MATH 105 Section 951 - Integral Calculus with Applications to Commerce and Social Sciences

2018S2, July-August, 2018

Instructor: Dr. Fei Hu

Email: fhu@math.ubc.ca

Time: Mon Thu Fri 1-3pm, Wed 1-2pm

Location: Buchanan (BUCH) A201

Office hours: Wed 2-4pm in my office (located at ESB, Room 4134) or by an appointment

Course website: Canvas or my Homepage

Midterm: There is one midterm (in class) that will be held on July 20 (Friday), 2018.

Final exam: TBA


Marking Scheme:
Final exam 50%, Midterm 30%, WeBWorK (online) 15%, Clicker session 5%

Course outline:

We will mostly focus on the first 4 chapters of the textbook, that is, Chapter 5 (Integration), Chapter 7 (Integration Techniques), Chapter 8 (Sequences and Infinite Series) and Chapter 9 (Power Series). Some applications (e.g. some probability theory) will be provided.

Here is a rough (tentative) course schedule.

- Week 1: Introduction of Integrals
  - Definition of the integral and its properties
  - Fundamental Theorem of Calculus
  - Areas and volumes
– Integration by substitution

- Week 2: Integration Techniques
  – Integration by parts
  – Trigonometric stuffs
  – Partial fractions
  – Improper integrals

- Week 3: Applications
  – Volume of solids of revolution
  – Separable differential equations
  – Probability

- Week 4: Sequences and Infinite Series
  – Definitions
  – Various tests

- Week 5: Power Series
  – Properties of power series
  – Taylor series and approximation of functions
  – Application of Taylor series

- Week 6: More Applications