

# Math 105, 2018W Term 2

## Integral Calculus with Applications to Commerce and Social Sciences

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### Course information

This is the common page for all sections of MATH 105 in Term 2 of the 2018W session (January to April 2019). Here you will find the course outline, suggested homework and practice problems, course policies, exam dates, common handouts and supplementary notes, other course information, and information on available resources. For section-specific information, please follow the individual section links below or contact your instructor.

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### Individual sections

- [Section 201](#) M-W-F 8-9am LSK 200 (Instructor: Wang, J. )
  - The webpage for section 202 is on Canvas, M-W-F 9-10am GEOG 200 (Instructor: Laurent Charette )
  - [Section 203](#) M-W-F 9-10am MATH 100 (Instructor: K. Liu )
  - [Section 204](#) M-W-F 4-5pm LSK 201 (Instructor: Lee, M.-C. )
  - [Section 205](#) M-W-F 12pm-1pm CHEM B150 (Instructor: K. Liu)
  - [Section 207](#) M-W-F 8-9am MATX 1100 (Instructor: Yang, T. )
  - The webpage for section 208 is on Canvas, Tu-Th 2-3:30pm MATH 100 (Instructor: Elyse Yeager)
  - [Section 209](#) Tu-Th 2-3:30pm MATX 1100 (Instructor: Doering, M. )
  - [Section 211](#) M-W-F 4-5 pm MATX 1100 (Instructor: Marjan Zare)
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### Text

The required textbook for this course is *Calculus: Early Transcendentals*, Volume 2. Fourth custom edition for UBC, by Briggs and Cochran. The textbook is available at the UBC Bookstore. ISBN 10 digit: 1269921924. ISBN 13 digit: 9781269921923.

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### Grading Schemes

Your grade will be computed based on the following formula:

- Final Exam 50%
  - 2 midterms  $17\% + 17\% = 34\%$
  - Course-common WebWorks assignments 10%
  - Other section-specific coursework (to be decided by your instructor) 6%
  - A student must get at least 40% on the final exam to pass this course. A student who gets less than 40% on the final exam and whose grade computed by the grading scheme would be a passing grade shall receive a final grade of 48%."
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## Math 105 Webwork site link

**Students need to access Webwork through Canvas.** To access WebWork, you should login to Canvas and click on 'Assignments' tab in the MATH105 Dashboard.

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## Exam Dates and Policies

- **THE FINAL EXAM** for this course will be common to all sections of MATH 105. The exam will take place in April at a date to be announced. **Please do not make end-of-term travel plans before this date has been released.** The final examination is board marked (i.e. all instructors teaching this course mark the exams together) to ensure consistency and fairness across sections.
- **THE MIDTERM EXAMS** for this course will be common to all sections of MATH 105. There will be two midterms in MATH 105. The midterm examinations are board marked (i.e. all instructors teaching this course mark the exams together) to ensure consistency and fairness across sections. The duration of each midterm will be 60 minutes.
- Midterms are non-cumulative, but the final exam is based on the entire syllabus for the course.
- **Grade calculation:** The mark distribution of the term work of each section may be scaled based on the final exam mark distribution of that section. These adjusted term marks will then be used to compute a student's final grade. Any scaling is performed to ensure fairness in the final grades across sections. It is not expected that such scalings would result in significant grade changes.
- **Exam aids:** No unauthorized electronic devices will be allowed in the midterms or in the final exam. This includes calculators, cell phones, music players and all communication devices. Students should not bring their own formula sheets or other memory aids. Common formula sheets may be provided to all students depending on the material covered, in which case the content of the formula sheet will be disclosed in class prior to the exam.
- **Missing midterms:** If a student misses a midterm, that student shall provide a documented excuse or a mark of zero will be entered for that midterm. Examples of valid excuses are an illness which has been documented by a physician or Student Health Services, or an absence to play a varsity sport (your coach will provide you with a letter). **There will be no make-up midterms, and the weight of the missed midterm will be**

**transferred to the final examination. To be eligible for this arrangement, you must notify your instructor of your failure to take the test within a week of the missed midterm, and come up with a timeline acceptable to both for producing appropriate documentation for your absence.** Please note that a student may NOT have 100% of their assessment based on the final examination. A student who has not completed a substantial portion of the term work normally shall not be admitted to the final examination.

- **Missing the Final Exam:** You will need to present your situation to your faculty's Advising Office to be considered for a deferred exam. Your performance in a course up to the exam is taken into consideration in granting a deferred exam status (for instance, failing badly normally means you will not be granted a deferred exam). For deferred exams in mathematics, students generally sit the next available exam for the course they are taking, which could be several months after the original exam was scheduled.
  - **Please bring your student ID to both midterms and the final.**
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## Coursework Policies

- The work that accounts for the remaining 6% of your coursework grade will be decided by your instructor and may vary from one section to another. This is based on various factors such as lecture times, class size etc.
  - In addition to WebWork problems, a list of suggested practice problems is given at the end of this webpage. These are not to be turned in and will not be graded. It is however strongly recommended that you work through these problem sets as they are based on the syllabus for this course, and therefore omit problems that may be in the text but are unrelated to the course material. They also accurately reflect in terms of content and level of difficulty the problems you will encounter in midterms and the final.
  - **Late Assignments:** WebWork will automatically close at a previously announced time specified by the instructor, so it is important to finalize and submit your work by that deadline. It will not be possible to obtain extensions on WebWork assignments.
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## Academic misconduct

- UBC takes cheating incidents very seriously. After due investigation, students found guilty of cheating on tests and examinations are usually given a final grade of 0 in the course and suspended from UBC for one year.
  - Note that academic misconduct includes misrepresenting a medical excuse or other personal situation for the purposes of postponing an examination or quiz or otherwise obtaining an academic concession.
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## Help outside class

- Each instructor will hold a few (2-3) office hours per week for students in his/her section. See section website for more details.
  - Drop-in Tutorials: There is a drop-in tutorial centre whose operating schedule and venue for this semester will be posted. The tutorial centre typically starts from the second week of classes. Graduate student TAs are there to help you during specified times.
  - The AMS offers tutoring services.
  - **First year can be an overwhelming experience for many students. If you find yourself having serious academic difficulties in this course, it is best to talk to your instructor as soon as you can.**
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## Course Outline

- The course is divided into three parts. Roughly speaking, we will cover multivariable calculus (Chapter 12) and start on integration (Chapter 5) before the first midterm. We will complete the theory of integration (Chapter 5) and integration techniques (Chapter 7), followed by a week's worth of probability before the second midterm. The rest of the time will be devoted to discussing sequences and series (Chapters 8 and 9).
- Here is a week-by-week schedule of course material based on the appropriate sections of the text. The chapter and section numbers are from the second custom edition of the textbook. Follow the links for each week to get a more detailed description of the concepts covered that week, and for the learning objectives that you should use as self-checks.
  - Week 1 Functions of several variables (Chapter 12)
    - Planes and surfaces (12.1)
    - Graphs and level curves (12.2)
  - Week 2 Functions of several variables (Chapter 12)
    - Partial derivatives (12.4)
    - Maximum/minimum problems (12.8)
  - Week 3 Functions of several variables (Chapter 12)
    - Maximum/minimum problems (12.8)
    - Lagrange multipliers (12.9)
  - Week 4 Integration (Chapter 5)
    - Approximating areas under curves (5.1)
    - Definite integrals (5.2)
  - Week 5 Integration (I)(Chapter 5)
    - Fundamental theorem of calculus (5.3)
    - Substitution rule (5.5)
  - Week 6 Integration (II) (Chapter 5)
    - Integration by parts (7.2)
  - Week 7 Integration techniques (Chapter 7)
    - Trigonometric Integrals (7.3)
    - Trigonometric substitutions (7.4)

- Partial fractions (7.5)
  - Week 8 Integration techniques (Chapter 7)
    - Numerical integration (7.7)
    - Improper integrals (7.8)
    - Introduction to differential equations (7.9)
  - Week 9 Probability (Probability Appendix)
    - Continuous random variable ( 2.1 and 2.2 in Probability Appendix)
    - Expected Value, Variance, and Standard Deviation (2.5 and 2.6 in Probability Appendix)
  - Week 10 Sequences and infinite series (Chapter 8)
    - Sequences (8.1-8.2)
    - Infinite series (8.3)
    - The divergence and integral tests (8.4)
  - Week 11 Series (Chapter 8) and Power series (Chapter 9)
    - The ratio and comparison tests (8.5).
    - Approximating functions with polynomials (9.1)
    - Properties of power series (9.2)
  - Week 12 Power series (Chapter 9) and review
    - Taylor series (9.3)
    - Working with Taylor series (9.4)
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