

MATH 3Q03 - Numerical Methods

Sang Woo Park

January 4, 2017

Course Outline

- Website: <https://ms.mcmaster.ca/~bprotas/MATH3Q03/>
- Textbook: *Numerical Mathematics*
- Supplemental references: *Approximation Theory and Approximation Practice*
- Five assignments

Contents

1	Introduction and Review	2
2	Interpolation	2
3	Approximation	2
4	Numerical Differentiation and Integration	2
5	Special Topics	2

1 Introduction and Review

Definition 1.1 (Numerical analysis). *Numerical analysis is a branch of applied mathematics, studying computational algorithms to solve problems in calculus and analysis (e.g., differentiation, integration, etc.). It focuses on the transforming continuous (infinite dimensional) problems to finite dimensional representations.*

Definition 1.2 (Scientific computing).

2 Interpolation

3 Approximation

4 Numerical Differentiation and Integration

5 Special Topics