Information for Students in Math 10560, Fall 2024

Course Website: https://nsalter.science.nd.edu/teaching/calc2/

Instructors: MATH 10560

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Teaching Assistants: Tutorial - MATH 12560

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Text: Stewart, *Single Variable Calculus*, Ninth edition. If you had Math 10550 last semester, you do not need a new book or access code for online homework (assuming you purchased the recommended 4-month Cengage Unlimited Access). See `Book/Access Code Information` on the website before you make any purchases.

Syllabus: We will cover Chapters 6 and 7, parts of Chapters 8 and 9, Chapter 10 and Chapter 11. The topics are logarithmic and exponential functions, techniques of integration and applications, an introduction to differential equations, parametric equations, polar coordinates, infinite sequences and series and power series. Details of the order in which topics are presented are given in the attached day by day schedule.

Preparation for Class and Tutorials: You are encouraged to read each section of the text before it is covered in class and review any concepts from Calculus 1 and Precalculus that will be used. To help you prepare for each lecture, click on the following links on the webpage, for lecture notes, slides and videos, click on `Lecture Notes and Videos`, and for a list of prerequisites from precalculus, click on `Precalculus Preparation`. After working through your homework, you should prepare for your worksheet in tutorials by visiting the `Old Exams For Practice` link on on our website. You should pick out the questions from the relevant sections (check under `Quiz Information` for a list of questions to look at in preparation for each tutorial quiz) and attempt them. The solutions are posted so that you can check your answer and your methodology.

Tutorials: The Tuesday tutorials are mandatory. In the first tutorial (08/27) your tutor will go over the class information and review some values of trigonometric functions. In subsequent tutorials, you will have a quiz on the material covered in class in the week prior to the tutorial.

The quiz will consist of three multiple-choice questions similar to old exam questions. You will find a list of material to be covered in quizzes on our website under `Quiz Information`. To prepare for quizzes, please attempt the old exam questions listed for review on these topics.

This is a low penalty method to get some feedback and check if you are exam ready on that material. In addition, our statistics show that preparing for tutorials each week by working through old exam questions leads to higher grades on exams. Your tutor will go over the solutions in class after the quizzes have been collected.

There will be no make-up quizzes. If you have a valid excuse for missing a tutorial, please contact your advisor and have them circulate an official note to your instructors (and in particular to your tutor) verifying your excused absence. Your tutor will replace the excused tutorial grade by the average of your other tutorial grades at the end of the semester (contingent upon receiving official notification of your excused absence).

Your Tutorial grade will count for a total of 100 points toward your final grade (10 points for each tutorial with a Quiz, 10 points for attendance and participation in the last tutorial, with the lowest score dropped).

There will be no tutorial on the day of our Tuesday exam (09/24) and there is no tutorial scheduled for Tue. 11/26 before Thanksgiving.

Homework: Homework problems will be assigned and graded electronically. (Click on Online Homework Information on the website and read through the homework handout for more details). The online homework system has many extra learning tools such as interactive practice problems(master it), videos and links to Wolfram Alpha demonstrations in the text. You are encouraged to make full use of these extra features.

Whom to e-mail/contact for problems For questions about timetables, exam locations/format and general policies, you will be able to find answers on the class website, or in the information handouts. For problems understanding the material or solving problems, you should find a time that suits your schedule from the available options; the math help room or your instructor's office hours. If you wish to discuss your grade or your progress in the course, request a homework extension, or request a make-up exam etc... , the appropriate person to contact (by e-mail or at office hours) is the instructor of your section. If you have trouble signing up for webassign or sign into the wrong section, or wish to discuss a technical problem with webassign, please contact webassign student support or attend the Cengage office hours. You will find a link to the Cengage Office hours on our webpage `Help Available`.

Examinations: There will be three midterms, ten quizzes/group activities (in tutorials) and a final exam.

Exam Schedule

	Exam 1	Exam 2	Exam 3	Final Exam
Time and	8-9:15 a.m.	8-9:15 a.m.	8-9:15 a.m.	1:45-3:45 p.m.
Date	Tue. Sept. 24	Thur. Oct. 17	Thur. Nov. 21	Wed. Dec. 18

Exam Locations have not yet been fully determined, they will appear on the website under `Exams: Time/Date/Location` when the information is available.

If you are entitled to **extra time** for your exam, please contact the Sara Bea Center well in advance of your exam to reserve a place there to take the exam. Extra time will not be given in the regular exam hall.

Calculators will **NOT** be allowed on exams.

Grading:
Midterms: 100 points each
Final: 150 points
Quizzes: 100 points
Homework: 50 points (each homework carries equal weight)
Your final grade will be determined by your total score (out of 600).

Class Attendance: A first-year student who accumulates more than 3 unexcused absences may be given an F. Whether your instructor enforces this policy or not, it is not a good idea to skip classes. If you have to miss classes due to an emergency or sickness, you should alert your advisor and have them circulate an excused absence note to your instructors and tutors. To catch up on class material, you can work through the lecture notes provided on the website and contact your instructor or go to the math help room if you have questions. In general not attending class or sitting at the back of class working on assignments for calculus or other classes are factors which have a strong negative effect on grades.

Your instructor may or may not take attendance.

Exam Conflicts

- The Tues/Thurs 8 am exam schedule and the schedule for finals is known for all your courses. Check for any conflicts Here and let your instructors and advisor know about conflicts well in advance. Any student with exam conflicts (midterms of finals) must submit an eForm (through the Academic e-forms App. on inside-ND) at least one week before the exam period to allow for sufficient time to resolve the conflict. The dean's office has access to the number of students in the conflicted classes, this dictates which class gives the make-up exam and the decision will be made by the dean's office.

- If you have three or more finals in one day, or 4 or more finals in a 24 hour period, you may negotiate to change the time of one of these finals. If you intend to request to have the time of your Math 10560 final changed, you must talk to your dean(or the dean's designee or fill out an e-form) at least one week before the start of the final exam period (see section 3.2.2.4 of the undergraduate academic code). Note that unless your reason for requesting a rescheduled final are in accordance with university regulations, you will not be allowed to reschedule your final. In particular TRAVEL PLANS THAT CONFLICT WITH YOUR FINAL EXAM(INCLUDING CATCHING A BUS TO THE AIRPORT) AND ATTENDING FAMILY EVENTS SUCH AS WEDDINGS AND GRADUATIONS DO NOT QUALIFY AS A REASON TO HAVE YOUR FINAL RESCHEDULED. If you have a conflict on finals week, please make sure that you are available to take the exam in the make-up slot; on Friday afternoon of finals week.

- If you are an **athlete**, make sure that you check for exam conflicts with your athletic schedule for the semester and let your athletic advisor know about such conflicts so that they can arrange to have someone from the athletic department attend the meet to proctor the exam. Please note that according to NCAA rules, attending practice is not considered as a reason for an excused absence.

Missed Exams: Note that there will be three Midterm Exams and a Final Exam.

- Please take note of the dates of all exams.

- A student who misses an examination and has documentation showing that they have an excused absence will be given a make-up exam. Students who do not have an excused absence may be allowed take a make-up exam for a credit of 90% of the points they score on the make-up (the second time you miss an exam without an excused absence, you will get a grade of zero for the exam). Please be aware that travel plans, sleeping in, defective alarm clocks, etc. are not considered to be a valid reasons for an excused absence.

- If you have a valid excuse (illness, excused athletic absence, etc.) for missing an exam, please have your advisor arrange to have an official e-mail sent to your instructor as soon as possible. Please be advised that if you are sick, a note from a visit to St. Liam's will be necessary. A note from the dial-a-nurse service will not constitute an excused absence. (Also please do read the note on the honor code below carefully)

- Due to the increase in demand for make-up exams in recent semesters, it has become very difficult to find a common time to schedule a proctored make-up. Priority in scheduling will be given to students who have an excused absence. If you do not have an excused absence and you cannot make the scheduled time, the instructor will substitute 90% of the average of your other grades for that exam. Make up exams may have a different format than the midterm exams.

Honor Code: Both examinations and homework are conducted under the Honor Code. While discussion in small groups in doing homework is permitted (and strongly encouraged) in this course, the work should be your own. Letting online tutors or other students complete your homework is a violation of the honor code and also quite foolish. Your homework provides you with an opportunity to test your knowledge and find your own weaknesses in a low stakes environment. You should start each homework well before the deadline and if you discover that there are some problems that you are having trouble with, take them to the math help room or your instructor's office hours.

Exams and quizzes are proctored and must be completed without the aid of a calculator or formula sheet (other than the one provided, if applicable).

Obviously forging notes or tampering with notes from St. Liam's is a serious offense and a clear violation of the honor code. If you are a foreign student, a violation of this kind may affect your ability to get a visa, so please be warned and do not engage in such behavior.

Schedule   Math10560   Fall 2024

08/27	Tue.	Course Information.
08/28	Wed.	6.1. Inverse Functions
08/30	Fri.	6.2*. The Natural Logarithmic Function
09/02	Mon.	6.3*. The Natural Exponential Function
09/03	Tue.	Quiz 1, Topics: 6.1, 6.2*
09/04	Wed.	6.4*. General Logarithmic and Exponential Function.
09/06	Fri.	6.5. Exponential Growth and Decay
09/09	Mon.	6.6. Inverse Trigonometric Functions
09/10	Tue.	Quiz 2, Topics: 6.3*, 6.4*, 6.5
09/11	Wed.	6.8. Indeterminate Forms and L'Hospital's Rule
09/13	Fri.	NO CLASS (Inauguration)
09/16	Mon.	7.1. Integration by Parts
09/17	Tue.	Quiz 3, Topics: 6.6, 6.8
09/18	Wed.	7.2. Trigonometric Integrals
09/20	Fri.	7.3. Trigonometric Substitution
09/23	Mon.	Review for Exam 1
09/24	Tue.	**Exam 1** (No Tutorial)
09/25	Wed.	Return and discussion of Exam 1/Catch Up (Topics discussed will appear on Quiz 4)
09/27	Fri.	7.4. Integration of Rational Functions by Partial Fractions
09/30	Mon.	7.4. Integration of Rational Functions by Partial Fractions
10/01	Tue.	Quiz 4, Topics: 7.1, 7.2, 7.3 + Topics from Exam 1
10/02	Wed.	7.5. Strategy for Integration
10/04	Fri.	7.7. Approximate Integrals
10/07	Mon.	7.8. Improper Integrals
10/08	Tue.	Quiz 5, Topics: 7.4, 7.5, 7.7
10/09	Wed.	9.2. Direction Fields and Euler's Method
10/11	Fri.	9.3. Separable Equations
10/14	Mon.	9.5. Linear Equations
10/15	Tue.	Quiz 6, Topics: 7.8, 9.2, 9.3
10/16	Wed.	Review for Exam 2
10/17	Thur.	**Exam 2**
10/18	Fri.	Return and discussion of Exam 2/Catch Up (Topics discussed will appear on Quiz/WS 8)
10/21	Mon.	Fall Break
10/23	Tue.	Fall Break
10/25	Wed.	Fall Break

10/28	Mon.	11.1. Sequences
10/29	Tue.	Quiz 7, Topics: 9.5 + topics from Exam 2
10/30	Wed.	11.2. Series
11/01	Fri.	11.3/11.4. p-series (using integral test) and comparison test.
11/04	Mon.	11.4. The Comparison Tests
11/05	Tue.	Quiz 8, Topics: 11.1, 11.2, 11.3
11/06	Wed.	11.5. Alternating Series
11/08	Fri.	11.6. Absolute Convergence and the Ratio and Root Tests
11/11	Mon.	11.7. Strategy for Testing Series
11/12	Tue.	Quiz 9, Topics: 11.4, 11.5, 11.6
11/13	Wed.	11.8. Power Series
11/15	Fri.	11.9. Representations of Functions as Power Series
11/18	Mon.	11.10. Taylor and Maclaurin Series
11/19	Tue.	Quiz 10, Topics: 11.7, 11.8, 11.9.
11/20	Wed.	Review for Exam 3
11/21	Thur.	**Exam 3**
11/22	Fri.	Return of Exam 3, Catch up/review
11/25	Mon.	11.10. Taylor and Maclaurin Series
11/26	Tue.	No Tutorial
11/27	Wed.	Thanksgiving Break
11/29	Fri.	Thanksgiving Break
12/02	Mon.	11.11. Applications of Taylor Polynomials
12/03	Tue.	Quiz 11 Topics 11.10
12/04	Wed.	10.1. Curves Defined by Parametric Equations
12/06	Fri.	10.2. Calculus with Parametric Curves
12/09	Mon.	10.3. Polar Coordinates
12/10	Tue.	Review(points for attendance) Topics: 11.11, 10.1-10.3
12/11	Wed.	10.4. Areas and Lengths in Polar Coordinates
12/18	Wed.	**Final Exam 1:45-3:45 p.m.**

Study Habits/Learning Strategy In this course we emphasize both the acquisition of new ideas and the process of solving problems with those ideas. In order to develop a thorough knowledge of the material, it is important that you actively engage in the process of problem solving. **Reading the book and completing the homework** will help you understand the material section by section. **Working on old exam questions in tutorial** will take you a step further towards integrating the concepts and seeing the big picture. Exam questions and tutorial quizzes often contain problems that require material from previous sections in addition to concepts covered in Calculus 1 and Precalculus. It is very important to be willing to look up and review material from previous sections and courses when you discover the you need to do this. (This mindset is not just important for Calculus II, but essential to any research or projects that you might undertake as an undergraduate or in your future studies.) It is also essential to prepare for tutorials by completing the homework and trying the `old exam questions` on the sections to be covered (`Quiz Information`). **On the day of the exam, you will be required to answer questions on a large body of material without any props.** You must prepare honestly and thoroughly for this scenario. As mentioned above, old exams are available on our website for practice. More tips on Studying appear on the website under `Study Tips`.

Survey Results Spring 2013 A survey conducted in Spring 2013 on exiting Calculus II students revealed some of the difficulties that students had. Although most have been discussed with university administrators, it seems that changes in exam schedules and the timing of registration openings may not be possible. However, I hope that some forewarning will mean that you will be forearmed.

Common Difficulties Reported by Students (Survey Spring 2013)

- This is considered a difficult course and covers a lot of material. If you fall behind, you get lost very quickly.

- Students who skipped classes got lost very quickly.

- Many students fall behind in this course because they have to keep up with deadlines for projects and labs for other courses. (I suggest you set by time for mathematics each week and stick to your schedule).

- Some students delete important e-mails without opening them. **Communication for these course is mainly through e-mail or in class.** Please make a folder in your e-mail account to store all messages pertaining to this course for your reference. In particular store all messages from your instructor, your tutor or Professor Pilkington.

- Exam 3 covers A LOT of material much of which is new. Many students misjudged the time needed to review for this exam with disastrous results. This exam also seems to coincide with deadlines for projects and activities in other classes.

- Exam 3 also coincided with the opening registration time for many students in the course in Spring 2013 as it did for many Spring semesters. We have discussed this with administrative officials, hopefully it will not be an issue this semester. For a lot of students, taking time out from their exam to complete the registration process was distracting and broke their concentration. For some it was upsetting because they could not get into the classes they wanted. If yourregistration time occurs during exam 3 this semester, we will not deny you the opportunity to sign up for your courses, however we strongly advise that you wait until your exam is over to sign up.

- Many students were unaware of the resources provided in the online homework system and on the website. Please familiarize yourself with the website and the resources both there and in your homework.

- In general students tend to be unaware of the help available for the course. In addition to office hours, there are a number of places to get help listed below. I suggest you pick a help session that suits your timetable and mark it on your calendar each week, leaving that time free to attend the help session if you need to. When working on summarizing lectures, homework and old exam questions, make a list of the concepts and problems that you are having difficulty with and bring your list to the help session each week.

- Most students say they would benefit from improving their time management and study skills. You will find lots of good advice on the internet about this and I suspect that it will help many of you to try to improve in these areas. In particular, in light of the difficulties that many students had with procrastination due to deadlines in other courses, it seems time management is crucial.

- It seems that students get very little advice on how to deal with a bad grade in this or any course. For this course, it is essential to get help if you have a low grade. As mentioned above, starting your study a few days before the exam is not a good strategy, so make sure you attend help sessions over a number of weeks.

- When students exiting from the course in Spring 2013 were asked what advice they would give to students taking the course in subsequent semesters, most said that they would advise you to keep up with the material and familiarize yourself with the resources on the website.

Resources Please make sure you are aware of the resources for this course by taking time to browse through the website and the online homework. Of note are :

Online Homework Practice problems, videos, interactive e-book with links to Wolfram demonstrations and videos.

Website

- Practice Exams under `Old Exams For Practice`,

- Old Exam Questions under `Old Exams For Practice`,

- Notes and videos for each lecture, `Lectures Calculus 2`,

- Calculus 1 materials for reference and review, `Lectures Calculus 1` and `professor Borelli's Lectures`.

- Algebra/Precalculus materials for reference and review, `Algebra/Precalculus Review` and online review module in webassign.

Help See website for more details.

- Office Hours: Your instructor and tutor will announce office hours in class; `Help Available`.

- Math Help Room (walk in), run by graduate students including the teaching assistants for this course. `Help Available`.

- Learning resource center, tutoring and collaborative learning sessions, check website for details; `Help Available`.

- Exam Reviews, The night before each exam, one of the instructors will hold a walk in review/Q&A session; `Exam Reviews`.