

# Course Information

Math 5342–201

Summer II, 2009

July 10, 2009

**Instructor:** Prof. Lance D. Drager. Office: Math 236. Office Phone: 742–2580, Ext. 242.. If you let the office phone ring long enough, you'll get me or a voice mail system you can leave a message on. My e-mail address is [lance.drager@ttu.edu](mailto:lance.drager@ttu.edu).

Course materials will sometimes be posted on my web page, which is <http://www.math.ttu.edu/~drager>.

**Office Hours:** MWF 1:00–2:00, 4:00–5:00. You can come by outside of formal office hours; I'll usually have time to talk to you. Please feel free to come by if you need help.

**Text:** There is no specific text, but James R. Munkres, **Elements of Algebraic Topology** is recommended for supplemental reading.

**Learning Outcomes:** The students will understand the concept of differential equations, their solutions, and applications to physical sciences and engineering. In particular the students will learn to: recognize a differential equation and its solution, compute solutions of first order differential equations, compute solutions of linear differential equations, use Laplace transforms, recognize Fourier series, find numerical solutions.

**Learning Outcomes:** The students will understand the basic concepts of simplicial and singular homology and cohomology. In particular students will learn to: understand the motivation behind simplicial homology and how this generalizes to singular homology, the basic properties of homology, how to compute homology groups of specific spaces, the concepts of cohomology and cohomological products, and how to apply homology and cohomology to prove important theorems of topology.

**Assessment of Learning Outcomes:**

Since this is a graduate topics course taught rapidly in the summer session, the only requirement is attendance. There is no final exam.

For those who wish to advance their knowledge further I will give out some problems and try to make useful comments on the solutions.

Remember, you are responsible for all material covered in class and all announcements made in class. If you have to miss a class, you should check with

me or a classmate to see what happened.

**Formative Assessment:** Continuous formative assessment of the progress of the course will occur via ongoing communication between the instructor and the students. To this end, all students are encouraged to ask questions during class and to seek the instructor's help out of class when needed. Other activities in support of student-instructor communication will include: critical evaluation of problem solution and interviews with students doing poorly on the solutions.

**Accommodations for Disabilities:** Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact the instructor as soon as possible to make necessary accommodations. Students should present appropriate verification from Disabled Student Services, Dean of Students Office (AccessTECH). No requirement exists that accommodations be made prior to completion of this approved University process.

**Religious Holy Days:** A student may be absent from class for a religious holy day, as legally defined, and will be allowed to make up any missed examination or assignment within a reasonable time after the absence. You must notify me at the beginning of the session of any scheduled class days on which you will be absent for a religious holy day. See [http://www.depts.ttu.edu/officialpublications/catalog/\\_AcademicsRegulations.php](http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php)

**Academic Misconduct:** It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own work any work that they have not honestly preformed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.

For more information, and a description of what is considered to be misconduct, see [http://www.depts.ttu.edu/officialpublications/catalog/\\_AcademicsRegulations.php](http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php)

**Civility in the Classroom:** Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

For more information, see [http://www.depts.ttu.edu/officialpublications/catalog/\\_AcademicsRegulations.php](http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php)