Course Description
Advanced Calculus I
MA 441/541-ET

Department of Mathematics
University of Alabama at Birmingham

January 2, 2013

Course Instructor: Shannon Starr
Office: 478A Campbell Hall
Phone #: (205) 934-8557
Email: slstarr@uab.edu
Office Hours: Drop in anytime or call for an appointment.

Meeting times: Monday-Thursday 3:35pm–4:25pm
Meeting locations: Education Building 130
Textbook: No textbook required. Lecture notes will be posted online.
BlackBoard: https://idm.uab.edu/cgi-bin/bb9login

Important dates:
First day of classes: January 6
Martin Luther King Jr., Holiday: January 20
Spring Break Holidays: March 24-28
Last day of class: April 18

Aims of the course:
Our goal in this class is threefold:

(1) to obtain a body of knowledge in Advanced Calculus, the basis of the analysis of real-valued functions of one real variable;

(2) to learn how to communicate ideas and facts in both a written and an oral form;

(3) and, perhaps most importantly, to become acquainted with – indeed, to master – the process of creating mathematics.
Course content:

- Real numbers
- Sequences and series
- Elementary functions

Assessment procedures:
The following rules, based on intellectual and academic honesty, will be in force.

1. Everybody will have the opportunity to present proofs of theorems. You will have the proof written out on paper and present it with the help of a document camera.

2. The audience (including the instructor) may challenge a statement made in the course of the proof at any point.

3. If the presenter is able to defend the challenged statement, he or she proceeds; if not, the presenter must sit down earning no points for this problem and losing the right to present again that day. The challenger has earned a challenge reward (see rules (10) and (12)).

4. A proof of a theorem will be considered correct if no one has objections (or further objections). Its written version will then be “published” by uploading it to Blackboard (it should have a title and the list of authors). The presenter and, if applicable, his or her collaborators (see rule (9)) will earn a total of 10 points at this time.

5. During class the instructor has the final decision on determining whether an argument may stand or not. His verdict may still be challenged after a proof is “published” (see rule (6)).

6. If someone other than an author discovers a flaw in a “published” proof, he or she will get the opportunity to explain the mistake and present a correct proof for a total of 20 points.

7. In preparing for proofs you must not rely on the authority of any materials outside of the class notes and the previously published proofs. More precisely, you can only refer to theorems in the notes and published proofs of theorems whose number is smaller than the one you are working on.

8. You must give credit where credit is due, i.e., during your presentation you must declare the points at which you had help and by whom.

9. It is also possible to report joint work. In such a case 4 points will be earned for the presentation while the other 6 are distributed among the collaborators as they see it.

10. The successor of a presenter will be chosen as the student with the smallest number of points among the volunteers taking into account the modification by the following rules (11) and (12). A die is rolled, if necessary.

11. You may volunteer for a particular problem by an e-mail to me. This (in the order received) establishes priority among volunteers with the same number of points.

12. For a student who has earned a challenge reward 20 points will be subtracted from his or her current score for the purpose of determining a successor. At the time a student is selected to prove a theorem the challenge reward expires.
13. Class attendance and participation is required. Absences from class are recorded in BlackBoard Learn. After 10 absences from class 10 points will be subtracted from your class score and the count of absences is set again to zero.

14. There will be no partial credit except as described above to share credit. Your final grade for the course depends only on your total score of points earned.

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**The grading scaled**

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If you are in MA 541 you need an additional 20 points for each level.

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* We will also have 6 HW assignments worth 5 points each during the semester.

**Disability Support Services**

If you are registered with Disability Support Services, please make an appointment with me as soon as possible to discuss accommodations that may be necessary. If you have a disability but have not contacted Disability Support Services (DSS), please call 934-4205 email at dss@uab.edu or visit DSS at 9th Avenue Office Building, 1701 9th Avenue South. (Note it has moved because of the closure of the Hill Center.)