

Math 152: Calculus II for the Mathematical and Physical Sciences
Section F2
Summer 2015

Instructor

- Name: Anthony Zaleski
- Website: <http://math.rutgers.edu/~az202>
- Office hours:
Monday, Wednesday, and Thursday
11AM-12PM
Scott Hall 115, College Avenue
- Feel free to ask me questions before or after class; e-mail me questions; or make an appointment to meet at my “real” office: Hill Center 508, Busch.

Meeting times and location

Monday, Tuesday, Wednesday, and Thursday
12:10-2PM
Scott Hall 104, College Avenue

Learning goals

- QQ: Formulate, evaluate, and communicate conclusions and inferences from quantitative information.
- QR: Apply effective and efficient mathematical or other formal processes to reason and to solve problems.

Course description

Welcome to Calculus II! In this course, we will study topics that are not only interesting in themselves, but also strongly linked to other sciences. In fact, it is impossible to do modern physics and engineering without the tools we’ll introduce!

In Math 152, you will become experts at finding integrals, analyzing infinite series, computing volume and surface area, finding Taylor series, and more!

It should be noted that this course covers the same amount of exciting material as a fall or spring course. Despite being a summer course, this is not a “watered-down” version of Math 152. We meet four times a week, so new material will be introduced at a fast pace.

Course webpage

I plan to post the homework assignments and quiz solutions to <http://math.rutgers.edu/~az202/teaching/su15>.

Textbook

We'll be using the same book as Math 151: *Calculus* by Jon Rogawski, second custom edition for Rutgers, ISBN: 978-1-4641-0375-9.

Grades

Your grade will be based on homework, quizzes, workshops, two midterm exams, and a final exam.

- Homework will be assigned roughly each class. I will circle the problems to be handed in; they will be due the Monday of the next week (although you may hand in homework early, which is advisable if you plan to be absent on the due date).
- A short attendance quiz will be given at the start of most classes. The quiz problems will resemble those of the homework.
- Approximately twenty minutes of each class will be devoted to a workshop, in which you'll work in groups to discuss challenging and interesting problems. After each Thursday's workshop, I will pick one of the workshop problems from that week. You are to carefully write this problem up yourself and hand it in the following Thursday. Clear exposition and correct notation are expected in your write-up.
- The two 80-minute in-class midterms will not be cumulative. The final will be cumulative. It will start at the beginning of the last class period and continue for three hours.

No calculators, notes, or formula sheets are allowed during the quizzes and exams. Here is how your work will factor into your grade:

Homework	10%
Quizzes	10%
Workshops	10%
Exam 1	15%
Exam 2	15%
Final Exam	40%

Make-up policy

There will be absolutely no make-up quizzes or midterm exams, and late homework/workshops will not be accepted. However, I will drop your four lowest quiz grades, two lowest workshop grades, and two lowest homework grades. If you have a serious, verifiable excuse for missing a midterm (e.g., a doctor's note), I will weight your final exam score more heavily to compensate.

If you will have a final exam conflict with another class, let me know as soon as possible, so that we can work something out.

Academic integrity policy

Read about the serious consequences of cheating here:
<http://academicintegrity.rutgers.edu/policy-on-academic-integrity>.

Special accommodations

Read about policies for students with disabilities here:
<http://disabilityservices.rutgers.edu/>.

Tentative calendar

Date	Topics	Sections
M 6/22	Math 151 review, area between curves	5.6, 6.1
T 6/23	Volumes and average value, the disk method	6.2, 6.3
W 6/24	The disk method, cylindrical shells	6.3, 6.4
Th 6/25	Integration by parts	7.1
M 6/29	Trigonometric integrals	7.2
T 6/30	Trigonometric substitution	7.3
W 7/1	Hyperbolic integrals, partial fractions	7.4, 7.5
Th 7/2	Improper integrals	7.6
M 7/6	Numerical integration, Taylor polynomials	7.8, 8.4
T 7/7	Taylor polynomials, review for Exam 1	8.4
W 7/8	Review for Exam 1	
Th 7/9	EXAM 1 (80 minutes)	6.1-7.8
M 7/13	Sequences, series	10.1, 10.2
T 7/14	Positive-termed series, absolute and conditional convergence	10.3,10.4
W 7/15	Absolute and conditional convergence, ratio and root tests	10.4, 10.5
Th 7/16	Power series	10.6
M 7/20	Taylor series; ALTERNATIVE OFFICE HOURS	10.7
T 7/21	Arc-length and surface area, parametric equations	8.1, 11.1
W 7/22	Review for Exam 2; ALTERNATIVE OFFICE HOURS	11.1
Th 7/23	EXAM 2 (80 minutes)	8.4-10.7
M 7/27	Parametric equations, arc-length and speed	11.1, 11.2
T 7/28	Polar coordinates	11.3
W 7/29	Polar area and arc-length	11.4
Th 7/30	Solving differential equations	9.1
M 8/3	ODE models	9.2
T 8/4	Catch-up and additional topics	
W 8/5	" "	
Th 8/6	" "	
M 8/10	" "	
T 8/11	Review for Final Exam	
W 8/12	FINAL EXAM (3 hours)	6.1-11.4