

MTH 322

Advanced Mathematical Analysis

Instructor Information

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Course Description

Students will be introduced to the foundations of real analysis through a rigorous development of the real number system. This will be followed by a study of limits, continuity, and differentiability of real functions. The Riemann integral and the Fundamental Theorem of Calculus will be developed rigorously. Sequences and series of real functions will also be discussed. Credits: 3 (3,0)

Pre-requisites

MTH 252 and MTH 290

Required Materials

None but a suggested textbook for this course is [Introduction to Analysis](#) by Maxwell Rosenlicht.

Occasionally, you may find it useful to use computer software to compute examples, solve equations, or check your work. While it will not be a required part of the course I can recommend the following resources.

- [WolframAlpha](#) is available as a free resource online.
- [Sage](#) is an open-source computer algebra system with programming capabilities based on Python.

Additionally, \LaTeX is a document preparation system which is widely used in academia for typing mathematics. If you plan on continuing on in mathematics (i.e. graduate school), I highly recommend learning how to use it early on in your studies. For an introduction check out <https://www.latex-project.org>. If you do not want to download a \LaTeX distribution I recommend the website <https://www.sharelatex.com/>.

Course Breakdown

Participation	25 %
Exam 1	25 %
Exam 2	25 %
Final Exam	25 %

Participation

In general, participation will be judge by class attendance, activity during in class discussion of problems, and questions asked in class.

Homework

There will be a list of suggested homework problems. These problems will not be collected but it is imperative that you do them in order to practice for the exams.

Tests

There will be two mid-terms worth 25 points and a cumulative final worth 25 points. The midterms will be in-class on the dates indicated in the calendar. The date of the final is set by the registrar.

Grade Scale

Grade	Minimum %
A	93
A–	90
B+	87
B	83
B–	80
C+	77
C	73
C–	70
D+	67
D	60
F	0

Cancellation of Classes

Weather and other campus-wide cancellations will be listed on the home page, Facebook and Twitter and you can also sign up for RAVE and SUNY Alert. Go to the Rave web page and use your Farmingdale user ID and password to enter the site. For SUNY-Alert, please visit the University Police web page.

Religious Absences

If you are unable to attend class on certain days due to religious beliefs, please consult with your instructor well in advance of the absence so that appropriate accommodation can be made.

Use of Email

It is College policy that instructors and students use the Farmingdale email system or the Blackboard email system to contact one another.

Make-ups

Make-up exams and quizzes will be given to students who miss exams for valid reasons at the discretion of the instructor. In general, acceptable reasons for absence from class include illness, serious family emergencies, special curricular requirements (e.g., field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) will be excused. Other reasons also may be approved. In addition, if you are already aware of a conflict with an exam date, then you need to discuss this with your instructor within the first two weeks of class.

Temporary Grades

I Grade: A grade of “I” (incomplete) is reported when, for some reason beyond their control, the student misses the final examination or has not completed a portion of the required work for the course. The decision to grant an “I” is at the sole discretion of the instructor. No achievement points are awarded for an incomplete. All incompletes must be resolved and a change of grade submitted no later than 30 days after the beginning of the next semester (fall to spring, winter intersession to spring, spring to fall, summer session to fall). An instructor may grant an extension of an incomplete grade until the end of the semester by documenting and filling the approved form with the Registrar prior to the conclusion of the 30 day period. Any incomplete grade not finalized or extended by the instructor within the 30 day time period mentioned above will automatically be changed to an “F”. An incomplete does not constitute successful completion of a prerequisite.

Academic Honesty

Because intellectual honesty is a cornerstone of all academic and scholarly work, each member of the Farmingdale State College campus community is expected to maintain academic integrity. Farmingdale State College has developed regulations concerning academic dishonesty and integrity to protect all students and to maintain an ethical academic environment. For more information, click the updated link for the [Academic Integrity Policy](#).

It is important for you to understand the concept of plagiarism. Plagiarism is intentionally representing the words, images or ideas of another as ones own in any academic exercise. This includes words, images or ideas in either print or electronic format.

Student Code of Conduct

The President of the College and the Vice President for Student Affairs recognize the rights of designees including University Police, to enforce all regulations, policies, license agreements, laws and codes on campus. If any individual allegedly violates the laws, Student Code of Conduct or campus policies, a Presidents designee will institute proceedings against the offender (s). For more

information on the student code of conduct, see the Code of Conduct section in the current Student Handbook, or choose Code of Conduct from the A-Z Links.

Disability Services Center

Located in Roosevelt 151. Phone: (631) 794-6174 Fax: (631) 794-6173.

Disclaimer

This syllabus is not set in stone and I may adjust it as I deem necessary throughout the semester. By taking this course, you acknowledge that you have read this syllabus and abide to it and any such changes.