td>Type College Code</td></tr>
<tr><td>Module Leader</td><td>Name</td><td>e-mail</td><td>E-mail</td></tr>
<tr><td>Module Leader's Acad. Title</td><td>Professor</td><td>Module Leader's Qualification</td><td>Ph.D.</td></tr>
<tr><td>Module Tutor</td><td>Name (if available)</td><td>e-mail</td><td>E-mail</td></tr>
<tr><td>Peer Reviewer Name</td><td>Name</td><td>e-mail</td><td>E-mail</td></tr>
<tr><td>Scientific Committee Approval Date</td><td>01/06/2023</td><td>Version Number</td><td>1.0</td></tr>
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<tr><td colspan="4" align="center">Relation with other Modules
العلاقة مع المواد الدراسية الأخرى</td></tr>
<tr><td>Prerequisite module</td><td>None</td><td>Semester</td><td></td></tr>
<tr><td>Co-requisites module</td><td>None</td><td>Semester</td><td></td></tr>
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Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Develop computational thinking skills. 2. Enhance problem-solving abilities. 3. Foster logical and analytical thinking. 4. Promote algorithmic reasoning and design. 5. Cultivate creativity and innovation in problem solving.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Apply computational thinking techniques to analyze and solve problems. 2. Utilize algorithms and logical reasoning to develop efficient solutions. 3. Demonstrate proficiency in problem decomposition and pattern recognition. 4. Employ abstraction and generalization to model and solve complex problems. 5. Cultivate critical thinking and creativity in problem-solving approaches. 6. Communicate and collaborate effectively in problem-solving scenarios.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. Basics Introduction: number systems, data encoding. 2. Problem Solving: Problem definition, decomposition, abstraction. 3. Algorithmic Thinking: Flowcharting, selection, repetition. 4. Data organization: Lists, arrays, modularization. 5. Problem Solving Techniques: Factoring, recursion.

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	1. Engage students through interactive lectures and discussions. 2. Utilize hands-on coding exercises and projects to apply computational thinking concepts. 3. Provide real-world examples and case studies to demonstrate the practical application of problem-solving techniques. 4. Foster collaborative learning through group activities and problem-solving challenges. 5. Offer opportunities for self-paced learning and practice through online resources and coding platforms. 6. Provide timely feedback and guidance to support students' progress and improvement in problem-solving skills.