TEXT: Trigonometry, 11th Edition. Lial, Hornsby, Schneider, Daniels
ISBN: 9780134306025

CATALOG DESCRIPTION: Prerequisites: Mathematics 1314 or equivalent.
In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. (3 LEC)
This course is the prerequisite for MATH 2412 and Physics 1401.

Student Learning Outcomes:
Upon successful completion of this course, students will:
1. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
2. Graph trigonometric functions and their transformations.
3. Prove trigonometric identities.
4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Use the concepts of trigonometry to solve applications.

MATH 1316 is a Tier I course in the Quantitative Reasoning learning category. Knowledge and skills that are important to your success in other college courses will be introduced and reinforced in Tier I. The Quantitative Reasoning category promotes the application of mathematics to increase your ability to solve “real-world” problems. When you are quantitatively literate, you can use logic and critical thinking in new way. www.dcccd.edu/core

Core Objectives:
MATH 1316 is part of the Mathematics Foundational Component Area 020.
1. Courses in this category focus on quantitative literacy in logic, patterns, and relationships.
2. Courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.
3. MATH 1316 develops the following Core Objectives:
   
   Critical Thinking (CT) - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
   Communication (COMM) - to include effective development, interpretation and expression of ideas through written and visual communication
   Empirical and Quantitative Skills (EQS) - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

MATH 1316 develops Critical Thinking, Communication, and Empirical and Quantitative Skills by requiring students to solve and analyze applications of trig functions and their graphs.

CHAPTERS/UNITS COVERED:

Chapter 1: Trigonometric Functions
Chapter 2: Acute Angles and Right Triangles
Chapter 3: Radian Measure and the Unit Circle
Chapter 4: Graphs of the Circular Functions
Chapter 5: Trigonometric Identities
Chapter 6: Inverse Circular Functions and Trigonometric Equations
Chapter 7: Applications of Trigonometry and Vectors
Chapter 8: Complex Numbers, Polar Equations, and Parametric Equations
This class meets on TR from 10:30 am to 11:50 am in H112. For special help students are encouraged to come to the STEM Resource Center, K137, during hours when tutors for your course are available. Consult your instructor or check the bulletin board in K137 for the appropriate hours.

INSTITUTIONAL POLICIES

Institutional Policies of Brookhaven College may be found at the following link:
https://www.Brookhavencollege.edu/syllabusaddendum

The institutional policies covered are:
- Drop/Withdrawal Policy
- Six Drop Rule
- Repeating this Course
- Financial Aid Statement
- Financial Aid Certification of Attendance
- International Students
- Religious Holidays
- ADA Statement
- Academic Integrity
- Grade Reports
- Family Educational Rights and Privacy Act (FERPA)
- Institutional Equity
- Instructors Right to Modify

EVALUATION PROCEDURES

Mandatory Quizzes 10%
Homework 10%
Tests 60%
Final Exam 20%

Exams will be taken in class. If you cannot take the exam on the scheduled date, you must arrange to take the exam early. If there is an emergency on the day of the exam, contact the instructor BEFORE the time the exam is to be taken. Failure to take the exam on or before the scheduled date will result in a grade of zero unless given approval by the instructor. The lowest of the four test grades will be replaced with the grade on the Final Exam (if it is higher).
The scale used to determine your final performance grade is:

- 90 to 100: A
- 80 to 89: B
- 70 to 79: C
- 60 to 69: D
- 0 to 59: F
- Withdrawal: W

TI Graphing calculator required. TI-84 PLUS calculator recommended. NO TI N-Spire, TI-89 OR TI-92.

Incomplete grades are given when an unforeseen emergency prevents a student from completing the work in a course. The division Dean must approve all “I” grades.

**IMPORTANT DATES**

- **January 2** (Thursday): College buildings and offices open
- **January 13** (Monday): Faculty Reports
- **January 20** (Monday): Dr. Martin Luther King, Jr. Day - Holiday
- **January 21** (Tuesday): Classes Begin
- **February 3** (Monday): 12th Class Day (Certification Date)
- **February 27 - 28** (Thursday thru Friday): Professional Development Days -- Thursday and Friday day classes will not meet. Friday evening, Saturday and Sunday classes will meet.
- **March 2** (Monday): Classes Resume
- **March 16-20** (Monday thru Friday): Spring Break - College buildings and offices will be closed for the week.
- **March 23** (Monday): Classes Resume
- **April 10** (Friday): Holiday
- **April 13** (Monday): Classes Resume
- **April 16 (Thursday)**: Last Day to Withdraw*
- **May 11-14** (Monday thru Thursday): Final Exams
- **May 14** (Thursday): Semester Ends
- **May 18** (Monday): Last Day for faculty to submit grades electronically through eConnect to the Registrar's Office.

May Graduation

Ceremony dates may vary at the colleges depending on space available.
DAY

Tue, Jan 21
1.1 Angles
1.2 Angle Relationships and Similar Triangles

Thu, Jan 23
1.3 Trigonometric Functions
1.4 Using the Definitions of the Trigonometric Functions

Tue, Jan 28
2.1 Trigonometric Functions of Acute Angles
2.2 Trigonometric Functions of Non-Acute Angles

Thu, Jan 30
2.3 Finding Trigonometric Functions Values Using a Calculator
2.4 Solving Right Triangles

Tue, Feb 4
2.5 Further Applications of Right Triangles, Quiz #1

Thu, Feb 6
Review Chapter 1 and 2

Tue, Feb 11
Test 1 Chapters 1 and 2

Thu, Feb 13
3.1 Radian Measure
3.2 Applications of Radian Measure, Quiz #2

Tue, Feb 18
3.3 The Unit Circle and Circular Functions
3.4 Linear and Angular Speed, Quiz #3

Thu, Feb 20
4.1 Graphs of the Sine and Cosine Functions
4.2 Translations of the Graphs of the Sine and Cosine Functions, Quiz #4

Tue, Feb 25
4.3 Graphs of the Tangent and Cotangent Functions
4.4 Graphs of the Secant and Cosecant Functions, Quiz #5

Thu, Feb 27
No class – Professional development

Tue, Mar 3
Review Chapter 3 and Chapter 4

Thu, Mar 5
Test 2 Chapters 3 and 4

Tue, Mar 10
5.1 Fundamental Identities
5.2 Verifying Trigonometric Identities, Quiz #6

Thu, Mar 12
5.3 Sum and Difference Identities for Cosine
5.4 Sum and Difference Identities for Sine and Tangent, Quiz #7
Spring Break March 16 – March 20

Tue, Mar 24  
5.5 Double-Angle Identities  
5.6 Half-Angle Identities, Quiz #8

Thu, Mar 26  
6.1 Inverse Circular Functions, Quiz #9

Tue, Mar 31  
6.2 Trigonometric Equations I, Quiz #10

Thu, Apr 2  
6.3 Trigonometric Equations II, Quiz #11

Tue, Apr 7  
Review Chapters 5 and 6, Quiz #12

Thu, Apr 9  
Test 3 Chapters 5 and 6

Tue, Apr 14  
7.1 Oblique Triangles and the Law of Sines,

Thu, Apr 16  
7.2 The Ambiguous case of the Law of Sines  
Last day to withdraw

Tue, Apr 21  
7.3 The Law of Cosines,  
7.4 Geometrically Defined Vectors and Applications

Thu, Apr 23  
7.5 Algebraically Defined Vectors and the Dot Product,

Tue, Apr 28  
Review Chapter 7

Test 4 Chapter 7 in the Testing Center on or before Mon, May 4

Thu, Apr 30  
8.1 Complex Numbers  
8.2 Trigonometric (Polar) Form of Complex Numbers

Tue, May 5  
8.3 The Product and Quotient Theorems  
8.4 De Moivre’s Theorem; Powers and Roots of Complex Numbers

Thu, May 7  
Review Comprehensive Final Exam

Tue, May 12  
Comprehensive Final Exam Including Chapter 8 in the classroom, H112  
10:00 – 11:50 AM