

CCS1001 Discrete Structures

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
CCS1101	1	2	2	2	0	3

COURSE AIM

- Use logic to determine the validity of an argument.
- Construct the proof of a theorem.
- Use combinatorial techniques when needed in solving problems.
- Identify functions; specifically, surjective, injective, and bijective functions.
- Identify relations; specifically, a partial order, equivalence, and total order relations.
- Understand the terminology and concepts of elementary graph theory.

COURSE WEEKLY CONTENTS

- 1 Introduction and Logic form and logical equivalence
- 2 Conditional statements
- 3 Valid and invalid arguments
- 4 Predicates and quantified statements
- 5 Arguments with quantified statements
- 6 Methods of proof: Direct proof and counterexample part 1
- 7 Methods of proof: Direct proof and counterexample part 2
- 8 Methods of proof: Contraposition and contradiction
- 9 Sequences and mathematical induction
- 10 Counting part 1
- 11 Counting part 2
- 12 Functions
- 13 Composite Functions
- 14 Relations and elementary graph theory
- 15 Relations and elementary graph theory

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook Susanna Epp, Discrete Mathematics with Applications, Thomson Learning.