MATH215C : Mathematical Proofs

Introduces students to reading and writing mathematical proofs. Topics include sets and logic, methods of proof, equivalence relations, functions, and cardinality, and topics from number theory and calculus.
Credits 4
Lab/Practicum/Clinical Hours 0
Lecture Hours 4
Prerequisites
Students must pass all prerequisite courses with a grade of C or higher.
MATH205C
Learning Outcomes

- State, interpret, and apply the definitions, theorems, and properties involving sets, divisibility, congruence, the algebra of real numbers, equivalence relations, functions, and cardinality. Communicate mathematical reasoning using appropriate mathematical vocabulary.
- Use logic and methods of proof, including direct proof, proof by contrapositive, proof by cases, proof by contradiction, existence proof, and induction proof, to produce valid mathematical proofs.
- Assess mathematical reasoning, both correct and flawed.
- Generate conjectures and determine their truth value, providing counterexamples or proofs as appropriate.
- Draw Venn diagrams to indicate set operations and to aid in the construction of proofs.