

MA 202: Integral Calculus

Winter 2016-17

Instructor: Sarah Brewer

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Office: S201

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Course web site: <http://www.brewermath.com>

Office Hours: 7th period MonTuesWedFri; 2nd period Thurs; 3:45 Wed

Math Lab (free tutoring): Monday-Thursday 7:00-9:00pm in S201

Khan Academy Coach Code: NBF94

Course Description: This introduction to the theory, techniques, and applications of integral calculus includes indefinite and definite integrals, area, volume, work, fluid force, derivatives and integrals related to exponential, logarithmic, trigonometric and inverse trigonometric functions, and integration techniques.

Prerequisite: 'B' or better in Differential Calculus or permission of the department.

Text: Larson, Hostetler & Edwards, *Calculus, 7th Edition*, Houghton Mifflin & Co.

Coverage: 3.9-4.5, 5.1-5.5, 5.9, 6.1-6.2, 6.4, 7.1-7.5; time permitting: 5.7, 5.10, 6.5-6.7

Grade determination:

Quizzes (~weekly) ~10x20 points each

Tests 3x100 points each

Final Exam 1x200 points

Homework will be assigned daily, both from the textbook and online at Khan Academy. No grades will be given for homework, but your understanding of course content is dependent on homework completion. Because homework problems may appear on quizzes or tests, students are encouraged to complete homework early and attend math lab to make sure they know how to work all problems.

Quizzes will be given approximately weekly and will be a combination of theory memorization (rules, definitions, and formulas) and problems similar to homework. Quizzes can occur any day of the week and may be announced or unannounced. There will be no make-up quizzes. If you miss a quiz with an excused absence, you will have fewer total possible points. Quizzes missed due to unexcused absences will receive a grade of 0.

Tests will consist primarily of material covered since the prior test, but will also include some review questions.

The final exam will be comprehensive. None that there is not a "dropped" test.

Tentative test dates: Week 3, Week 6, Week 10

Make-up policy: Any quizzes or tests missed due to unexcused absences will receive a grade of zero. There will be NO make-up quizzes. Homework assigned during a student's absence must be turned in when the student returns to class. All assignments can be found on my web site calendar. Arrangements to make-up tests must be done BEFORE the test is missed. In case of unexpected illness, this can be done via email.

Note: make-up assignments will, in general, be more difficult than the original.

Cell phone policy: Phones should be SILENT (not on vibrate) and away. I reserve the right to confiscate any phone that I deem a distraction. Use of cell phones during quizzes or tests will result in a grade of zero.

Attendance and Tardiness Policy: Three tardies count as one unexcused absence. A student with three unexcused absences may be assigned a grade of WF for the course. Students are responsible for acquiring any missed notes and assignments (as these are posted on the web, this should not be a problem).

Integral Calculus Winter 2016-17 Tentative Schedule

Week 1 – Nov 7-11

- 3.9 Differentials
- 4.1 Antiderivatives and Indefinite Integration

Week 2 – Nov 14-18

- 4.2 Area
- 4.3 Riemann Sums and Definite Integrals

Week 3 – Nov 28-Dec 2

- **Test #1**
- 4.4 The Fundamental Theorem of Calculus
- 4.5 Integration by Substitution

Week 4 – Dec 5-9

- 5.1,5.2 The Natural Logarithmic Function
- 5.2,5.3 Logs and Inverse Functions
- 5.4,5.5 Exponential Functions

Week 5 – Dec 12-16

- 5.9 Inverse Trigonometric Functions
- 6.1 Area between curves

Week 6 – Jan 5-6

- **Test #2**
- 6.2 Volume: Disk Method

Week 7 – Jan 9-13

- 6.4 Arc Length and Surfaces of Revolution
- 7.1 Basic Integration Rules

Week 8 – Jan 17-20

- 7.2 Integration by Parts
- 7.3 Trigonometric Integrals

Week 9 – Jan 23-27

- 7.4 Trigonometric Substitution
- 7.5 Partial Fractions

Week 10 – Jan 30-Feb 3

- **Test #3**
- 5.7 Differential Equations: Separation of Variables
- 5.10, 6.5-6.6 Hyperbolic Functions, Physics Applications

Week 11 – Feb 13

- Review
- Final Exams - Feb 14-17