

Mathematics 133, Section 22 — Calculus II

Spring, 2009

Lecture: MWF 1:50–2:40 in B106 Wells Hall.

Recitation: Tuesdays 1:50–2:40 in C107 Wells Hall.

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Office hours: Monday 12–1, Tuesday 12–1,

Th 1:30–2:30; other times by appointment.

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Office hours: MW 3:30–4:30,
Thurs 2:30–3:30.

MLC hours: MW 11:30–12:20.

Textbook: *Thomas' Calculus*, 11th Ed. We will cover most of Chapters 6 - 11 (details below).

Web page: Supplemental material will be posted on the class web page

math.msu.edu/~parker/133.

Recitation Sections are opportunities to ask questions about homework problems and the material covered in lecture. Sometimes the TA will introduce new material. Hourly exams will be given in these sections, and there will be a short quiz given almost every week.

Evaluation: There will be four 50-minute Exams each worth 100 points each, ten announced Quizzes and two Gateway Exams worth a total of 100 points, and a 200-point uniform comprehensive Final Exam. Quiz 1 is worth 6 points. All other quizzes are 11 points; the two lowest of these will be dropped. Each Gateway is pass/fail and is worth 10 points. This gives a total of $6+77+20=103$ possible points on quizzes and gateways (so you get 3 free points). That's a total of 700 points for the course. Your total number of points will be converted into a percentage and your grade will be determined by the following grading scale:

| | | | |
|------------|-----|-----------|-----|
| 90 — 100 % | 4.0 | 65 — 72 % | 2.0 |
| 85 — 89 % | 3.5 | 60 — 64 % | 1.5 |
| 79 — 84 % | 3.0 | 55 — 59 % | 1.0 |
| 73 — 78 % | 2.5 | 0 — 54 % | 0.0 |

Note: Once a graded exam leaves the classroom, the score can not be changed.

Homework: There are daily homework assignments, listed below. These homework assignments are the main part of the course — the only way to learn mathematics is by doing *lots* of problems. While the homework will not be collected, *you are expected to do all homework problems*. Plan on spending at least **two hours** of homework for each of the four class meetings per week. You are encouraged to help each other on homework.

Quizzes: There will be weekly quizzes, given in recitation classes. Roughly half of the problems on the quizzes will be extremely similar to homework problems (this is strong incentive to do all the homework!).

Math Learning Center: provides a friendly, supportive atmosphere to get help on homework from other students and from experienced TAs; you can also use it as a place to work with other students in your class. The MLC is located on the first floor of the A-wing (the tall part) of Wells Hall. It is open during the following hours:

| | |
|---------------|-------------------------------|
| Monday, Tues. | 10:20 – 4 pm and 6 – 10 pm |
| Weds. | 9:10 – 4 pm and 6 – 10 pm |
| Thursday: | 10:20 – 2:50 pm and 6 – 10 pm |
| Friday | 10:20 – 1:40 pm |
| Sunday | 5 - 8 pm. |

Exam Schedule and weighting: There will be a total of 700 possible points for the course.

| | | |
|---------|--|---|
| 100 pts | First Hourly Exam | Tuesday, Feb 3 |
| 100 pts | Second Hourly Exam | Tuesday, Feb. 24 |
| 100 pts | Third Hourly Exam | Tuesday, March 24 |
| 100 pts | Fourth Hourly Exam | Tuesday, April 21 |
| 200 pts | Final Exam (uniform for all Math 133 sections) | Weds. May 6 10 am – 12 noon. Location to be announced. |
| 100 pts | Quizzes & Gateways | weekly quizzes on Tuesdays |

Gateway Exams: The course requirements include taking two Gateway Exams. These are taken at your initiative at a time of your choosing. **For times and locations**, see the link on the class webpage or click here.

- Gateway Exam 1 covers the simple methods of integration you learned in Math 132. It's offered Weds, Jan 21 – Friday, Feb 20.
- Gateway Exam 2 covers the integration methods you learn in this course. It's offered Monday, March 23 – Friday, April 17.

Gateway exams provide incentive for you to acquire, by the given date, the skills necessary for success in the subsequent portions of the course. These exams are computer-generated with no partial credit. You will receive instant feedback after taking the exam. The exams can be repeatedly taken (not more than once a day!) until you pass. Passing by the termination date is worth 10 points; coming within one point of passing is worth 5 points.

Important dates:

Friday, Jan 16: Online enrollment (including changes to credit/no credit) ends at 8pm.

Monday - Friday, Jan 19 - 23: All Math enrollment changes (late adds, drop to lower course, section changes) must be done at the Undergraduate Office, A212 Wells Hall.

Monday, Jan 19: M.L. King Day no classes.

Friday, Jan 23: Last day to late add a course, change sections within a course, or drop to a lower level course.

Friday, Feb. 6: Last date to drop a course and receive a full refund.

Wednesday, March 4: Last day to drop a course without a grade being reported.

March 9–13: Spring Break

Friday, May 1: Last day of classes.

Wednesday, May 6, 10 a.m. – 12 noon: Final Exam.

Calculators: Calculators are **not** required for this class, and actually will seldom be useful. Calculators and other electronic devices will not be permitted during exams and quizzes. Exam questions will not involve any complicated arithmetic calculations and should not require calculators *at all*. On homework and exams, always leave your answers in a form like $11\sqrt{2}$ or $\pi/5$; there is no point to converting these into decimals.

Key to Success: Do *ALL* the homework problems — and more for good measure. Mathematics is learned by doing problems. In the end (by exam time!) you should know how to approach each assigned homework problem. More advise:

In Class: Arrive in class on time. Sit in the front half of the room. *Take good notes*, trying to anticipate the next step as you write.

Homework: Start working on the homework problems the day that they are assigned. Work out all homework problems. Most quiz and exam questions will be minor variations on homework problems.

When you get stuck, look back through that section in the textbook or your class notes and find a worked-out example similar to the one you're stuck on. After that, try (i) asking a friend, (ii) going to the Math Learning Center or (iii) going to office hours. One way to make homework more productive and fun is to form a "study group" with 1 or 2 other Math 133 students to compare solutions and work out the hardest problems.

Reading the text: Before coming to each class, skim the section so you enter class with knowing what material will be covered. After class, read your class notes, then start doing HW problems. When you get stuck, look back and read examples from the section. After doing some (say, half) of the problems, read the section throughly. Then finish the problems.

Exams: Get a good night's sleep before each exam — staying up studying is not productive. If you have done all the homework problems, you will need only a few hours to review your notes. Concentrate on the problems that gave you the most trouble, rereading the text for those topics.

Attendance: You are expected to attend all class and recitation section meetings. If you must miss a class, plan to get notes for that day from a classmate. Be advised that the schedule in this syllabus is tentative. Missing an Exam without an advance valid excuse presented to the Instructor will result in a score of 0 pts. No makeups are given. Commercial travel schedules are not excuses. There will be no makeup or excused Quizzes (but two quiz scores are dropped). To be eligible for a Makeup Final Exam, you must have either (a) another final scheduled during the time of the Math 133 uniform final exam, or (b) have two other final exams scheduled that day. If you qualify, you must register for the Makeup Final Exam in A212 Wells Hall at the appropriate time.

Miscellaneous: All students are expected to adhere to the University's policy concerning academic integrity. It is covered in the Spartan Life booklet under General Student Regulations. According to the handbook, no student shall claim or submit the work of another as one's own. For more information about this and other scholarship issues, please consult the handbook or visit the Spartan Life web sites at www.vps.msu.edu/Splife/reg3.htm and www.vps.msu.edu/Splife/rule32.htm.

Tentative Homework Assignments:

| Date | Section | Exercises |
|--|----------------------------------|---|
| Jan 12 Jan 13 Jan 14 Jan 16 | 6.1 6.3 6.6 | 1(a,d), 3, 5, 6, 8, 13, 15, 23, 24, 26, 35, 45(c), 47(a,b). Quiz 1. 2, 5, 8, 9, 13, (17, 18, 22 part (a) only), 27. 1, 3, 4, 7, 9, 10, 15(a), 17, 18, 19, 22, 24. |
| Jan 19 Jan 20 Jan 21 Jan 21 | 7.2 7.1 | No class (Martin Luther King Day). Quiz 2. 3-21 odd, 26, 29, 31-34 all, 37-41 odd, 50, 54, 55, 65, 71, 74; 14, 16, 24. Read to the middle of page 470. 1-7 all, 9, 13, 14, 16, 19, 24, 25-31 odd, 34, 35. Gateway Exam I begins. |
| Jan 26 Jan 27 Jan 28 Jan 30 | 7.3 7.4 7.5 | 3, 7-13 odd, 16, 17-39 odd, 34, 41-65 odd, 60. Supplemental Exercises for Section 7.3; 1, 2, 3, 5 (on class web page). Quiz 3. 11-17 odd, 18, 20, 22, 39, 41, 44, 47-51 odd, 54, 56, 71, 76. Read Supplemental Material for Section 7.4. 3, 5, 6, 12, 18, 21, 23, 24, 25. |
| Feb 2 Feb 3 Feb 4 Feb 6 | Review 7.6 7.7 | (Suggested) Pages 461-3; 1-7 odd, 17-23 odd, 37-41 odd. Page 547-8: 1, 5, 9, 11, 25, 29, 31, 33, 35-45 odd, 49, 57, 61, 89, 93. Exam 1 covering through Section 7.5. Read to bottom of page 513; 1-7 odd, 12. Do all supplemental exercises for Section 7.6. Skip arccos, arccot and arccsc. 1-4 all, 7, 8, 19, 41, 43-46 all, 51, 53, 57, 58, 61, 62. Supplemental Exercises for Section 7.7: 2, 4, 6, 7, 10. |
| Feb 9 Feb 10 Feb 11 Feb 13 | 7.7 7.8 8.1 | 73, 77, 79-85 odd, 89-94 all 96, 97, 101, 105, 117. Quiz 4. Skip coth, csch and all inverse functions. 1, 5, 12, 13-21 odd, 16, 41-49 odd, 55, 57, 59. 1-7 odd, 13, 14, 17, 18, 19-29 odd, 30, 32, 37, 39, 47, 50, 53, 54. |
| Feb 16 Feb 17 Feb 18 Feb 20 | 8.2 8.3 8.3 | 1-9 odd, 10, 12, 13-19 odd, 22, 24, 25, 27, 29. Quiz 5. 1, 5, 8, 9, 11, 15-21 odd. 16, 25, 26, 29, 33, 35, 36, 41. Gateway Exam I ends. |
| Feb 23 Feb 24 Feb 25 Feb 27 | Review 8.4 8.5 | (Suggested) Page 547-8; 15, 19, 21, 65, 67, 69, 75, 97. Pages 634-5; 1, 5, 13, 15, 19, 23, 25, 35, 41, 55, 59, 69, 83-89 odd, 91-105 odd. Exam 2 covering through Section 8.3. 1, 3, 7, 8, 23, 29, 30. 7, 9, 13-21 odd, 24, 25, 26, 29, 32, 37, 39. |
| March 2 March 3 March 4 March 6 | 8.6 8.8 8.8 9.1 | 9-17 odd, 18, 20, 22, 32, 34, 39, 42, 45, 53, 57, 61, 65. 5, 7, 11, 16, 21, 23, 32. Quiz 6. 34, 39, 43, 46, 47-53 odd, 54, 63, 64. 1, 7, 9, 11, 13, 14, 16. Supplemental Exercises for Section 9.1; 1, 3, 6. Introduction to series worksheet (on web page). |
| March 9-13 | | SPRING BREAK |

| Date | Section | Exercises |
|----------|---------|--|
| March 16 | 11.1 | 3, 5, 6, 11, 13, 14, 16, 25-33 odd, 34. |
| March 17 | | Quiz 7. |
| March 18 | 11.1 | 41, 47, 51, 53, 54, 55 68, 77. |
| March 20 | 11.2 | 51, 53, 54, 56, then 1-4 (Skip Telescoping Series.) |
| March 23 | Review | (Suggested) Pages 634-9. Choose a technique for problems 151-220 and do those that are challenging. Page 682: 3, 11, 25. Page 840: 7, 9, 11, 15. Gateway Exam II begins. |
| March 24 | | Exam 3 covering Sections 8.3, 8.6, 8.8, 9.1, 11.1 & geometric series. |
| March 25 | 11.2 | 7, 9, 12-14, 23-33 odd, 34, 36, 37, 41, 45, 47. |
| March 27 | 11.3 | 5, 6, 8, 13, 16, 39, 40. |
| March 30 | 11.4 | 1-5 odd, 6, 10, 13-19 odd, 22, 24, 26, 27, 29. Supplemental Exercises for Section 11.4; 2, 4, 5, 7. |
| March 31 | | Quiz 8. |
| April 1 | 11.5 | Ratio Test only. 1, 3, 5, 8, 11, 15, 16, 17, 19, 20. |
| April 3 | 11.6 | Absolute convergence only. 15, 29, 34, 37, 38. |
| April 6 | 11.7 | Read to the bottom of page 802 (skip the subtleties involving endpoints). 3-13 odd, 14, 15, 18, 22, 25, 29, 33. |
| April 7 | | Quiz 9. |
| April 8 | 11.8 | 3-7 odd, 8, 9, 11, 12, 17, 18, 21. |
| April 10 | 11.9 | Read to bottom of page 817. 1-5 odd, 6,7, 9, 10, 15, 18, 19, 21, 23. |
| April 13 | 11.10 | Read to the middle of page 824. 1-5 odd, 6, 8. |
| April 14 | | Quiz 10. |
| April 15 | 10.4 | 1, 3, 4, 7, 11. Supplemental Exercises for Section 10.4; 2, 3, 6, 8, 10. |
| April 17 | 10.5 | 1-15 odd, 18, 20, 22, 23, 25, 32, 34, 35, 41-44 all. Gateway Exam II ends. |
| April 20 | Review | (Suggested) Page 840: 23-41 odd, 42, 43, 47, 57, 58, 59, 63, 65. |
| April 21 | | Exam 4 covering Sections 11.2 - 11.9 and 10.4 - 10.5. |
| April 22 | 10.6 | 1-7 odd, 8, 9, 10, 13, 16, 17, 19, 21, 23, 31, 33, 34. |
| April 24 | 10.7 | Read to the bottom of page 727. 1-9 odd, 10-14 all. |
| April 27 | Review | (Suggested) Pages 740-1; 33, 35, 37, 39-46 all, 49, 51, 79, 80. |
| April 28 | | Quiz 11 covering Section 11.10 and Chapter 10 material. |
| April 29 | Review | |
| May 1 | Review | |
| May 6 | | Final Exam 10 am to noon. |