



## University of Wisconsin-Madison

Math 222 - Calculus and Analytic Geometry II

**Credits:** 4

### **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:** MWF, 12:05pm–12:55pm, Ingraham Hall B10.

**Instructional Mode:** in-person

**Specify how Credit Hours are met by the Course:** The four credit hours are met by five 50-minute meetings and a minimum of ten hours of out of class student work per week for 14 weeks.

## INSTRUCTORS AND TEACHING ASSISTANTS

**Instructor Title and Name:** Mikhail Ivanov, Teaching Faculty

**Instructor Availability:** Friday 1:10pm–2:10pm, Van Vleck B127, or by appointment. Please see Canvas site for a recent schedule.

**Instructor Email/Preferred Contact:** Please use Piazza.

**Teaching Assistants and TA Email/Preferred Contact:** Duffy, Karen - [klduffy2@wisc.edu](mailto:klduffy2@wisc.edu); Huang, Yifan (Hunter) - [huang542@wisc.edu](mailto:huang542@wisc.edu); Tao, Amy - [altao@wisc.edu](mailto:altao@wisc.edu); Gajjala, Viswanatha Reddy - [vgajjala@wisc.edu](mailto:vgajjala@wisc.edu); Mine, Alex - [mine2@wisc.edu](mailto:mine2@wisc.edu); Neudorf, Lauren - [Ineudorf@wisc.edu](mailto:Ineudorf@wisc.edu).

**TA Office / Office hours:** Please see Canvas site for a full list of office hours. You can attend the office hours of any of the Math 222 TAs, not just our own lecture's TAs.

## OFFICIAL COURSE DESCRIPTION

### **Course Description**

Techniques of integration, improper integrals, first order ordinary differential equations, sequences and series, Taylor series, vector geometry in two and three dimensions

### Requisites

MATH 217, 221, or 275. MATH 211 or 213 does not fulfill the requisite

### COURSE WEBSITE, LEARNING MANAGEMENT SYSTEM and INSTRUCTIONAL TOOLS

Our Learning Management System is Canvas. The site for our course is:

<https://canvas.wisc.edu/courses/334475>

The learning software WebAssign will be used for homework sets and module quizzes.

We will use Piazza. <https://piazza.com/wisc/spring2023/sp23math222004>. This page 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). Any posts containing comments (either positive or negative) about the instructors, the class, the students, or anything else, will be deleted. Unprofessional conduct may result in disciplinary action. Please do not use email for math questions.

Some TA and/or instructor office hours may be held remotely. Zoom or MSTeams may be used for this purpose.

We will use Gradescope to grade exams.

### LEARNING OUTCOMES

#### Course Learning Outcomes

In the disciplinary or interdisciplinary context of a course, students will:

Manipulate quantitative information to create models, and/or devise solutions to problems using multi-step arguments, based on and supported by quantitative information.

Evaluate models and arguments using quantitative information.

Express and interpret in context models, solutions and/or arguments using verbal, numerical, graphical algorithmic, computational or symbolic techniques.

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

- Apply a variety of integration techniques to find and analyze the solutions to differential equations and initial value problems.

- Compare the size and behavior of functions and use these comparisons to analyze the convergence of integrals.
- Derive and manipulate asymptotic expansions of functions and use these expansions to understand the properties of the functions they approximate.
- Describe objects in three-dimensional space and how they interact with each other.
- Describe physical and biological phenomena using mathematical models.
- Articulate mathematical knowledge and understanding of differential and integral calculus in a written context.

## **GRADING**

Midterm 1 - 28%

Midterm 2 - 28%

Final exam - 28%

Discussion quizzes - 4% (2 drops)

Online homework - 9% (4 drops)

Module quizzes - 3% (4 drops)

**LETTER GRADES:** your total scores will fit on the following curve:

A - 92%

AB - 90%

B - 82%

BC - 80%

C - 70%

D - 60%

F - less than 60%

## **REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS**

- Stewart Calculus 8e ebook
- WebAssign

## **EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK**

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

- Midterm 1: **Tuesday February 28, 7:30-9:00 pm**

- Midterm 2: **Tuesday April 11, 7:30-9:00 pm**
- Final Exam: **Friday May 8, 12:25-2:25 pm**

All exams are closed book, closed notes and no calculators or electronic devices of any kind are allowed. A formula sheet will be provided. Exams are proctored in-person.

Note: if you have a lab or class scheduled at the same time as the midterms you are eligible to take a makeup exam. Makeup times and dates are posted on our Canvas site.

Only students with three final exams in a 24 hour period or two exams at the same time are eligible per university policies to take a final exam makeup. **DO NOT** plan any travel for the date of the final exam. Travel plans are not a valid reason to take the makeup exam.

Incompletes may be granted in cases of family emergencies, illnesses, or other unavoidable conflicts.

If a student misses both midterm exams and misses the final as well then that student will not qualify for an incomplete. Students in this situation should contact the Dean of Students office for guidance.

## **HOMEWORK & OTHER ASSIGNMENTS**

- **Quizzes**

There will be weekly quizzes during discussion. 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 given.

- **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, attending a funeral, etc), the four lowest HW scores will be dropped. You do not need to contact your TA or instructor if such a situation does come up.

- **Modules**

Modules will help you prepare for the upcoming lecture and/or review relevant material you're expected to already know. 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, attending a funeral, etc), the four lowest module quiz scores will be dropped.

## **RULES, RIGHTS & RESPONSIBILITIES**

- See the Guide's [Rules, Rights and Responsibilities](#)

## COLLABORATION

We encourage you to discuss topics from the course with other students. In particular, you may collaborate on the homework and modules/module quizzes. Collaboration is NOT allowed during discussion quizzes and/or exams.

## ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to [studentconduct.wiscweb.wisc.edu/academic-integrity/](http://studentconduct.wiscweb.wisc.edu/academic-integrity/).

## 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." <http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

## 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://diversity.wisc.edu/>

## Digital Course Evaluation (AEFIS)

UW-Madison now uses an online course evaluation survey tool, AEFIS. In most instances, you will receive an official email two weeks prior to the end of the semester when your course evaluation is available. You will receive a link to log into the course evaluation with your NetID where you can complete the evaluation and submit it, anonymously. Your participation is an integral component of this course, and your feedback is important to me. I strongly encourage you to participate in the course evaluation.

## Teaching & Learning Data Transparency Statement

The privacy and security of faculty, staff and students' personal information is a top priority for UW-Madison. The university carefully evaluates and vets all campus-supported digital tools used to support teaching and learning, to help support success through [learning analytics](#), and to enable proctoring capabilities. View the university's full [teaching and learning data transparency statement](#).

## Privacy of Student Records & the Use of Audio Recorded Lectures Statement

View [more information about FERPA](#).

Lecture materials and recordings for this course are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

## [Academic Calendar & Religious Observances](#)

Pursuant to university policy UW-880 (see the link below), 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 their instructor to inform them of possible conflicts. The instructor 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. Because of this, it is vital that students with religious conflicts contact their instructor in a timely manner during the first two weeks of class.

The university policy UW-880 can be found here: <https://policy.wisc.edu/library/UW-880>