

MATH 4318, ANALYSIS II
COURSE SYLLABUS
SPRING 2020

INSTRUCTOR: ANDRZEJ SWIECH

LECTURES: MW 9:30-10:45 am, Clough 131

OFFICE: SKILES 206

OFFICE HOURS: M 1:00-2:00 pm, T 2:00-3:00 pm, W 11:00-12:00 am

PHONE: (404) 894-2705

E-MAIL: swiech@math.gatech.edu

COURSE WEB PAGE: <http://www.math.gatech.edu/~swiech/4318-s20.html>

TEXTBOOK: R. G. Bartle, *The Elements of Real Analysis*, 2nd edition.

MATERIAL TO BE COVERED AND COURSE OBJECTIVES: The course is the continuation of Analysis I. It introduces the students to the basic theory of real analysis. Its main objective is in developing the theoretical understanding of the subject. This is a proof based course where you are supposed to learn about the concepts and reasons why they are true. The course covers the following topics:

- (1) Functions of one variable: mean value theorem and its applications, the Riemann Stieltjes integral and its properties, improper integrals (sections 27-33).
- (2) Differentiation in R^n : Jacobians, chain rule, implicit and inverse function theorems, extrema, second derivative tests, Lagrange multipliers (sections 39-42).
- (3) Integration in R^n : definition and properties of the integral, sets with content, iterated integrals, change of variables (sections 43-45).

GRADING: There will be two one hour tests (February 17 and March 30) and the final exam. Notes and books will not be allowed during the tests and the final. You will be able to have a one single-sided page of notes for each test and one double-sided page of notes for the final exam. Part of your grade will also depend on the homework. The dates of the homework assignments, together with the information which problems are due, will be announced as the course progresses. Each test will count for 20% of the final grade, the homework will count for 25%, and the final exam will count for 35%. Your grade will be based on how well you have mastered the theory and how well you can solve problems. You will not be asked to reproduce proofs. To get an A, respectively B,C, and D, your final score will have to be greater than 85%, respectively 70%, 55%, and 40%. Some of these requirements may be lowered if the overall average score of the class is low (i.e. your grade may get curved up).

ACADEMIC INTEGRITY: Please be aware of the Georgia Tech Honor Code and follow it carefully. In particular please make sure that all the work you submit is your own. The Georgia Tech Honor Code can be found at <http://www.policylibrary.gatech.edu/student-affairs/code-conduct>.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES: If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible,

to discuss your special needs. Please also e-mail me as in order to set up a time to discuss your learning needs.

ATTENDANCE: Attendance in class is not required, however I encourage everybody to come to class as I will be expanding on the material available in the textbook.

COLLABORATION: I encourage the students to learn together and exchange ideas, including ideas about homework problems. However all the work submitted by you for grading must be your own.

LATE ASSIGNMENTS AND RE-SCHEDULED/MISSED EXAMS: Late homework will not be accepted. Make-up exams can be given if the exam was missed because of institute approved activities, illness, etc. (see <http://www.catalog.gatech.edu/rules/4>).

CAMPUS RESOURCES FOR STUDENTS:

Center for Academic Success: <http://success.gatech.edu>

Residence Life's Learning Assistance Program: <https://housing.gatech.edu/learning-assistance-program>

OMED: Educational Services: <http://omed.gatech.edu/programs/academic-support>

Communication Center: <http://www.communicationcenter.gatech.edu>

Academic advisors for your major: <http://advising.gatech.edu>

PERSONAL SUPPORT:

Georgia Tech Resources:

The Office of the Dean of Students: <http://grandchallenges.gatech.edu/office-dean-students>; 404-894-6367; Smithgall Student Services Building 2nd floor

Counseling Center: <http://counseling.gatech.edu>; 404-894-2575; Smithgall Student Services Building 2nd floor

Students Temporary Assistance and Resources (STAR): <https://studentlife.gatech.edu/content/star-services>

Stamps Health Services: <https://health.gatech.edu>; 404-894-1420

OMED: Educational Services: <http://www.omed.gatech.edu>

Womens Resource Center: <http://www.womenscenter.gatech.edu>; 404-385-0230

LGBTQIA Resource Center: <http://lgbtqia.gatech.edu>; 404-385-2679

Veterans Resource Center: <http://veterans.gatech.edu>; 404-385-2067

Georgia Tech Police: 404-894-2500