

MATH 4317 SYLLABUS

FALL 2003

Course Number: Math 4317 AG, AU

Course Name: Analysis I

Lecture Time: MWF 11:05–11:55 a.m.

Lecture Room: Skiles 254

Instructor: Dr. Christopher Heil
Office: Skiles 260
Office Phone: 404-894-9231
Email Address: heil@math.gatech.edu
Course Web Page: <http://www.math.gatech.edu/~heil>

Office Hours: MWF 4-5, and by appointment

Contacting me: I encourage you to contact me at any time by email. I try to check email evenings and weekends and to respond to questions quickly. Please don't be afraid to set up other appointment times if you are having trouble getting in touch with me.

Prerequisites: Math 2406 (Abstract Vector Spaces)

Textbook: *The Elements of Real Analysis*, by Robert G. Bartle

Material: Sections 1–25 (approximately)

Goals and Philosophy. The emphasis in this course is on rigorously *proving* facts about real numbers and functions of a real variable. You should have learned how to write a proof in MATH 2406.

Academic Dishonesty. All students are expected to comply with the Georgia Tech Honor Code. Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students.

Grading. We will have between 5 and 7 homework assignments, two in-class exams, and one final exam. With 6 homeworks, points would be scored as follows.

6 Homeworks	15 points each
Exam I	25 points
Exam II	25 points
<u>Final Exam</u>	<u>60 points</u>
TOTAL	200 points

Letter grades will be based on your accumulated points at the end of the quarter, according to standard 90%, 80%, 70%, 60% cutoffs (although I may adjust the cutoffs downward at the end of the quarter, depending on class distribution):

180–200	A
160–179	B
140–159	C
120–149	D
0–119	F

At the end of the course, I'll evaluate the class distribution and decide if a curve is needed. I'll only curve *down* from the above cutoffs, not up!

If we have more or fewer homeworks, the total number of points possible and the corresponding cutoffs will be adjusted accordingly.

Homework. Homeworks will be assigned approximately once every two weeks, and will usually be due one week after they are handed out. Homeworks will consist of problems selected from the book or problems that I make up. A subset of these will be selected for grading.

Homeworks should be written on the front side of the page only, and must be stapled. LATE HOMEWORKS WILL NOT BE ACCEPTED.

You are allowed (and encouraged) to work together with other students on the homework, as long as you each INDEPENDENTLY WRITE UP YOUR OWN SOLUTIONS. You are also allowed (and encouraged) to ask me questions, although you should try to think about the problems before asking. I strongly encourage you to work extra problems from the book on your own.

Exams. The tentative dates for the exams are:

Exam I	Friday, September 19 (in class)
Exam II	Friday, October 24 (in class)
Final Exam	Friday, December 12, 8:00–10:50 a.m.

The exams are closed-book and closed-notes, except that you will be allowed to bring one note sheet to each exam. The final is comprehensive.

Makeup exams are given only in extraordinary circumstances.

MATH 4317 SYLLABUS

SUMMER 2007

Course Number: Math 4317 AG, AU

Course Name: Analysis I

Lecture Time: TuTh 12:00–1:45 p.m.

Lecture Room: Skiles 246

Instructor: Dr. Christopher Heil
Office: Skiles 260
Office Phone: 404-894-9231
Email Address: heil@math.gatech.edu

Course Web Page: <http://www.math.gatech.edu/~heil>

Office Hours: TuThF 10:00-11:00, and by appointment

Contacting me: I encourage you to contact me at any time by email. I try to check email daily and to respond to questions quickly. Please don't be afraid to set up other appointment times if you are having trouble getting in touch with me.

Textbook: *The Elements of Real Analysis*, by Robert G. Bartle

Material: Sections 1–25 (approximately)

Prerequisites: Math 2406 (Abstract Vector Spaces)

Prerequisites. This is a *proof-based* course on Real Analysis. One of the main goals of the prerequisite course (MATH 2406) is to teach you proofs and proof-writing. If you haven't taken that course or an equivalent course where you learned to write proofs, you may find it quite difficult to jump into the abstract setting of this course. Unlike calculus, differential equations, etc., there are no *formulas*, only *concepts*, here, and the *proofs* of those concepts—the reasons *why* things are true.

Academic Dishonesty. All students are expected to comply with the Georgia Tech Honor Code. Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students. The institute honor code is available at http://www.deanofstudents.gatech.edu/integrity/policies/honor_code.php

Grading. We will have 5 homework assignments, two in-class exams, and one final exam. With 6 homeworks, points would be scored as follows.

5 Homeworks	25 points each
Exam I	35 points
Exam II	35 points
<u>Final Exam</u>	<u>55 points</u>
TOTAL	250 points

Letter grades will be based on your accumulated points at the end of the semester, according to standard 90%, 80%, 70%, 60% cutoffs (although I may adjust the cutoffs downward at the end of the semester, depending on class distribution):

225–250	A
200–224	B
175–199	C
150–174	D
0–149	F

At the end of the course, I'll evaluate the class distribution and decide if a curve is needed. I'll only curve *down* from the above cutoffs, not up!

Homework. Homeworks will be assigned approximately once every two weeks, and will usually be due one week after they are handed out. Homeworks will consist of problems selected from the book or problems that I make up. A subset of these will be selected for grading.

Homeworks should be written on the front side of the page only, and must be stapled. LATE HOMEWORKS WILL NOT BE ACCEPTED.

You are allowed (and encouraged) to work together with other students on the homework, as long as you each INDEPENDENTLY WRITE UP YOUR OWN SOLUTIONS. You are also allowed (and encouraged) to ask me questions, although you should try to think about the problems before asking. I strongly encourage you to work extra problems from the book on your own.

Exams. The tentative dates for the exams are:

Exam I	Tuesday, June 12 (in class)
Exam II	Tuesday, July 10 (in class)
Final Exam	Monday, July 30, 8:00–10:50 a.m.

The exams are closed-book and closed-notes, except that you will be allowed to bring one note sheet to each exam. The final is comprehensive.

Makeup exams are given only in extraordinary circumstances.

Course Syllabus

Professor: Dr. Christine Heitsch

Office: Skiles 211B

Phone: (404) 894 - 4758

Email: heitsch@math.gatech.edu

Webpage: <http://www.math.gatech.edu/~heitsch>

Office Hours: Monday 2:00 – 3:00pm and Tuesday/Thursday 1:30 – 2pm. If you need to meet at another time, send email to set up an appointment.

Lectures: Tuesday and Thursday from 12:05 – 1:25 in Skiles 170.

Textbook: M. Rosenlicht, *Introduction to Analysis*, Dover edition, 1986.

Course Description: “Real numbers, topology of Euclidean spaces, Cauchy sequences, completeness, continuity and compactness, uniform continuity, series of functions, Fourier series.”

Prerequisites: Math 2406 (Abstract Vector Spaces) or equivalent.

Course Topics: Set theory (Chapt. 1); Real numbers (Chapt. 2); Metric spaces (Chapt. 3); Continuous functions (Chapt. 4); Series (Chapt. 7, Sec. 2,3).

Grading Scheme: Grades will be calculated according to the following distribution:

30% Final Exam

40% Two Midterm Exams (20% + 20%)

30% Homework

Grades will be assigned on the standard scale:

A 90 or higher **B** 80 – 89 **C** 70 – 79 **D** 60 – 69 **F** Below 60

On an individual basis, significant improvement over the semester will be taken into account. The overall class distribution will also be carefully considered.

Final Exam: The final exam is scheduled for Thursday, December 15th from 11:30 AM - 2:20 PM. The exam will be cumulative and count for 30% of the final grade.

Midterm Exams: There will be two in-class exams, each counting for 20% of the final grade, for a total of 40%. The exams will be closed book, closed notes, no calculator, individual tests. The **tentative** exam dates are:

Midterm 1 Tuesday, September 27th

Midterm 2 Tuesday, November 1st

Exam dates will be confirmed at least a week in advance.

Homework: Homework will be assigned most weeks, and due one week later at the beginning of class. **Late homework will not be accepted.**

A subset of the assigned problems will be selected for grading.

Solutions must meet the formatting requirements below. **Illegible and/or unintelligible solutions will receive no credit.**

1. Be neatly and clearly written in complete, correct sentences.
2. Be written on the front side of the page only.
3. Be stapled together if having multiple pages.

Collaboration is allowed (and even encouraged) when working on homework problems. However, solutions must adhere to the following content guidelines.

1. Be written independently in a student's own words.
2. Clearly acknowledge any person with whom any part of the assignment was discussed.
3. Properly credit any outside resource consulted in completing the assignment.

Any solution which violates the content guidelines will receive no credit. Flagrant or repeated violations will be dealt with as a matter of academic integrity.

Attendance: Regular attendance is expected. Exceptions will be accommodated only for valid, documented reasons including (1) official representation of the Institute and (2) medical emergencies. Makeup exams will be given only under extraordinary circumstances.

Exceptions: Any student who may not be able to meet the requirements of the class as stated must speak with me individually within the first two weeks of class.

Academic Integrity: Students are reminded of the obligations and expectations associated with the Georgia Tech *Academic Honor Code* and *Student Code of Conduct*, available online through the Office of Student Integrity (<http://www.osi.gatech.edu/>) and the Honor Advisory Council (<http://www.honor.gatech.edu>).

Any violations must be reported directly to the Dean of Students.

Practice Problems: Beyond the assigned homework, additional “practice problems” will be suggested. You are strongly encouraged to work these problems (and others!) on your own and/or with other students to master the course material.

More Information:

- Grades will be posted on T-Square — <http://t-square.gatech.edu>
- Everything else will be posted on the course website — <http://www.math.gatech.edu/~heitsch/4317b-f11.html>

Updates: This syllabus is subject to modification. Any changes will be announced in class and posted on the course website.

Math 4317 – Analysis I
Lectures: MWF 13:05 – 13:55 in Skiles 270

Instructor: [Plamen Iliev](#)

E-mail: iliev@math.gatech.edu (I can answer only if you use your GT account!)

Office hours: MF 11:05-11:55am in Skiles 227

TA: Ruodu Wang

E-mail: ruodu.wang@math.gatech.edu

Office hours: Tuesday 12:30-13:30pm in Skiles 149

Textbook: *The Elements of Real Analysis*, by Robert G. Bartle, *second edition*.

Prerequisite: [Abstract Vector Spaces \(Math 2406\)](#)

Syllabus: We will cover most of the material in sections 1 through 24 and 34 through 38 from the textbook.

- Real numbers (Chapter I);
- Topology of Cartesian spaces (Chapter II);
- Convergence (Chapter III);
- Continuous functions (Chapter IV);
- Series (Chapter VI);

Grading: Grades will be based on homework (20%), two tests (20% each) and final exam (40%).

Homework: Homework will be assigned periodically. A proper subset of each assignment will be graded. You may consult with each other on the homework assignments, but you must write up and submit your own work in class on the due date. **Late homework will not be accepted.**

Test dates:

- Test 1 - Wednesday, February 17, 2010
- Test 2 - Wednesday, April 7, 2010
- Final exam – Wednesday, May 5, 2010, 2:50-5:40pm

[School Calendar](#)

MATH 4317, ANALYSIS I
COURSE SYLLABUS
SPRING 2009

INSTRUCTOR: ANDRZEJ SWIECH

LECTURES: MWF 2:05-2:55, SKILES 256

OFFICE: SKILES 235B

OFFICE HOURS: T 1:30-3:00 PM, W 1:00-2:00 PM

PHONE: (404) 894-2705

E-MAIL: swiech@math.gatech.edu

COURSE WEB PAGE: <http://www.math.gatech.edu/~swiech/4317.html>

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

MATERIAL TO BE COVERED AND COURSE OBJECTIVES: The course introduces the students to the basic theory of real analysis. Its main objective is in developing the theoretical understanding of the subject. The main themes of the course are the following:

- (1) The real numbers.
- (2) The topology of Euclidean spaces.
- (3) Convergence.
- (4) Continuous functions.
- (3) Infinite series.

GRADING: There will be two one hour tests (February 11 and March 27) and the final exam. Notes and books will not be allowed during the tests and the final. Part of your grade will also depend on the homework. Each test and the homework will count for 20% of the final grade, and the final exam will count for 40%. 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).

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.