**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/Advisor Approval Form](file:///\\bju.edu\University\Courses\MA480\Public_html\Research\TopicalApproval.tex) - Due November 14th   
You will be expected to use Latex to update and print this form prior to seeking your prospective faculty research advisor's approval.

**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.

The paper should be typed. You will be introduced this semester to a mathematical type-setting software package called [LaTeX](http://www.latex-project.org/) (it is an open-source program which allows the type-setting of technical documents and runs on both macs and pcs ... I personally have had a very positive experience with the proTeXt package and am currently using TeXstudio editor - be sure to download the executable and install both Miktex and Texstudio from the menu), and this is what you will use to write your paper. [Additional LaTeX resources](file:///\\bju.edu\University\Courses\MA480\Public_html\Latex%20Files\latex.htm) that I have found are also provided.