

# COLLEGEWIDE COURSE OUTLINE OF RECORD

## MAT 121, GEOMETRY-TRIGONOMETRY

COURSE TITLE: Geometry-Trigonometry

COURSE NUMBER: MAT 121

PREREQUISITES: Successful completion of MAT 111 Intermediate Algebra or demonstrated competency through appropriate assessment.

DIVISION: General Education

PROGRAM: General Education

CREDIT HOURS: 3

CONTACT HOURS: Lecture: 3

DATE OF LAST REVISION: Spring, 2004

EFFECTIVE DATE OF THIS REVISION: Fall, 2004

CATALOG DESCRIPTION: Includes polygons, similar figures, geometric solids, properties of circles, constructions, right triangles, angle measurements in radians and degrees, trigonometric functions and their application to right triangles, Pythagorean Theorem, laws of sine and cosine, graphing of trigonometric functions, trigonometric identities, vectors and polar coordinates. Introductory study of geometry and trigonometry.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Apply the Pythagorean Theorem.
2. Find the angles of regular polygons.
3. Apply properties of intersecting lines, transversals and angles.
4. Use proportion as applied to similar figures.
5. Identify the parts of a circle.
6. Determine the area of circles, sectors and segments.
7. Perform common constructions using a straightedge and compass.
8. Use lateral area, surface area, and volume formulas of common figures to find same or unknown measures of parts.
9. Define trigonometric functions.
10. Convert between degree measure and radian measure.
11. Use trigonometric tables and calculators to find sine, cosine and tangent of an angle and use the inverse functions to find an angle.
12. Solve right triangles.
13. Solve oblique triangles using the laws of sine and cosine.
14. Graph the sine and cosine functions.
15. Convert between rectangular and polar coordinates.
16. Use trigonometric identities.
17. Solve vector problems.
18. Solve applications of technology requiring geometric and trigonometric knowledge.
19. Use a scientific and/or graphing calculator proficiently as related to coursework.

20. Use computer technology which may include the Internet, the Web, email, or computer tutorials to enhance the course objectives.

COURSE CONTENT: Topical areas of study include --

Polygons	Similar figures
Geometric solids	Circles
Constructions	Right and oblique triangles
Radians and degrees	Trigonometric functions
Pythagorean Theorem	Graphs of Sine and Cosine functions
Trigonometric identities	Vectors
Polar coordinates	

#### ACADEMIC HONESTY STATEMENT:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

#### ADA STATEMENT:

Ivy Tech State College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.