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](http://www.dcccd.edu/core)

**Core Objectives:**
MATH 1316 is part of the Mathematics Foundational Component Area 020.

i. Courses in this category focus on quantitative literacy in logic, patterns, and relationships.

ii. Courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

iii. 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: Trigonometric 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 at High School per the school schedule. 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**

Your final course average is a weighted average. The following weights (percentages) will be used to determine your final course grade.

- Homework Average 5%
- Weekly online quizzes 5%
- Quiz Average (memorization) 10%
- Test Average (4 tests) 60%
- Comprehensive Final Exam 20%

**The grade on the Final Exam may replace one test grade if the final exam grade is higher AND the homework average is 80% or higher.**

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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**
- April 16 (Thursday)*: Last Day to Withdraw*
- May 14 (Thursday): Semester Ends

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**Trigonometry/11th Edition**
Lial/Hornsby/Schneider/Daniels

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**WEEK** | **SECTIONS**
---|---
1/7-1/10 | 2.1 Trigonometric Functions of Acute Angles
         | 2.2 Trigonometric Functions of Non-Acute Angles
1/13-1/17 | 1.1 Angles
         | 1.2 Angle Relationships and Similar Triangles
         | 1.3 Trigonometric Functions, **Quiz #1 & #2**
1/20-1/24 | 1.4 Using the Definitions of the Trigonometric Functions
         | 2.3 Finding Trigonometric Functions Values Using a Calculator
1/27-1/31 | 2.4 Solving Right Triangles, **Quiz #3 & #4**
         | 2.5 Further Applications of Right Triangles
         | **Unit 1 Test Chapters 1 & 2**
2/3-2/7  | 3.1 Radian Measure
         | 3.2 Applications of Radian Measure
2/10-2/14 | 3.3 The Unit Circle and Circular Functions, **Quiz #5**
         | 3.4 Linear and Angular Speed
2/18-2/21 | 4.1 Graphs of the Sine and Cosine Functions **Quiz #6**
         | 4.2 Translations of the Graphs of the Sine and Cosine Functions
2/24-2/28 | 4.3 Graphs of the Tangent and Cotangent Functions
         | 4.4 Graphs of the Secant and Cosecant Functions, **Quiz #7**
3/2-3/6  | **Unit 2 Test Chapters 3 & 4**
         | 5.1 Fundamental Identities
         | 5.2 Verifying Trigonometric Identities **Quiz #9**
**SPRING BREAK**
3/16-3/20 | 5.3 Sum and Difference Identities for Cosine
         | 5.4 Sum and Difference Identities for Sine and Tangent
         | 5.5 Double-Angle Identities **Quiz #10**
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<thead>
<tr>
<th>Date</th>
<th>Topics</th>
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<tbody>
<tr>
<td>3/23-3/27</td>
<td>5.6 Half-Angle Identities, Quiz #11 &amp; #12</td>
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<td>6.1 Inverse Circular Functions</td>
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<td>3/30-4/3</td>
<td>6.2 Trigonometric Equations I</td>
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<td>6.3 Trigonometric Equations II</td>
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<td>4/6-4/10</td>
<td><strong>Unit 3 Test Chapters 5 &amp; 6</strong></td>
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<td>7.1 Oblique Triangles and the Law of Sines</td>
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<td>7.2 The Ambiguous case of the Law of Sines</td>
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<td>4/13-4/17</td>
<td>7.3 The Law of Cosines</td>
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<td>7.4 Geometrically Defined Vectors and Applications</td>
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<td>4/20-4/24</td>
<td>7.5 Algebraically Defined Vectors and the Dot Product</td>
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<td><strong>Unit 4 Test Chapter 7</strong></td>
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<td>4/27-5/1</td>
<td>8.1 Complex Numbers</td>
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<td>8.2 Trigonometric (Polar) Form of Complex Numbers</td>
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<td>8.3 The Product and Quotient Theorems</td>
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<td>8.4 De Moivre’s Theorem; Powers and Roots of Complex Numbers</td>
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<td>5/4 – 5/8</td>
<td>Review for final</td>
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<td>5/11 – 5/14</td>
<td><strong>Comprehensive Final Exam</strong> <em>(includes Chapter 8)</em></td>
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<td>5/15</td>
<td>Class ends</td>
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1/14/2020