Catalog Description

This course is designed for the student with a desire to pursue mathematical knowledge past Calculus. The student will learn the language of mathematics through logic and proof techniques in the context of calculus, geometry, number theory, and graph theory. The successful student will be prepared for the study of introductory abstract and theoretical mathematics.  
**Corequisite:** MAT 242 *Calculus II*

Course Goals

The goals of this course are to enable each student:

- To read and communicate intermediate level mathematics.
- To understand the language of logic and proof
- To verify or refute mathematical propositions
- To appreciate how abstract concepts can be applied to varying fields of mathematics

Objectives

In the process of taking this course each student will encounter:

- Elementary logic
- The Vocabulary and Language of Mathematics
- Proof: Concepts and Techniques
- The Principle of Mathematical Induction
- Applications of proof techniques

Required Materials

All of the required materials are available to you for *free!* They're in the library, on the Internet, in Spidel, ... There will be no required text.

Course Structure

The majority of the course material will be delivered in the lectures and lecture notes.
• **Assessment**
  
  • **Homework**
  
  There will be 14 homework assignments worth 30 points each. You may ask *anyone anything* when doing your homework. So, I will expect to see some pretty good work.

• **Final Exam**

  Your work on the 80 point Final Exam will be your own without aid from any outside sources.

• **Attendance**

  Attendance is required. Each absence will result in 10 points deducted from your total.

• **Final Grades**

  Your final point total will be calculated as follows:

<table>
<thead>
<tr>
<th>Section</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>420</td>
</tr>
<tr>
<td>Final Exam</td>
<td>80</td>
</tr>
<tr>
<td>Absences</td>
<td>-10</td>
</tr>
</tbody>
</table>

  Your final grade will be calculated as follows:

  - **A**: $\infty$ – 450, **B**: 449 – 400, **C**: 399 – 350, **D**: 349 – 300.

**A Few Important Dates**

- **January 18 (M)**: Triad Day – MLK Day Celebration
- **January 21 (Th)**: Deadline for Semester 1/Term 1 add/drops (4:30pm)
- **March 13 – 21**: Spring Break
- **March 20**: SMURCHOM V (WCU)
- **March 26 (F)**: Deadline to Withdraw (non-punitive)
- **April 7 (W)**: Work Day (No Classes)
- **May 13 (Th)**: Last Day of Classes