Chapter 1

Introduction

1.1 What is this course about?

- The precise art of **formal reasoning**

- **Propositional logic** as the scaffolding of reasoning

- Foundational issues: **classical** vs **intuitionistic** logic

- Express yourself precisely using the language of **predicate logic**

- Proof techniques: reasoning by cases, proof by **induction**

- **Algebra**: reasoning with equality

- Use a proof assistant (**COQ**) to formalize proofs

- Reasoning about **programs and data structures**