Math 141
Integrated Calculus

Instructor: Dr. Lesley Wiglesworth
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Office Hours: MWF 11:20 – 12:15, TTh 10:00 – 11:15, T 2:15 – 3:15
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Text: Taalman, Laura. *Integrated Calculus.* Houghton Mifflin, 2005. ISBN# 0-618-21950-1.
Lectures: MWF 1:50 – 2:50, Olin 129 (section b)
MWF 3:00 – 4:00, Olin 129 (section c)
Study Sessions: Sunday, Tuesday, Thursday from 8:00 – 9:00 pm in Olin 123 with Brian Bowles

Catalog Description of Course: A continuation of MAT 140, this course begins with an in-depth review of trigonometric functions and their derivatives. The majority of the course focuses on the definition of the integral, the Fundamental Theorem of Calculus, and applications of the integral. Prerequisite: MAT 140 or 141.

Grading Policy: Your grade will be based on your performance on tests, homework, participation, quizzes, and a final exam.

- Submitted problem sets 160 points
- Quizzes 135 points
- Exercise Presentations 20 points
- Projects 150 points
- In-class exams 315 points
- Final Exam 220 points

Grading Scale: Your final letter grade will be assigned according to the following scale. Do not assume that any rounding or curving will occur. *Note: These letter grade assignments are subject to change, but only in the direction beneficial to the students.*

- 90 and above A
- 88 – 90 A-
- 86 – 88 B+
- 80 – 86 B
- 78 – 80 B-
- 76 – 78 C+
- 70 – 76 C
- 68 – 70 C-
- 60 – 68 D
- Below 60 U

Missed Grade Policy: If you contact me by email or by phone concerning an anticipated missed grade due to an emergency and you provide documentation of the emergency soon after, then you will be given the opportunity to make-up your grade. In the event of an emergency so serious that you are prevented from contacting me prior to the grade, you will be allowed to make-up the grade after presenting the appropriate documentation. *Any other circumstance will result in a 0 grade.*

Expectations: To succeed, a student must attend all class meetings, be on time, and remain actively engaged in each class session. A student must spend time outside class studying the text and answering the suggested problems. Bring the textbook, paper, and a writing utensil to each class meeting. When asking questions, please be specific. You should take the time to identify your points of confusion to help

us make the best use of our time together. *Students should keep all graded work until after receiving a final grade in the course, in case of possible recording errors.*

Students are also expected to come to class properly dressed, on time, and alert. If you must come to class late or leave early, please sit by the door and let me know ahead of time. Students are expected to be courteous to others during class. Therefore, please avoid distracting behavior. Cell phones should either be turned off during class or not brought to class. Turning your phone to vibrate is not good enough—others (and I) can still hear it vibrate.

Submitted Problem Sets (160 points): Throughout the semester, you will have four problem sets that will be submitted. Written problems are expected to be legible and grammatically correct. Answers and assertions must be fully explained and justified. Your solutions must be clear, concise, and easy to follow. Problem sets will be graded on thoroughness, correctness, and clarity. Each of these assignments will be worth 40 points.

Quizzes (135 points): Quizzes provide an early assessment of a student's comprehension of the course material and help students prepare for tests. Quizzes will be given every week throughout the semester, except for test weeks. These quizzes will be given at the beginning of the class period and may cover any of the previous course material. However, they will be biased toward the most recent topics. *The lowest quiz score will be dropped when computing your final averages.* Each quiz will be worth 15 points. The following are the dates for the quizzes:

- Friday, February 6
- Wednesday, February 11
- Wednesday, February 18
- Wednesday, March 4
- Wednesday, March 11
- Wednesday, March 18
- Wednesday, April 8
- Wednesday, April 15
- Wednesday, April 22
- Wednesday, May 6

Exercise Presentations (20 points): The tentative schedule lists the sections that will be covered during the classes. You should read the assigned sections *before* coming to class. Suggested exercises are assigned from each section. Some problems will be presented by students at the board. Each student will be required to present at least two suggested exercises at the board during the semester. These presentations will be graded on clarity, posture, and explanation. Each presentation will be worth 10 points. You may present more than two times over the course of the semester. In this case, each presentation will be graded and the highest two grades will count towards your final class grade.

Class Participation: I expect all of my students to actively participate in every class. Active participation includes coming to class, asking and answering questions, working the suggested problems, and studying the notes and text. You class participation will be considered when your final course grade is assigned.

Class projects (150 points): During the term, you will work on three group projects. These projects provide you with an opportunity to apply your knowledge of calculus to some potentially interesting "real world" questions. You will submit hard copies of these projects to me and electronic copies to turnitin.com, the standard service used by the college for assessing the originality of student papers.

Tests (105 points each): Students will have 60 minutes for each of the three in-class tests. Tentative dates for the three tests are listed in the schedule. Each student will be allowed *exactly* one test re-do. It is up to the student which test he or she will re-do. For the test re-do, a student may earn up to 30% of the missed points. The test re-dos will be grade thoroughly.

Final Exam (200 points): The final exam is a 3-hour cumulative test. The final exam for Section b is scheduled for Friday, May 15th from 1:30 – 4:30pm. The final exam for Section c is scheduled for Monday, May 18th from 1:30 – 4:30pm.

Students with Disabilities: I encourage students with disabilities, including but not limited to disabilities such as chronic diseases, learning disabilities, and psychiatric disabilities, and students dealing with other exceptional circumstances to speak with Centre College's Assistant Dean for Student Advising, Mary Gulley, to obtain support services. I will happily abide by Dean Gulley's recommendations.

You should be reassured that Centre College is committed to making its programs accessible to all. In the higher education setting, the student is responsible for informing the college of disabilities that require accommodations and the student must initiate the process for obtaining appropriate accommodations immediately -- accommodations for disabilities cannot always be granted at the last minute and will not be granted after the fact. For further details concerning the academic aspects of disability services, see page 61 of the Centre College 2008 - 2009 Student Handbook.

Academic Honesty: The guiding principles are: honesty, trust, fairness, respect, and responsibility. Work on all exams must be your own. Collaboration on homework and suggested problems is encouraged and expected. You should spend time in individual concentration to gain the full benefit of the homework and suggested problems. Copying homework is discouraged. You should not leave a study group with your paper or your homework ready to be turned in; write up your homework by yourself. *On your homework, you must cite all resources (including people) that helped you solve the problems.* For further details concerning academic honesty, see pages 21 - 23 of the Centre College 2008 - 2009 Student Handbook.

My Weekly Schedule: I am usually in from 9:00 – 4:00 each day of the week. If my door is open, please feel free to stop by with an unscheduled visit. If you would like to be more formal, you may always schedule an appointment.

The instructor reserves the right to make changes in the syllabus when necessary to meet learning objectives, to compensate for missed classes, or for similar reasons. Any changes made will be announced during class.

Tentative Schedule

The following Math 141 paced syllabus is tentative. It is provided to give you an idea of the topics and approximate dates of exams. Changes, if necessary, will be announced in class.

Class	Date	Section	Topic	Homework and Suggested Problems
1	W Feb 4	Review	Review	
2	F Feb 6	6.1	The Algebra of Rational Functions	4, 5, 6, 8, 9, 14, 18, 31, 37, 39, 43, 48, 49
3	M Feb 9	6.2	Limits and Asymptotes of Rational Functions	23, 25, 27, 29, 33, 35, 37, 41, 42, 49, 56
4	W Feb 11	6.3	Derivatives of Rational Functions	5, 11, 18, 21, 23, 27, 29, 33, 35, 44, 47
5	F Feb 13	6.4	Graphs of Rational Functions	9, 13, 19, 23, 29, 35, 39
6	M Feb 16	8.1, 8.2	The Algebra of Exponential Function and the Natural Log	§8.1: 14, 16, 18, 30, 32, 33, 36 §8.2: 15 – 19, 30, 32, 34, 36, 39 – 42
7	W Feb 18	8.3, 8.4	Limits and Derivatives of Exponential Functions	§8.3: 29, 31, 35, 36, 43 §8.4: 16, 18, 24, 26, 28, 34, 35, 38
8	F Feb 20	8.5	Graphs of Exponential Functions	23 – 41 odd
9	M Feb 23	8.6	Applications of Exponential Functions	20, 21, 25, 30, 31, 33
10	W Feb 25			Test 1
11	F Feb 27	8.7	L'Hôpital's Rule	28 – 40 even, 44, 45, 48
12	M Mar 2	9.1	The Algebra of Logarithmic Functions	25 – 32, 36 – 39, 58 – 61
13	W Mar 4	9.2	Limits and Derivatives of Logarithmic Functions	16, 20, 22, 25, 26, 29, 30, 31, 32, 38, 42, 43
14	F Mar 6	9.3	Using Logarithms as a Calculational Tool	12, 17, 23, 24, 25, 27, 32, 37, 38, 42, 45

15	M Mar 9	10.1, 10.2	Right Triangle and Unit Circle Trigonometry	§10.1: 9, 26 – 29, 31, 35, 36 §10.2: 20-46 even
16	W Mar 11	10.2, 10.3	Unit Circle Trig and the Algebra of Trig Functions	§10.2: 56, 59, 61, 63, 64, 71,73,75 §10.3: 17, 21, 24, 27, 31 – 37 odd, 40, 42, 46, 47
17	F Mar 13	----	Solving Trig Equations	worksheet
18	M Mar 16	10.4	Limits of Trig Functions	22, 24, 26, 30, 31, 34, 36, 38, 40, 46, 48, 55
19	W Mar 18	10.5	Derivatives of Trig Functions	7 – 15 odd, 40, 41, 54, 55, 57, 70
20	F Mar 20	10.6	Graphs of Trig Functions	28, 29, 43, 44, 45, 51, 60, 68, 74, 77
Spring Break: No Class March 23 – 27				
21	M Mar 30	11.1	Defining the Inverse Trig Functions	41, 43, 46, 48, 51, 53, 56, 59
22	W Apr 1			Test 2
23	F Apr 3	12.1	Geometric Approximation and Sigma Notation	25, 26, 40, 42, 44, 46, 48, 50, 53, 55, 57
24	M Apr 6	12.2	Approximating the Area with Riemann Sums	1 – 5, 28 – 31, 35, 39, 40
25	W Apr 8	12.2/12.3	Riemann Sums and the Definite Integral	
26	F Apr 10	12.3	The Definite Integral	9 – 14, 26, 29, 30, 32, 34, 36 – 41
27	M Apr 13	12.4	Area and Average Value	47, 53, 54, 58, 59, 65, 67
28	W Apr 15	13.1	Indefinite Integrals	26, 27, 31 – 36, 53, 55, 58
29	F Apr 17	13.2	The Fundamental Theorem of Calculus	13, 14, 17, 20, 21, 25, 36, 37, 39, 41, 42, 43
30	M Apr 20	13.3	Functions Defined by Integrals	8, 9, 10, 11, 12, 35 – 38, 41 – 44
31	W Apr 22	14.1	Integration by Substitution	33, 34, 37 – 41

32	F Apr 24	14.1	Integration by Substitution	44, 45, 48 – 50, 54, 55, 57, 59, 61, 65, 80
33	M Apr 17	15.1	Arc Length	19, 21, 23, 25, 28, 31, 37, 40, 45, 47
34	W Apr 29			Test 3
35	F May 1	15.2	Volumes by Slicing	17, 18, 19, 20
36	M May 4	15.2	Volumes by Slicing	21, 31, 33, 35
37	W May 6	15.3	Volumes by Shells	27, 28
38	F May 8	15.3	Volumes by Shells	40, 41, 42
39	M May 10			Review
Final Exam: Section b: Friday, May 15th from 1:30 – 4:30pm Section c: Monday, May 18th from 1:30 – 4:30pm				