Math 172H Syllabus

Course title and number
MATH 172–202: Honors Calculus 2.

Term
Fall 2020

Class times and location
Tuesdays and Thursdays, 9:45-11:00 a.m. in BLOC 124 or remotely via Zoom. Lectures may be recorded

Discussion times and location
Wednesdays, 1:35–2:25 p.m. in BLOC 124 or remotely via Zoom

Course web site
http://math.tamu.edu/~manshel/math172.html

Instructor Information

Name
Michael Anshelevich

e-mail address
manshel@math.tamu.edu

Office hours
Tuesdays 12:30–2:00 p.m., Wednesdays 10:30–12:00, or by appointment, remotely via Zoom

Course description and Prerequisites

Description: This four-credit course covers techniques of integration, applications of integrals, improper integrals, sequences, infinite series, vector algebra and solid analytic geometry. This is a second course in calculus for math, chemistry, and physics majors. It is designed to be more demanding than MATH 152. Credit will not be given for more than one of MATH 148, 152 and 172. The course meets for three hours per week in lecture with your professor and for one hour in the discussion section with your teaching assistant (TA).

Prerequisites: The official prerequisite for this course is Calculus I (MATH 147, MATH 151 or MATH 171 or equivalent) with a grade of C or better.

Learning Objectives
This course will provide the students with conceptual and computational tools to solve a wide variety of problems involving calculus and power series. At the conclusion of the course, students should:

- Be able to compute definite and indefinite integrals, using numerous techniques, including the Fundamental theorem of calculus; Substitution; Integration by parts; Trigonometric integral techniques; and Partial fractions.
- Be able to use the techniques of integration thus mastered in various applied problems, including the computation of area, volume, arc length, surface area, work, and mass.
- Be able to do algebraic and calculus computations in polar coordinates.
- Understand the definitions of sequences and series. Be able to tell whether they converge or diverge. Learn to manipulate power series, expand functions into Taylor series, and apply the Taylor approximation.

The honors section will have a different balance of conceptual and computational topics, and will provide a more advanced coverage of some subjects, including the Cavalieri principle, derivation of volume formulas, and applications of Taylor series. Part of weekly homework assignments will be designated “honors homework”, see below.

Textbook and/or Resource Material

Grading Policies.
The course grading will be based on the results of three midterm exams, a final exam, and weekly homework.

Highest Midterm Exam ................................................................. 20%
Second highest Midterm Exam ............................................... 15%
Lowest Midterm Exam ............................................................... 15%
Final exam ............................................................................... 25%
Homework .................................................................................. 15%
Honors homework and class participation ................................. 10%

A total score of 90% or more guarantees an A, a score of 80% or more a B, 70% or more a C, 60% or more a D.

Homework. Homework will consist of designated exercises to be graded, and additional practice problems not to be turned in. The practice problems are an invaluable resource to help you keep up with the class and prepare for exams, even if they are not graded.

Homework will be due on most Thursdays. You are welcome (indeed, encouraged) to work together, but each student must submit their own homework solutions, written in their own words. Straight copying of homework is not allowed. No late homework will be accepted, but the two lowest homework scores will be dropped.

Write homework solutions in clear handwriting (or type it, if you prefer). Always label your assignment with your name and section.

The homework problems will be posted on the course webpage. It is your responsibility to regularly check the webpage to obtain the latest homework assignment.

Honors homework. Homework assignments will include especially challenging/interesting “honors problems”, to be turned in separately.

Class participation. Students will accumulate class participation “checkmarks”. To obtain the first checkmark, visit the office hours (or make an appointment) to introduce yourself. Other checkmarks may be obtained by asking (or answering) mathematical questions in class. A minimum of 5 checkmarks is required to obtain the full class participation score.

Exams Timeline (dates subject to modification).

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
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<tbody>
<tr>
<td>Midterm Exam I</td>
<td>September 17 (week 5), 9:45–11:00 a.m.</td>
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<tr>
<td>Midterm Exam II</td>
<td>October 15 (week 9), 9:45–11:00 a.m.</td>
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<tr>
<td>Midterm Exam III</td>
<td>November 19 (week 14), 9:45–11:00 a.m.</td>
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<tr>
<td>Final Exam</td>
<td>December 7 (Monday), 8:00–10:30 a.m.</td>
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<tr>
<td>Homework</td>
<td>Weekly on Thursdays</td>
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The exams will be administered electronically in eCampus and proctored online over Zoom. During each exam, you will be required to set up a streaming video camera (cell phone or USB webcam) in such a way that the proctor will be able to view your workspace during the exam. The proctoring sessions may be recorded. In order to receive credit for this course, you must consent to be proctored in this manner. In order to do this, the following technical requirements are needed:

- Appropriate hardware (laptop or desktop computer, a second device such as a mobile phone, high-speed internet connection).
- Appropriate software (PDF reader, Zoom on phone and computer, the latest update on an internet browser-Chrome or Firefox are recommended).
Make-up exams will be only allowed due to excused absences and the timeline must be discussed with the instructor, following Student Rules. If you foresee the need to be absent during an exam, you must notify the instructor in advance. In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class. Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

It is NOT permissible to discuss any aspect of any test or examination until ALL students have completed the exam. The penalties for violating this policy will range from an F on an assignment or test, to failing in the course. See also the university rules below.

Course Topics.

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>TIME</th>
<th>READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polar coordinates.</td>
<td>(1 week)</td>
<td>Part II, 15.</td>
</tr>
<tr>
<td>Sequences and series.</td>
<td>(1.5 weeks)</td>
<td>Part IV, 18–19.</td>
</tr>
<tr>
<td>Applications of Taylor series.</td>
<td>(0.5 week)</td>
<td>Part IV, 24.</td>
</tr>
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</table>

Other important dates: August 25 (last day to add or drop a course), November 10 (Q-drop), November 24 (last class).

Keys to success: Attend class (of course :) Solve all the homework problems, well before the exams. Spend more than seven hours per week working on the problems. Form study groups to discuss the course material and homework problems. Read ahead in the text.

University policies

Attendance policy.
The university views class attendance and participation as an individual student responsibility. Students are expected to attend class, in person or remotely, and to complete all assignments.

Please refer to Student Rule 7 at in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy.
Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student’s grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines.
Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor (Student Rule 7, Section 7.4.1).

“The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence” (Student Rule 7, Section 7.4.2).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See Student Rule 24.)

**Academic Integrity Statement and Policy.**

“An Aggie does not lie, cheat or steal, or tolerate those who do.”

“Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case” (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

**Americans with Disabilities Act (ADA) Policy.**

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

**Title IX and Statement on Limits to Confidentiality.**

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention - including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University’s goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University’s Title IX webpage.

**Statement on Mental Health and Wellness.**

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student’s academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students
who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

**Campus Safety Measures.**
To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Fall 2020 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. **Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction.**
- Face Coverings—Face coverings (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Description of face coverings and additional guidance are provided in the Face Covering policy and Frequently Asked Questions (FAQ) available on the Provost website.
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- To attend a face-to-face class, students must wear a face covering (or a face shield if they have an exemption letter). If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the Student Conduct office for sanctions. Additionally, the faculty member may choose to teach that day’s class remotely for all students.

**Personal Illness and Quarantine.**
Students required to quarantine must participate in courses and course-related activities remotely and **must not attend face-to-face course activities.** Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Students experiencing personal injury or Illness that is too severe for the student to attend class qualify for an excused absence (See **Student Rule 7, Section 7.2.2.**) To receive an excused absence, students must comply with the documentation and notification guidelines outlined in Student Rule 7. While Student Rule 7, Section 7.3.2.1, indicates a medical confirmation note from the student’s medical provider is preferred, **for Fall 2020 only, students may use the Explanatory Statement for Absence from Class form in lieu of a medical confirmation. Students must submit the Explanatory Statement for Absence from Class within two business days after the last date of absence.**