

Northwest Arkansas Community College
Division of Science and Mathematics

Discipline Code

MATH

Course Number

2223

Course Title

Survey of Mathematical Structures II

Catalog Description

The fundamental element of this course is the understanding of the underlying concepts of elementary mathematics topics including counting methods, probability, statistics, geometry, measurement, and mathematical systems. Students in the course will prepare and present elementary math lessons and build team technology skills through the completion of an EAST project and/or prepare an independent research project related to elementary or middle school education. This course is designed for students planning to major in elementary education or middle school education at a senior institution. This course will not satisfy the math elective requirement for the Associate of Science degree at NWACC. Depending on the semester, computer-assisted, WWW, and hybrid versions of this course may be offered in addition to the traditional format.

Prerequisites

MATH 1204 with a grade of C or better, or appropriate placement scores.

Credit Hours

3 credit hours

Contact Hours

3 contact hours

Load Hours

3 load hours

Target Audience/Transferability

This course is designed for students enrolled in certain education programs and/or majoring in Elementary or Middle School Education. This course will not satisfy the mathematics elective requirement to receive an AS degree.

Student Learning Outcomes

Upon successful completion of this course students should exhibit mastery of certain knowledge and basic skills. Successful Survey of Mathematical Structures II students will be able to:

1. Demonstrate understanding of basic geometric concepts including angles, congruence, and similarity
2. Calculate area and volume of polygons
3. Demonstrate understanding of measurement in both the English and metric systems
4. Exhibit understanding of counting techniques and compute basic probabilities
5. Distinguish statistical sampling techniques
6. Compute measures of central tendency and dispersion
7. Demonstrate understanding of mathematical systems
8. Prepare and present core mathematics lessons using some form of technology that can be incorporated into the EMPACTS program and/or submit an independent research project that incorporates technology.

Required Forms of Assessment

Each instructor will include a set of departmental final exam questions on his or her final exam. These questions will be in direct support of the Student Learning Outcomes 1-7. The questions will compose at least 10% of the students' overall grade in the course and will be graded according to a standard grading rubric. Student Learning Outcome 8 will be assessed via a common grading rubric developed by and made available to all faculty members. The results of the departmental questions, lesson project, and overall student performance will be reported when final grades are reported.