

# Bossier Parish Community College

## Master Syllabus

**Course Prefix & Number:** MATH 112

**Credit Hours:** 3-3-0

**Course Title:** Trigonometry

**Course Prerequisites:** ACT score of 25 or higher, appropriate placement test score, or a grade of “C” or higher in MATH 102 or MATH 111

**Textbook(s):** Lial, Hornsby, Schneider, Daniels. Trigonometry, 12<sup>th</sup> edition. Pearson, 2020. ISBN: 9780135924891

**Course Description:** Methods and theory of trigonometry including trigonometric functions; solution of right triangles; identities and trigonometric equations; graphs; inverse trigonometric functions; solution of oblique triangles; and complex numbers.

### Learning Outcomes:

At the end of this course the student will:

- A. identify and classify angles and triangles and relate them to the trigonometric functions;
- B. solve problems using radian measure and circular functions;
- C. graph the trigonometric functions;
- D. expand mathematical reasoning skills and formal logic to develop convincing mathematical arguments through the verifying of trigonometric identities;
- E. evaluate inverse trigonometric functions and solve trigonometric equations; and
- F. analyze triangles to determine the proper technique to solve the triangles.

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s).)

1. demonstrate knowledge of basic terminology related to angles; (A)
2. define the six trigonometric functions of an acute angle with respect to a right angle; (A)
3. define the six trigonometric functions of an acute angle with respect to the unit circle; (A)
4. evaluate the six trigonometric functions of special right triangles; (A)
5. evaluate the six trigonometric functions using reference angles; (A)
6. use the trigonometric functions to determine the missing side in a right triangle; (A)
7. use the trigonometric functions to determine the missing angle in a right triangle; (A)
8. use the trigonometric functions to solve applications of right triangles; (A)
9. define the measure of an angle in radians; (B)
10. convert radian measure to degrees; (B)
11. convert degrees to radian measure; (B)
12. find arc length and the area of a sector; (B)
13. evaluate circular functions; (B)
14. solve application problems using related to angular and linear velocity; (B)
15. graph the trigonometric functions; (C)
16. graph transformations of the trigonometric functions; (C)
17. verify trigonometric identities; (D)
18. use the sum and difference identities, double angle identities and the half angle identities to determine exact trigonometric values; (D)
19. determine values for inverse trigonometric functions; (E)
20. solve linear and quadratic trigonometric equations; (E)
21. apply identities to solve trigonometric equations; (E)

22. solve equations involving inverse trigonometric functions; (E)
23. solve oblique triangles and their application using the law of sines; (F) and
24. solve oblique triangles and their application using law of cosines; (F)

**Course Requirements:** All students are required to take a comprehensive final exam. When this course is taken in an online environment, the department has established a minimum grade of 60% on the final exam required to earn a grade of “C” or higher in the course. If this minimum score is not obtained by the student, then the student shall refer to the policy outlined in the course syllabus which will supersede the course grading scale shown below.

**Course Grading Scale:**

- 90 – 100 = A
- 80 – 89 = B
- 70 – 79 = C
- 60 – 69 = D
- 0 – 59 = F

**Attendance Policy:** The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

**Course Fees:** This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams and/or clinical fees.

**Nondiscrimination Statement:** Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

Title VI, Section 504, and ADA Information  
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