University of Wisconsin-Madison

Calculus – Math 211 001 and 002 – Fall 2022

Credits: 5

Course Designations and Attributes:
Gen Ed - Quantitative Reasoning Part B
Breadth - Natural Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S

Meeting Time and Location:
Lecture 001: MWF 8:50 AM-9:40 AM, Humanities Building 3650
Lecture 002: MWF 12:05 PM – 12:50 PM, Van Vleck Hall B102

Instructional Mode: Classroom Instruction

Specify how Credit Hours are met by the Course: This class meets for three 50-minute class periods plus multiple laboratory and/or discussion sessions each week over the semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc.) for about 2 hours out of classroom for every class period. The syllabus includes additional information about meeting times and expectations for student work.

INSTRUCTORS AND TEACHING ASSISTANTS

Instructor Name: Mikhail Ivanov

Instructor Email: use Piazza

Teaching Assistants: DIMAS DE ALBUQUERQUE <ddealbuquerq@wisc.edu>; Yupeng Zhang <zhang2599@wisc.edu>; Haley Colgate <hcolgate@wisc.edu>; Alex Hentzen <ahentzen@wisc.edu>; CHLOE ROSE HANSTRA <chanstra@wisc.edu>; Lovish Arora <lovish.arora@wisc.edu>; RAJAT SRIVASTAVA <rsrivastava7@wisc.edu>; KARAN SRIVASTAVA <ksrivastava4@wisc.edu>; CHUNZHEN HUANG <chuang365@wisc.edu>; Shreyash Ravindra Gajbhiye <srgajbhiye@wisc.edu>; Ivan Khurudzhi <khurudzhi@wisc.edu>.

Office hours: see canvas.

Piazza: piazza.com/wisc/fall2022/fa22math211001002

OFFICIAL COURSE DESCRIPTION

Course Description

Essential concepts of differential and integral calculus; exponential and logarithmic functions; functions of several variables. Primarily for students in prebusiness and some social sciences. Students preparing for advanced study in mathematics, physics, engineering and other sciences should take MATH 221, 222 and 234 rather than MATH 210, 211 and 213. Most students in the biological sciences should take MATH 221. MATH 210 does not fulfill the requisite.

Requisites

MATH 112 or 114 or placement into MATH 211.

LEARNING OUTCOMES

Course Learning Outcomes

By the end of Math 222 you should be able to:

- Apply integral calculus to analyze the cumulative effects of continuous processes (e.g., difference between indefinite and definite integral, integration by parts, the Fundamental Theorem of Calculus, etc.).
- Articulate mathematical knowledge and understanding of differential and integral calculus in a written context.
- Successfully perform computations related to limits, differentiation, and integration.
- Apply differential calculus to analyze rates of change, and in particular to model physical and economic phenomena (e.g., derivatives of exponential and logarithmic functions, modeling with linear differential equations, first and second derivative tests for extrema, applied optimization, etc.).
- Analyze functions of two variables (e.g., partial derivatives, tangent lines to curves, maximization and minimization in two variables, etc.).
- Analyze the behavior of functions of one variable, including their asymptotic behavior, local behavior and existence of extrema (e.g., limits, continuity, tangent lines, finding extrema, etc.).

APPROXIMATE COURSE SCHEDULE (by week)

1. Sections 1.1 – 1.2

2. Sections 1.3 – 2.1
3. Sections 2.2 – 2.3
4. Sections 2.4 – 2.6
5. Sections 2.7 – 3.2
6. Sections 3.3 – 3.4, Midterm Exam 1
7. Sections 3.5 – 3.6
8. Sections 3.7 – 4.2
9. Sections 4.3 – 4.4
10. Sections 5.1 – 5.3
11. Sections 5.4 – 5.5, Midterm Exam 2
12. Sections 5.6 – 6.1
13. Sections 6.3 – 7.1
14. Sections 7.2 – 7.3
15. Section 7.5, Final Exam

GRADING

Midterm 1 - 25%

Midterm 2 - 25%

Final exam - 34%

Online homework - 10% (4 drops)

Quizzes - 6% (2 drops)

LETTER GRADES: A curve will be finalized at the end of the semester for determining the overall course letter grades.

REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS

- Geoffrey C. Berresford and Andrew M. Rockett: Applied Calculus, 7th Edition, Cengage

EXAMS

There will be two midterm exams and a final exam for this course. The final exam will be cumulative. The dates for these exams are

- Midterm 1: Thursday, October 13th, 7:30 PM-8:30 PM
- Midterm 2: Thursday, November 17th, 7:30 PM-8:30 PM
- Final exam: Friday, December 16th, 7:45 AM-9:45 AM

All exams are closed book, closed notes. and no calculators or electronic devices of any kind are allowed. Exams are proctored in-person. No makeup exams will be offered except due to illness, quarantining or family emergency, and only with instructor (not TA) permission.

Pursuant to university policy UW-880, students are required to inform their instructors during the **first two weeks of class** about religious conflicts with quizzes and exams taking place during the semester. Students who will miss quizzes and/or exams during the semester because of religious holidays/observances must email the instructor at mivanov@wisc.edu to inform them of possible conflicts. They will work with the individual student to find suitable alternatives that adhere to university and departmental guidelines. Note that if a conflict is not raised during the initial 2 week period, then we cannot guarantee that suitable accommodations will be provided.

HOMEWORK & QUIZZES

- **Homework**

There will be weekly online homework assignments, available on the Canvas site. Since it is quite likely that in the course of the semester you will either experience a technical difficulty (e.g., missed the deadline, your computer shut down as you were submitting it, internet outage, etc) or a personal emergency (being sick, family emergency, etc), the four lowest homework scores will be dropped. You do not need to contact your TA or instructor if such a situation does come up.

- **Quizzes**

There will be weekly quizzes during discussion sections. Quiz content and grades are managed by your TA. The two lowest quizzes will be dropped. It is your responsibility to save these drops for personal emergency situations. Makeup quizzes will not be offered.

DISCUSSION SECTIONS

You must attend your designated discussion section.

COURSE WEBSITE, LEARNING MANAGEMENT SYSTEM and INSTRUCTIONAL TOOLS

- Our Learning Management System is Canvas. Important announcements will be sent through Canvas throughout the course. The Canvas site for our course is: https://canvas.wisc.edu/courses/312918
- The learning software WebAssign will be used for homework sets.
- We will use Piazza built in Canvas. It is a forum for you to discuss the material of this class with other students and your TAs and/or instructor. Posts to this page should be confined to questions regarding the material and logistical questions about the class (e.g., exam dates and locations).
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TEACHING & LEARNING DATA TRANSPARENCY STATEMENT
https://guide.wisc.edu/courses/#SyllabusTLData

PRIVACY OF STUDENT RECORDS & THE USE OF AUDIO RECORDED LECTURES STATEMENT

https://guide.wisc.edu/courses/#SyllabusFERPA

CAMPUS RESOURCES FOR ACADEMIC SUCCESS

https://guide.wisc.edu/courses/#SyllabusCampusResources

COURSE EVALUATIONS

https://guide.wisc.edu/courses/#SyllabusCourseEvals

RULES, RIGHTS & RESPONSIBILITIES

https://guide.wisc.edu/undergraduate/#rulesrightsandresponsibilitiestext

ACADEMIC INTEGRITY STATEMENT

"By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin-Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these previously listed acts are examples of misconduct which may result in disciplinary action. Examples of disciplinary sanctions include, but are not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension, or expulsion."
https://guide.wisc.edu/courses/#SyllabusAcademicIntegrity

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." https://guide.wisc.edu/courses/#SyllabusAccommodations

DIVERSITY & INCLUSION

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the

profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." https://guide.wisc.edu/courses/#SyllabusDiversityInclusion

ACADEMIC CALENDAR & RELIGIOUS OBSERVANCES

https://secfac.wisc.edu/academic-calendar/#religious-observances