MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Discrete Structures**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code					
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
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	
Module Aims أهداف المادة الدراسية	1. We can develop our mathematical ability 2. Discrete mathematic is the gateway to more advanced courses in all part of math. 3. Discrete mathematics provides the math foundations for many computer science courses 4. Discrete mathematics contains the necessary math back ground for solving problems in operation research, chemistry, and engineering.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	6. formulate solutions for selected mathematical problem 7. Apply objective mathematical reasoning to systems composed of discrete objects. 8. Assess mathematical proofs. 9. Interpret situations that have a predetermined sequence of actions that depend on a limited sequence of events. 10. categorize all possible outcomes for a series of events, or all possible collections of a set of objects; 11. diagram hierarchical relationships between individual entities within a given situation using relations; and 12. Diagram hierarchical relationships between individual entities within a given situation using function. 13. apply Trees of mathematical or system entities as tools in computer science to solve various real-world problems; and 14. Apply Graph of mathematical or system entities as tools in computer science to solve various real-world problems.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Sets, Types of set, Operations on sets, Set identities, Computer Representation of Sets (multi-sets, fuzzy sets), Sequences and Summations. [12 hrs] Properties of Integers and Applications of Number Theory, Propositional and Logical Operations, Conditional Statements. [6 hrs] Mathematical reasoning and Induction, Recursive, Mathematical proofs: Methods of Proving Theorems. [12 hrs] Properties of Relations, Operations Relations, Computer Representation of Relations, Functions, Properties of Functions, Functions types. [12 hrs] Trees, Types of trees, Trees as Models, Properties of Trees, Tree Traversal, Universal Address Systems , Traversal Algorithms, Infix, Prefix, and Postfix Notation of tree. [15 hrs] Graph, Types of graphs, Some Special Simple Graphs, Representing Graphs, Isomorphism and Isomorphic of graphs. [12 hrs]