

## MATH104 Mathematical Reasoning and Problem Solving Syllabus

### *Mathematical Reasoning*

- Mathematical language and symbols.
- Definitions.
- Theorems: hypothesis and conclusion, converse and contrapositive.
- Proofs: direct proof and proof by contradiction.
- Examples and counterexamples.
- Quantifiers and negation.

### *Problem Solving*

- Problem solving strategies.
- Teamwork strategies.
- Review of problem-specific mathematical techniques.
- Critical evaluation of problem solutions and models.
- Criteria for self-assessment.

### *Assessment:*

- 45% from the January exam (Mathematical Reasoning).
- 55% Continuously Assessed (50% Problem Solving, 5% Mathematical Reasoning homeworks).