

Analysis I MATH 5200/6200

Instructor: Dr. Michel Smith

Office hours: Via zoom immediately after class and by appointment

Class Web Site: <http://webhome.auburn.edu/~smith01/math5200/>

I begin by quoting from a message sent to the faculty from the Provost's Office:

While 2020-2021 was undoubtedly a year like none other, we can all be proud of our institution's ability to successfully balance the needs of our faculty, staff, and students while remaining focused on our immediate priority – the safety and well-being of our campus.

The Provost's Office further tells us that, "Given the efficacy of vaccinations, we know they are the most important protection against COVID-19, and all members of our campus community are strongly encouraged to get vaccinated."

The majority of class meetings will be done in person in the scheduled classroom at the scheduled time; some meetings may be done via zoom; the zoom links will be made available at the class canvas site. You will be given an email announcing zoom meetings at least a day before the scheduled meeting. Due to the recent upticks in the delta and omicron variants of the covid-19 virus, and based on University policy and advice from the CDC, when meeting on campus in our scheduled classroom, all students will be required to wear masks. If at any time during one of the class meetings, you need to remove your mask - you must leave the classroom to do so. No penalty will be given to any student who needs to leave the classroom for this reason. Students who are feverish or unwell should not attend class but should be tested and follow the advice of their physicians regarding interacting with others and returning to campus. If a student needs to quarantine, the student should contact me immediately, and we will discuss ways to make up classwork, provided the student is well enough to do so.

We will follow any recommended University policy regarding the pandemic; note that these are subject to change based on advice from knowledgeable health officials.

Students will be expected to present in class their solutions to assigned homework exercises and theorems. The roll of the "audience" the rest of the students, is to make sure that the logic is correct; students are strongly encouraged to ask questions when they are unsure of what is being presented. An integral part of the learning process for mathematics is solving mathematics problems and analyzing the solutions to mathematics problems. You will be challenged to solve problems, develop techniques and prove theorems that are new to you; the purpose of this course is to develop analytical problem-solving techniques that can be applied to a broad range of problems. The techniques of mathematics are retained much more firmly if students can discover and critique their own solutions to problems.

Homework, Presentation and Participation counts as 20% of the grade; tests, quizzes, projects, etc... count 80% of the grade according to the point system listed below:

Grade Calculation

Participation, etc. broken down as follows:	22%
Homework	10
Presentation and Participation	10

Tests, etc.:	80%
Item (N_i = number of each item)	Number of points each (p_i = points per item)
Quizzes Short Projects	10
Projects	20
Tests (approx. two or three tests)	20
Final	60
80%	Total Possible = $\sum N_i p_i$

Grade calculation = (number of points obtained \div total possible) \times 100%.

The standard 10 point scale will be used:

90 to 100 =A; 80 to <90 = B; 70 to < 80 =C; 60 to <70 = D; <60=F.

Test, quizzes and projects.

Some quizzes and tests will be open notes; this includes my notes on the class website. You may not receive any other outside assistance and may not discuss quizzes and tests with anyone. You will be asked to affirm that you have abided by these conditions. Regarding projects, some of which may be group assignments, all outside resources must be credited. Fellow students must be credited if they helped with solutions to homework or project exercises.

Homework/Participation/Presentation.

My daily virtual classroom process is as follows: For fairness, I will create a pseudo-randomized list of students from which I will pick students to present solutions to assigned homework. I will start with the first name on the list and go in the listed order and cycle through the list during the semester. Once assigned, the student is responsible for preparing the homework assignment for the next class meeting. Typically this will be to prepare proofs to theorems under consideration or to prepare solutions to assigned exercises.

I will review the homework before class. Then during our class meeting I will go through the list of the students who are scheduled for presentation for that class and ask each to present a portion of their work through zoom. (My custom is to allow the student to dictate their work verbally while I write it on the

clipboard/document camera setup.) Other students should be prepared to critique solutions and to ask questions if the presentation is not understood. Read my document *Participation/Presentation Component* which adds details to the process.

Accommodations for Disabilities: If you have accommodations, please request them online so that I can access them before we meet in my office. If you are seeking accommodations you should make an appointment with a member of the professional staff in the Office of Accessibility office, 1244 Haley Center (844-2096).

In case of class disruption. *If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation (such as a COVID-19 outbreak), the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials*

Some comments about working on theorems for this course.

The level of difficulty of the problems and exercises in this class range from easy to very hard. By “easy” I mean a problem (e.g. proof of a theorems) that I would expect the majority of the class to be able to prove in a day or two; that is, by the next class after it was stated or considered. A medium problem may take two to three class meetings before a proof is produced and a “hard” problem even longer. There will be a range of difficulty among the problems assigned in class. For some of the harder problems I may state some hints. So, do not be surprised if you do not figure out the solution to a problem immediately.

Please read my short essay *MyModifiedSocraticMethod* online about my teaching pedagogy where I discuss this in more detail.

I think of the class problems as interesting puzzles and I find an incredible joy in figuring them out. So, much like reading a murder mystery, it’s not as much fun hearing someone exclaim, “The butler did it!” than it is to figure out who-dun-it for yourself. Also, once you’ve figured out the solution to an exercise, I guarantee that you will not forget it! So I strongly urge each one of you to work on each theorem for some time (at least a number of hours and in some cases days) before you ask someone in your study or discussion group what they figured out about it. If you don’t figure it out for yourselves, this preparatory work will make it easier for you to understand the solutions once they are presented during our Zoom sessions because you will already have found out some of the “clues.”