

MAT1342/MAT464: Topics for the Final exam

University of Toronto

The final exam will be **Thursday, April 23rd 2009 from 9am to 12pm in room SS-1084**. Each student must make an oral presentation of 55 minutes on an advance topic related with the subject of the course: Differential Geometry. Here is a list of possible topics:

1. Chern-Weil theory,
2. Hodge theory,
3. Determinant of the Laplacian and Polyakov's formula,
4. Isoperimetric inequalities and varifolds,
5. The Zoll metrics on the sphere of dimension 2,
6. Manifolds with corners and blow-ups,
7. Orbifolds,
8. Groupoids,
9. Holonomy of a connection,
10. Transversality and intersection numbers,
11. Gromov-Lawson theorem on connected sums of manifolds with positive scalar curvatures,
12. Clifford algebras and the spin group,
13. Spin manifolds,
14. The theory of connections on principal bundles.