Departmental Syllabus  
Math 1930 – Mathematical Explorations


Prerequisites: MATH 10, 12 or 15 with a grade of “C-” or better or a mathematics proficiency level of 10 or above.

Calculators: A calculator may be required. Calculators with Computer Algebra Systems (CAS), (e.g. the TI-89, TI-92 and TI-Nspire with CAS keypad, or their equivalent), are not allowed in any math classes. On occasion, individual instructors may restrict the use of any type of calculator.

Course Description:
A course to enrich the students' general education by presenting the spirit and some insights of mathematics. The course satisfies the Mathematics Competency requirement, but will not serve as a prerequisite for further math courses. Topics will illustrate the nature of contemporary mathematics and the relationship between mathematics and our cultural heritage. Some of the content and format of the course may vary depending on the instructor’s interests. All instructors of the course will include a common unit on mathematical reasoning and problem solving. Other content and format of the course may vary depending on the instructor’s interests.

Student Learning Outcomes: Students should be able to:
- use mathematical reasoning to solve problems;
- summarize the history of progress on particular mathematical problems;
- describe the significance of highlighted mathematical discoveries; and
- apply general mathematical results in specific instances.

General Education Learning Outcomes: UW-Platteville students shall:
1-1 Recognize mathematical patterns to solve problems
1-2 Demonstrate ability to work with numbers, space and data
1-9 Assess the plausibility of proposed solutions
2-1 Demonstrate knowledge of the fundamental ideas at the heart of the arts and sciences, including fine arts, history, humanities, mathematics, the natural sciences, and the social sciences. It also includes the disciplines that cut across these categories, namely, ethnic studies, women’s and gender studies, and international education.

Topics and sections to be covered:

All sections will cover Chapter 1, Problems and Solutions
1.1 What is Mathematics
1.2 Problem Solving
1.3 It All Adds Up
1.4 The Mathematical Way of Thinking

Instructors will select at least three of the remaining chapters:
Chapter 2: Mathematics of Patterns: Number Theory
Chapter 3: Mathematics of Axiom Systems: Geometries
Chapter 4: Mathematics of Chance: Probability and Statistics
Chapter 5: Mathematics of Infinity: Cantor’s Theory of Sets
Chapter 6: Mathematics of Symmetry: Finite Groups
Chapter 7: Mathematics of Space and Time: Four-Dimensional Geometry
Chapter 8: Mathematics of Connection: Graph Theory
Chapter 9: Mathematics of Machines: Computer Algorithms
If you require an accommodation due to a disability, please make an appointment to see me as soon as possible to discuss arrangements for the accommodations. You will need a Verified Individualized Services and Accommodations (VISA) form from Services for Students with Disabilities.