

Math 3341
MWF 9:30–10:20
BELL 130

INTRO TO ANALYSIS
Syllabus

Fall 2004
Sec. 18801

Instructor: **Dr. Helmut Knaust**

office: **Bell Hall 124**

phone: **747-7002**/office (24hrs./day; if I'm not in, please leave a message)

internet: hknaust@utep.edu

<http://www.math.utep.edu/Faculty/helmut>

Office hours: **Mon, Wed, Fri 10:30–11:30**. Please feel free to make an appointment with me if these times are inconvenient for you. You can make an appointment simply by talking to me before or after class, or by calling the department at 747-5761.

You may also ask any questions directly via phone or e-mail. If I'm not in when you call, please leave a message on the voice-mail with your name, number, and a good time for me to call you back. I will try to respond to your phone or e-mail message as soon as possible.

You may also contact Dr. Duval, teaching the other section of this class, for help. He may be found at Bell Hall 303, 747-6846, MW 13:00–14:00, TR 10:00–11:00.

Website: <http://www.math.utep.edu/Faculty/helmut/classes.html>

Here you will find this syllabus, and relevant links, including the class notes, and homework and reading assignments for the whole semester, as they are announced. Other resources may become available.

Prerequisites: I will assume that you have a thorough knowledge of the material covered in the first two Calculus courses. If you consider taking Math 3325, I strongly recommend that you take Math 3325 “Principles of Mathematics” **before** you take Math 3341.

COURSE OBJECTIVES: Real Analysis is “Calculus with Proofs”. I expect you to

- thoroughly understand the definitions of the **basic concepts** of Analysis such as convergence, continuity, differentiability and integration;
- become familiar with the **fundamental results** of “Analysis on the Real Line” (highlights of the course include the Intermediate Value Theorem, the Mean Value Theorem, and the Fundamental Theorem of Calculus); and
- continue to develop your ability to use the **method of proof** to establish these fundamental results.

Textbook: **Analysis (class notes)**. You will receive these notes in class. These notes differ from other texts for proof-based courses, in that the proofs of the theorems are not included. The point of this is for you, the student, to fill in these details, in order to be more actively involved with the material. Read the preface carefully for more details.

GRADES:

Participation (40%) The course participants will take center stage during class meetings. You will regularly give presentations of proofs of results in the notes and present solutions to problems in class. Your presentations are the most important part of the course. **Your chances of passing the course without spending a significant amount of time on preparing in-class demonstrations are zero.** Your in-class work will be evaluated for both quality of the content and the presentation.

When you are in the audience, you are still expected to be actively engaged in the presentation. This means checking to see if every step of the presentation is clear and convincing to you, and speaking up when it is not. When there are gaps in the reasoning, the class will work together to fill the gaps.

At all times, the conversation will be guided by the principles of “mathematically accountable” talk (see details on separate handout).

Homework (20%) I will regularly assign written homework. Assignments will be due at the *beginning* of class. No late homeworks! (Incomplete homeworks *will* be accepted, though.) If an emergency prevents you from delivering your homework on time (or having someone else deliver it for you), please let me know as soon as possible. You are encouraged to work together on your homework, but you must write up your solutions by yourself.

Tests (10% each) There will be two in-class, closed-book tests on the following days:

Fri., 1 Oct.

Fri., 12 Nov.

Makeup tests can be given only in extraordinary and unavoidable circumstances, and with advance notice.

Final (20%) The final exam will be comprehensive over all material we discuss in class. The final will be on **Wed., 8 Dec., 10:00–12:45 p.m.**

Time requirement: I expect that you spend an **absolute minimum of six hours a week outside of class** on problem preparation, problem review, reading of the class notes, and review of your own notes. Students in the past have considered this to be a very hard class. Plan on spending time beyond the minimum requirement mentioned above to master the material.

Attendance policy: Due to the course structure, attendance is mandatory. An unexcused absence will result in a presentation grade of 0 for the day of the absence. I will usually excuse an absence if you tell me about it in advance, or, in cases of emergencies, as soon as possible afterwards.

Drop date: The deadline for student-initiated drops with a W is Mon., 18 Oct. After this date, you can only drop with the Dean’s approval, which is granted only under extenuating circumstances.

I hope everyone will complete the course successfully, but if you are having doubts about your progress, I will be happy to discuss your standing in the course to help you decide whether or not to drop. You are only allowed three enrollments in this course, so please exercise the drop option judiciously.