# MATH 150 Plane Trigonometry

**Catalog Description:** (3) I, II, S. Trigonometric and inverse trigonometric functions; trigonometric identities and equations; applications involving right triangles and applications illustrating the laws of sines and cosines.

**Prerequisites:** C or better in MATH 100; or two years of high school algebra and a score of 25 or more on Enhanced ACT mathematics; or a score of at least 20 on the mathematics placement exam[1].

**Textbook:** *Fundamentals of Trigonometry*, Earl W. Swokowski and Jeffery A. Cole, Brooks/Cole Publishing Company, Ninth Edition.

**Course Objectives:** Cover the basic trigonometric concepts which underpin calculus and have useful application in other disciplines.

**Sessions:** Two hours of lecture and one hour of recitation per week.

| **Chapter** | **Topics** | **Sessions** |
|---|---|---|
| 2 | Angles | 2 |
| | The Trigonometric Functions | 2 |
| | Graphs of the Trigonometric Functions | 2 |
| | Trigonometric Functions of Angles | 2 |
| | Values of the Trigonometric Functions | 2 |
| | Trigonometric Graphs | 2 |
| | Additional Trigonometric Graphs | 2 |
| | Applied Problems | 2 |
| 3 | Verifying Trigonometric Identities | 1 |
| | Trignometric Equations | 2 |
| | The Addition and Subtraction Formulas | 1 |
| | Multiple Angle Identities | 2 |
| | Product-to-Sum and Sum-to-Product Formulas | 2 |
| | The Inverse Trigonometric Functions | 2 |
| 4 | The Law of Sines | 2 |
| | The Law of Cosines | 2 |
| | Trigonometric Form for Complex Numbers | 1 |
| 6 | Parabolas | 2 |
| | Ellipses | 2 |
| | Hyperbolas | 1 |
| | Plane Curves and Parametric Equations | 2 |
| | Polar Coordinates | 2 |
| | Polar Equations of Conics | 2 |
| **Reviews** | | 4 |
| **Total** | | 46 |

[1] The ACT assessment done by K-State is based on prior student's ACT scores and their performance in K-State courses. The assessment profile is available when the student comes to enroll at K-State for the first time and is included in their enrollment packet. The mathematics placement test and the arithmetic placement test are administered on a walk-in-basis in the Academic Assistance Center, 101 Holton Hall, on the K-State campus. For more information, call the Academic Assistance Center, 785-532-6492.