Title: Introduction to Sets and Structures

Textbook: Mathematical Proofs, A transition to Advanced Mathematics (3rd edition: International Edition) by Gary Chartrand et al., Pearson 2014.

Description: Elementary logic. Methods of proof. Set theory. Relations and functions. Finite and infinite sets. Equivalence relations and congruence. Divisibility and the fundamental theorem of arithmetic. Well-ordering and axiom of choice. Groups, subgroups, symmetric groups, cyclic groups and order of an element, isomorphisms, cosets and Lagrange's Theorem.

Grading Policy:

First Major	Second Major	Homework	Projects/Presentations	Final Exam
20%	20%	10%	15%	35%

Syllabus

Chapter	Title	Week(s)
1	Logic	2
2	Sets	1
3	Direct Proof and Proof by Contrapositive	1
4	More on Direct Proof and Proof by Contrapositive	1
5	Existence and Proof by Contradiction	1
6	Mathematical Induction	1
8	Equivalence Relations	2
9	Functions	1
10	Cardinalities of Sets	2
11	Proofs in Number Theory	1
13	Proofs in Group Theory	2

Exams

Material of First Major Exam	Chap: 1,2, 3, 4
Material of Second Major Exam	Chap: 5, 6, 8,9
Final Exam (Comprehensive)	Tuesday, May 19, 2015, 12:30 -15:30 PM