

## Analysis II Syllabus (Math 5332 A/G)

**Instructor:** Dr. Shijun Zheng

**Lecture Hours & Location:** MW 2:00-3:15. MP 1314

**Office:** MP 3044

**Office Hours:** TR 2:00-3:30 or by appointment.

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**Course Web:** <http://math.georgiasouthern.edu/~szheng>

**Text:** *Analysis with an Introduction to Proof*, 4th Edition, Steven R. Lay

**References:** *Analysis II*, Terence Tao, 2006

<http://www.ams.org/bookstore-getitem/item=HIN-28>

*Elementary Analysis*, K. Ross, 2003 edition.

*Principles of Mathematical Analysis*, W. Rudin

*Advanced Calculus*, Gerald B. Folland, Prentice-Hall, 2002.

*Fourier Analysis and its Applications*. Gerald B. Folland.

**Course Description:** (3-credits) We will study selected topics from Chapters 6-9 in the text. Analysis II is the second of the Advanced Calculus course and is intended for undergraduate and graduate students, who have already been exposed to calculus. The emphasis is on learning how to give a rigorous proof. The material continues to cover basic theorems in differentiation (including applications of mean value theorem), Riemann integration, Fundamental theorem of Calculus, infinite series, sequence and series expansions of functions.

**Course Objectives:** Students will demonstrate their understanding of basic concepts of analysis of one variable. Students will learn to construct mathematical proofs.

**Prerequisites:** Grade of C or better in Math 5331 (Analysis I) or equivalent.

**Grading:** Your course grade will be based on the percentage of total points you have earned divided by the number of total points available. An approximation of the number of points available during the semester is: 65 points for homework and class participation, 30 points for group work and a term project, 2 tests worth 100 points each, and a cumulative final exam worth 100 points. The approximate total points available is then 395.

The grading scale is: A 85% or above; B 75–84 %; C 65-74%; D 55-64%; and F 54% or below.

**Homework:** *Practice on homework problems is strongly recommended.* The written work you submit for grading must be very neat so that it is easy-to-read by anyone. We will discuss the tentative course structure during the course.

**Group Discussions and Term Project.** During the course of the semester, several sets of problems will be given, either in-class or take-home. Students will form several groups to discuss the assigned problems for better understanding the materials. Near the end of the semester, each individual group will turn in a report that addresses one type of problem or topic, either from the text or from the references, and explain how the concepts, methods or techniques help their study or research in further development.

**Study Philosophy:** In addition to solving problems and reviewing class notes, you should also carefully read (and reread) and study (and restudy) the text on a regular basis as it is especially well-written for a class like this. Pay particular attention to the Practice subsections following many proofs. They are particularly insightful and address many of the difficulties you will have with mastering the concepts and techniques.

Remember, the beauty and truth lie in the details of the *Proof!*

**Attendance Policy:** Students are expected to attend each class meeting and pay attention. A student who misses class is responsible to find out what was discussed and learn the material that was covered on the missed day.

**Make-up Policy:** Late homework or project will not be accepted unless a reasonable excuse is given. No make-up exams will be given. When a student misses an exam the score from the final exam will be substituted for the missing exam score.

**Academic honesty:** Unless otherwise indicated, it is taken for granted that all work is your own. <http://students.georgiasouthern.edu/sta/guide/>

**Civility Statement:** See the Student Conduct Code at <http://students.georgiasouthern.edu/judicial/SCC08-09.pdf> Calculator is allowed but the tests will be designed so the use of calculator is not necessary. Cell phone should be turned off or set to vibration status during the class meeting.

**Disability Policy:** See <http://students.georgiasouthern.edu/disability/>

**Tutoring:** The Academic Success Center (ASC) offers free peer tutoring during the week. Contact the tutorial centers for exact hours at 681-0321 or <http://academics.georgiasouthern.edu/success/>.

**Final Exam:** Wednesday May 6, 3:00-5:00 pm.  
<http://students.georgiasouthern.edu/registrar/finalSchedule.htm>