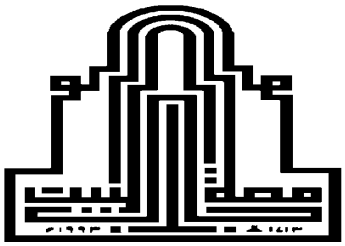

Computer Department
Prince Hussein bin Abdullah Faculty of Information Technology
Al al-Bayt University

Course Syllabus

Course Title	Discrete Mathematics	Course Code	0901200
Coordinator	Omar Shatnawi	Prerequisite(s)	Nil
E-mail	dromali@aabu.edu.jo	Credit Hours	3
Course Is	☐ Required	☐ Elective	

Course Description:

This course is an introduction to the formal mathematical concepts of computer science for the beginning student and covers a wide variety of diverse topics that serve as the mathematical framework for the design and analysis of algorithms. Topics include elementary logic, set theory and sequences, induction and recursion, permutations and combinations, probability theory, relations and functions, tree structures, and an introduction to graph theory and finite state machines.

Course Learning Outcomes (CLO):

By the end of this course the student is expected to be able to

- Describe and integrate basic definitions and theorems concerning sets, functions, and relations,
- Use mathematical tools of logic and induction,
- Show the application of these tools to computer science,
- Create and understand a formal proof,
- Use combinations and probability theory required in the design and analysis of algorithms, and
- Create state and transition diagrams.

Tentative Topics Covered

Week No.	Topic
1	Sets & Sequences
2	Division in the Integer & Matrices
3	Propositions & Logical Operations
4	Conditional Statements & Methods of Proof
5	Mathematical Induction
6	Permutations & Combinations
7	Elements of Probability
8	Relations & Diagraphs
9	Equivalence Relations & Operations on Relations
10	Functions & Functions for Computer Science
11	Labeled, Searching & Minimal Spanning Trees
12	Euler & Hamiltonian Paths/Circuits
13	Finite State Machine
14	Experiments in Discrete Mathematics

Textbook(s)			
Title	**Discrete Mathematical Structures**		
Author(s)	**B. Kolman, RC. Busby and SC Ross**	**Publisher**	**Prentice Hall**
Edition	**6th Edition**	**Year**	**2008**

References	
Book Titles (Author(s), Title, Edition, Publisher, Year)	**Website URL (if available)**

Evaluation	
Assessment Tool	**Marks**
- First Exam*	20
- Second Exam*	20
- Assignments (Reports, Quiz, Seminar, Tutorial, etc.) **- Discipline, presence and participation**	10
- Lab**	0
- Final Examination	50