

## Topics for Mathematics 5P10 Research Project (Fall 2011)

- Finite Simple Groups (Simplicity of  $A_n, n \geq 5$ ).
- G-sets, Group Actions and Representation of finite groups.
- Classification of Groups of Small Orders.
- Nilpotent Groups and Solvable Groups.
- Noetherian Rings and Modules.
- Jacobson Radicals.
- Modules over PID.

Note: The project is a survey type project and it should have 10-12 pages long. You need to choose a topic and to inform me your choice within a week after receiving this handout. Feel free to discuss with me any problems regarding your research project during my office hour.