I. **Course Title and Number**  
   Research Topics in Pre–Calculus  
   Math 290

II. **Prerequisite**  
   Math 141 and Math 142 or their equivalents.

III. **Credit Hours:** 4  
     **Lecture Hours:** 4

IV. **Course Description**  
   This course is designed as a mathematics elective that will give students experience at  
   creating mathematical knowledge that is new to them, exploring trigonometric, geometric,  
   algebraic, and related topics in a directed research setting.

V. **Adopted Text**  
   None.

VI. **Course Objectives**  
   The following are objectives for the course:  
   1. Be able to formulate questions which advance lines of inquiry.  
   2. Produce results which expand the knowledge of the topics under study.  
   3. Work cooperatively with others on challenging long-term problems.  
   4. Be able to write about mathematical results in report form.

VII. **Grading**  
     Grading will follow the policy in the catalog.

VIII. **Course Outline**  
     Topics are chosen by the instructor for discussion and exploration. No more than two  
     weeks should be spent on any specific long-term problem. Topics or problems not requiring  
     knowledge of Calculus should come from at least three of these branches of mathematics:  
     —Algebra of Real and/or Complex Numbers  
     —Trigonometry  
     —Geometry  
     —Number Theory  
     —Combinatorics, Probability and Statistics  
     —Groups, Rings and Fields

IX. **Other Required Books and Materials**  
   A graphing calculator is required. Supplemental materials are available in the Learning  
   Resource Center or through OPASS.
X. Evaluation
Instructor will distribute the method of evaluation to students. The following are suggested guidelines:
75% projects and papers, which may be individual or group, and may involve construction of web pages
25% class participation

XI. Specific Management Requirements
Assignments will be evaluated according to instructor directives.