Northwest Arkansas Community College
Science and Mathematics Division

Discipline Code
MATH

Course Number
1285

Course Title
Precalculus

Catalog Description
This course covers topics in college algebra and plane trigonometry. It is designed for students who will take MATH 2554.

Prerequisites
MATH 0103, Intermediate Algebra, with a grade of A or appropriate placement scores (see placement chart). NOTE: No credit can be given for those who have completed MATH 1203, MATH 1203R, MATH 1204 and/or MATH 1213.

Credit Hours
5 credit hours

Contact hours
60 contact hours

Load hours
5 load hours

Semesters Offered
Fall and Spring

ACTS Equivalent
MATH 1305, Pre-calculus

Grade Mode
A-F

Learning Outcomes

Upon successful completion of this course students will exhibit mastery of certain knowledge and basic skills. These skills include, but are not limited to:

- Recognize and perform operations with various types of functions including polynomial, rational, radical, exponential, logarithmic, and trigonometric
- Graph the basic functions listed above manually
- Solve equations and inequalities involving the basic functions listed above
- Solve systems of equations and inequalities graphically, algebraically, and with matrices.
- Define and evaluate trigonometric functions using right triangle trigonometry and the unit circle
- Verify and apply trigonometric identities and solve trigonometric equations.
- Define, use, and apply inverse trigonometric functions.
- Define, use, and apply the Law of Sines and Law of Cosines.
- Understand basic parametric equations and use them to plot points and draw graphs.
- Convert between rectangular & polar coordinates and graph polar coordinates and polar equations.
- Calculate basic limits
- Solve applications involving all of the above.

General Education Outcomes Supported

- Students develop higher order thinking skills.
- Students achieve mathematical literacy

Standard Practices

Topics list

- Review of radicals and exponents
- Analysis of graphs and functions
- Quadratic functions
- Polynomials of higher degree
- Rational, power, and root functions
- Inverse, exponential and logarithmic functions
- Systems of equations and matrices
- Polar and parametric equations
- The unit circle and trigonometric functions
- Trigonometric identities and equations
- Applications of trigonometry and vectors
- Limits

Learning activities

- Courses must, at a minimum, cover the core learning outcomes for each topic. Faculty may add to these outcomes, but may not omit any of them.
- The content of the course may be taught with or without the use of a graphing calculator as deemed appropriate by the instructor.

Assessments
- There will be a common departmental portion on the required comprehensive final exam.
- These questions will be in direct support of the Learning Outcomes.
- Instructors will report the results of the individual departmental questions when grades are submitted.

Grading Guidelines
- At least 70% of the student's final grade should come from proctored work.