MATH 1316 COURSE SYLLABUS
PLANE TRIGONOMETRY
BROOKHAVEN COLLEGE
MATH/SCIENCE DIVISION

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.

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: Graphs of the Circular Functions

12/4/2019
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
Please allow a 48 response time from your instructor.

This class is a four and a half week INET course that begins on 12/13/19 and ends 1/12/20. 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

An online midterm exam and a comprehensive final exam must be proctored. These two exams will count 40% of the performance grade. MyMathLab Homework will count 15%, and MyMathLab Chapter Quizzes will count 45% of the performance grade (quizzes can be taken at home).

No make-up tests and quizzes will be given and there will be no extensions of deadlines unless arrangements are made prior to the test deadline.
The scale used to determine the final course grade is:

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

**Testing Procedures**

The midterm and final exams must be proctored and your identification will be verified. You have two options for taking your MIDTERM and FINAL Exams. You must choose ONE of the following:

**Option #1**

You may visit your local testing center on any campus. I will arrange your exam password with your chosen testing center. You must notify me by email of which testing center you will use by the second week. If you choose to use a testing center outside of the DCCCD, please also send me that testing center's contact information. Make sure you know the procedures and hours of operation of that testing center.

**Option #2**

You may use a free online exam monitoring service offered by the DCCCD called Respondus Monitor. This option does require you to have access to a web cam within a private space. Your identification will be verified and your exam will be monitored via web cam. You must notify me by email by the second week if you choose this testing option.

**No notecards, formulas, or cheat sheets will be allowed on the Midterm and Final Exams**

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.
SECTIONS
1.1 Angles
1.2 Angle Relationships and Similar Triangles
1.3 Trigonometric Functions
1.4 Using the Definitions of the Trigonometric Functions

2.1 Trigonometric Functions of Acute Angles
2.2 Trigonometric Functions of Non-Acute Angles
2.3 Finding Trigonometric Functions Values Using a Calculator
2.4 Solving Right Triangles
2.5 Further Applications of Right Triangles,

3.1 Radian Measure
3.2 Applications of Radian Measure,
3.3 The Unit Circle and Circular Functions
3.4 Linear and Angular Speed,

4.1 Graphs of the Sine and Cosine Functions
4.2 Translations of the Graphs of the Sine and Cosine Functions,
4.3 Graphs of the Tangent and Cotangent Functions
4.4 Graphs of the Secant and Cosecant Functions,

5.1 Fundamental Identities,
5.2 Verifying Trigonometric Identities,
5.3 Sum and Difference Identities for Cosine,
5.4 Sum and Difference Identities for Sine and Tangent
5.5 Double-Angle Identities
5.6 Half-Angle Identities,

6.1 Inverse Circular Functions,
6.2 Trigonometric Equations I
6.3 Trigonometric Equations II,

7.1 Oblique Triangles and the Law of Sines
7.2 The Ambiguous case of the Law of Sines
7.3 The Law of Cosines
7.4 Geometrically Defined Vectors and Applications
7.5 Algebraically Defined Vectors and the Dot Product

8.1 Complex Numbers
8.2 Trigonometric (Polar) Form of Complex Numbers
8.3 The Product and Quotient Theorems
8.4 De Moivre’s Theorem; Powers and Roots of Complex Numbers

Review Comprehensive Final Exam
<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 8, 2019</td>
<td>December 9, 2019</td>
<td>December 10, 2019</td>
<td>December 11, 2019</td>
<td>December 12, 2019</td>
<td>December 13, 2019</td>
<td>December 14, 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.1-1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>1.4</td>
<td>2.1</td>
<td></td>
<td>2.2-2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3-2.4</td>
<td>2.5</td>
<td>3.1-3.2</td>
<td>3.3-3.4</td>
<td>Quiz #2 Due</td>
<td>4.1-4.2</td>
<td>4.3-4.4</td>
</tr>
<tr>
<td>Quiz #3 Due</td>
<td>5.3-5.4</td>
<td>5.5-5.6</td>
<td>Quiz #4 Due</td>
<td>Midterm Exam Due</td>
<td>6.1-6.2</td>
<td></td>
</tr>
<tr>
<td>5.1-5.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quiz #5 Due</td>
<td>7.1-7.2</td>
<td>7.3-7.4</td>
<td>7.5</td>
<td>Quiz #6 Due</td>
<td>8.4</td>
<td>8.4</td>
</tr>
<tr>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
<td>8.1-8.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Exam Due</td>
<td>Quiz #7 &amp; #8 Due</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Quiz #1 - Chapter 1  
Quiz #2 - Chapter 2  
Quiz #3 - Chapter 3  
Quiz #4 - Chapter 4  
Midterm Exam will assess material covered in chapters 1 - 4  
Quiz #5 - Chapter 5  
Quiz #6 - Chapter 6  
Quiz #7 - Chapter 7  
Quiz #8 - Chapter 8  
Final Exam will assess all material covered this semester (Comprehensive)