Math 610-01, Winter 2011

Course Syllabus, Call # 23512

Title: Algebraic Topology
Text: no official text
Classroom: JB 387
Meeting time: 6-7:50 PM, Mondays and Wednesdays
Instructor: Dr. Corey Dunn
Dr. Dunn’s Office: JB 322
Dr. Dunn’s E-mail: cmdunn “at” csusb.edu
Dr. Dunn’s Phone: (909) 537-5368
Scheduled Final Exam: no final exam
Midterm Exam Date: Wednesday 10/27
Office Hours: 5–6 MW, 11–12, TR or by appointment.
Course Website: http://www.math.csusb.edu/faculty/dunn/610-111/610-111.html
(a copy of this syllabus may be found there)

General Information

1. Course Content: This course is an introduction to the broad field of Algebraic Topology. We will discuss the fundamental group of a topological space, and the theory of homology and cohomology. The specifics of what we cover will depend on the interests and flow of the class.

2. Information on Grading: The grading will be on a standard percentage basis, with the ranges of A for 90-100%, B for 80-89%, C for 70-79%, etc. The grades will be computed as follows:

   - Portfolio Entry: 10%
   - Homework Average: 20%
   - Midterm course outline: 30%
   - Final course outline: 40%

3. Information on the Portfolio Entry: You will be required to choose one proof or solution to write up for one of your M.A. portfolio entries. You must complete your portfolio entry (ready for submission into your portfolio) and obtain my signature before the final exam. I suggest choosing a problem and getting this done as soon as you find a problem or theorem that interests you, since at the end of the quarter it may be a while before I could get any submissions needing corrections back to you. Once you have my signature, you will earn your 10% for this grading item.

4. Information on Homework: I will assign problems to be completed for homework. Most of these will be proof-type problems and usually I will collect homework once we cover the
material and have a reasonable amount of time to work on the problems. The lowest homework score will be dropped, and the rest will be averaged to account for 20% of your final grade.

5. **Information on these “course outlines”:** There will be two course outlines due in this course, one “Midterm course outline”, due February 16th, and one “Final course outline”, due the Monday of finals week, March 21st. These will account for a large part of your grade in the course (by contrast, homework does not count as heavily).

The goal of an assignment of this sort is two-pronged. First, the difficulty in the development of the material in this course speaks to its content. That is, a firm understanding of the storyline helps in understanding what the story *means* in the rest of mathematics—more so than in other fields. For that reason, simply asking you to take an exam or two doesn’t really help you, and it doesn’t really measure your knowledge that well (and so it wouldn’t help me).

The assignment is the same for February 16th and for March 21st: type up a careful outline of the topics we’ve covered in the class, paying attention to how each topic discussed played a role in subsequent discussions. You may organize this “outline” however you wish, I saw “outline” because it may be the easiest for you to put together, although if you choose a flowchart or more inventive way of displaying these interdependencies in the material, that’s acceptable and encouraged. Here is what they would be graded on, and both of your outlines must contain these:

(a) Is all of the main course content present somewhere in your project/outline?

(b) Is there a clear understanding as to how each topic listed plays a role in subsequent development. For example, if you were doing an outline for your Math 553 class, there would probably be a heading for the Extreme value theorem, and listed underneath that heading you might have facts about sequences in compact spaces, and other lemmas about continuity. I want you to bring out the story behind each of the big concepts in the class.

(c) (This one deviates slightly from the concept of an “outline” a little.) There must be one homework question or proof (covered in class, most likely) carefully typed out and handed in with the outline. This exposition must contain a clear statement of what you’re proving, it must list all lemmas you are using (but not proved right there), and your proof must be correct and free of typos. (Essentially, I’m asking you for a portfolio entry as part of your outline, without the opening content that puts your result in context.) **Yes,** you may use this typed up result as a portfolio entry, provided its content is acceptable, something you would have to check with me first about.

You see, as you put together your final outline, you really just have to take your old one and add to it. You WILL have to make a separate entry as a proof that you type, however. We will also discuss these in class, I’m sure, as their due date gets closer.

6. **General information regarding the class:** Insert obvious cell phone statement here about turning them on silent mode during class. Not vibrate—silent mode. It’s embarrassing to you, and disruptive to the class.

If you are in need of an accommodation for a disability in order to participate in this class, please let me know ASAP and also contact Services to Students with Disabilities at UH-183, (909)537-5238.
Any academic dishonesty will be handled according to the CSUSB Bulletin, and will not be tolerated.

In general, I think this course is going to be awesome! I really can’t stress enough how important it will be to stay on top of your homework and to see me when you have difficulties. This is the only reason I have office hours, and, unless there is an unavoidable conflict, I will always be there. Email is the best way to contact me, as I check it often. Good luck, and ROCK ON!!!