**Research**

**Research Topic:**

The research topic is intended to showcase the student's ability to do independent study in mathematics. For that reason, it should be a subject over which the student has not had any coursework. However, if a student had a topic covered in one of his classes and he desires to do additional study over material which was not covered in class, then that choice is allowed. Note, *the research topic must be approved by the faculty research advisor.*

Topic approval - Due November 14th

You must submit the topic and have approval from the research advisor by above date. Please email me your topic and advisor by Oct 16. Submit at most a 1 page paper outlining the proposed research topic including a preliminary literature review of the subject. Below are the requirements for the paper which will be accomplished in Ma 481, Capstone 2.

**Research Paper:**

The research paper must be at least 8 pages in length and should not be more than 15 pages in length. It should discuss the topic chosen previously in the semester. This discussion should introduce the topic to the reader.

The paper should contain several sections. These include to some varying degree

Introduction: history of the topic and foundational terms,

Main results: the topic is developed here; the development should include at least one major result, its supporting lemmas and the proof of the result itself;

Examples: at least one example should be given which demonstrates how the major result(s) is/are used;

Conclusions: including possibly additional areas of study; and

A Bibliography: include sources both from textbooks, journals, and web sites.

REQUIREMENT:  One of your main sources must be one or more journal articles.  Math textbooks are published only after the mathematics has been significantly refined.  Journal articles are the primary locations for the birthing of new math.  You need to learn to read and understand these articles.