

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

Textbook: *Calculus: Early Transcendentals, Volume 2*. Fourth custom edition for UBC, by Briggs, Cochran and Gillett. The textbook is available at the UBC Bookstore.
ISBN 10 digit: 1269921924 ISBN 13 digit: 978-1269921923.

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