

# MAT 530: Topology & Geometry, II Spring 2010

## Final Exam Information

The final exam will take place on Sunday, May 16, 12:30-3pm, in Math P-131. Please bring paper and pencils. The exam will be closed book/notes/etc.

There will be office hours on Saturday, 5/15, 3:30-6pm; please do come if you have any questions. Please also stop by on Monday, 5/17, 1-3pm, to pick up your graded exam (please show up separately).

The format of the exam will be similar to the 06 final exam. You will need to do five problems chosen from three parts of the exam. There will be a bonus problem as well. As on the 06 final, scores on the remaining three problems will not count toward anything.

The final exam will cover the entire course, including *Notes on Vector Bundles*. You should be able to do all problems from the problem sets, from the midterms (06 and 10), from the 06 final, as well as the relevant exercises from the textbook and the geometry problems from past comps. You should be familiar with the tricks/techniques used in proving the main results in the book. Please review the solutions to the problem sets and to the exams as well as *Course Overview*.

You should have some understanding of sheaf theory and Hodge theory. You are not expected to be able to reproduce the technical aspects of Chapters 5 and 6. However, you should be familiar with the geometric applications, such as Mayer-Vietoris, relations between (co)homologies, relation between vector bundles and sheaf cohomology, Poincare duality, Kunneth formula.

If you are asked to prove anything, you should assume all the standard facts that are appropriate for the given question and state clearly what you are using. You can certainly use the statements of the main theorems (Inverse/Implicit FT, Frobenius, etc.), but should not simply quote the statement of an exercise, especially if it constitutes most of the problem. This applies to the comps as well.

*Good luck with all your finals and the comps!*