

MA 59800 - Fall 2014- Syllabus Differential Topology

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Class times: TR 9:00 – 10:15 am in Univ 303

Homepage for the course: <http://www.math.purdue.edu/~rkaufman/MA598f14/>

Office hours: Tuesday and Thursday 1:30 – 2:20 am.

If you have a conflict with these times, we can arrange for another time to meet.

Texts: The main reference is:

Bott and Tu. *Differential Forms in Algebraic Topology*. Springer 1982.

Course description:

Differential topology is at the intersection of topology and analysis.

One could say that the main aim is to derive topological data using differential calculus. This has the advantage that many notions become more intuitive. For instance one can discuss cohomology using deRham forms and make Poincaré duality explicit. One can also represent characteristic classes using forms. This can be of computational as well as of conceptual help.

We will use the classic text of Bott and Tu for the most part.

Required Work: Besides the expected participation in class there may be homework assignments. There will be the choice of an oral presentation during the semester or a written project at the end of the semester.

Academic Adjustments for Students with Disabilities:

Students who have been certified by the Office of the Dean of Students – Adaptive Programs as eligible for academic adjustments should go to MATH 242 with a copy of their certification letter and request an *Information Sheet* for this semester that explains how to proceed this semester to get these adjustments made in Mathematics courses. It is not the same as last semester. **This should be done during the first week of classes.** Only students who have been certified by the ODOS-Adaptive Programs and who have requested ODOS to send their certification letter to their instructor are eligible for academic adjustments.

Students, who are currently undergoing an evaluation process to determine whether they are eligible for academic adjustments, are encouraged to find out **now** what procedures they will have to follow when they are certified, by requesting the above mentioned *Information Sheet* from MATH 242.