Math 115: Trigonometry
Course Syllabus
Department of Mathematical Sciences,
Central Connecticut State University

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Office Hours: By Appointment

Welcome to Trigonometry!
With a good faith effort on your part, you can experience success in this course. But you must work hard and work smart.

An online access is required for this class please purchase the code
For class attendance you are required to have a functioning camera

Course Description:
This course together with Pre-Calculus (Math 121) is a pre-requisite for Calculus I (Math 152), which is required for students working toward a BA in Mathematics or a BS with certification to teach secondary school mathematics. In addition, it is required for students majoring in computer science, earth science, chemistry, and physics and for students in the engineering transfer program. Also, Math 115 is required for students in some programs in the School of Technology. It is also suited for students in the elementary mathematics major BS program. Math 115 is a prerequisite for PHYS 121, a course required of all biology majors. Other students may elect this course to fulfill a general education requirement in Skill Area II. Students required to take both Math 115 and Math 116 may elect instead to take Math 119 (Pre-Calculus with Trigonometry), a four-credit course. Similarly, students required to take both Math 115 and Math 125 may elect instead to take Math 124 (Applied Calculus with Trigonometry), also a four-credit course.

Prerequisite: MATH 101 (C- or higher) or Placement Exam.

Attendance policy: We shall be working together doing problems in class to better prepare for the exams. Because of this, I will be taking attendance. Since we will be meeting only 30 times, you get only two Excused Absence. Every subsequent absence will result in a loss of 1% on your final grade for the course. For example, suppose your test grades give you a 71 average (C-). Say you missed 4 classes, which is 2 more than allowed. Your final grade for the course would be 71 - 2 = 69 = D+.
Please come to class.
Estimated Course Evaluation Plan (subject to change):

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework and Quizzes</td>
<td>30%</td>
</tr>
<tr>
<td>Exams (2)</td>
<td>20% Each</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
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</tbody>
</table>

**University Policies:**
1. You must take the final examination at the time specified.
2. In the event of a weather emergency which requires curtailment or cancellation of classes, listen to WTIC (1080 AM) or call (860) 832-3333 for the “general snow message.”
3. The last day to withdraw from a course is Monday, April 19. Approvals for withdrawal are not required; however, it is strongly recommended that students consult with their academic advisors prior to deciding to withdraw. Cessation of attendance notice to the instructor, or telephone calls to the Enrollment Center are not considered official notice of a student’s intention to drop the course.
4. After April 19 withdrawals are allowed only under extenuating circumstances and require approval of the course instructor, department chair and dean of the School of Arts and Sciences.
5. You are responsible for understanding and abiding by the University’s policy on academic integrity. Information on the policy may be found at [http://www.ccsu.edu/AcademicIntegrity/](http://www.ccsu.edu/AcademicIntegrity/). This policy is rigorously enforced by the Department of Mathematical Sciences.

**Electronic Devices Policy:**
Cell phones, laptops, MP3’s, PDA’s, or any form of personal electronic or communication devices are not to be used during class, exams, or quizzes. Permission may be granted by the instructor under exceptional circumstances.

**Resources Available:**
1. If you need help, take advantage of my office hours. Do not wait until just before the first test to do so.
2. The Learning Center is located in Willard Hall, Room 101. Free tutoring is available here. A schedule for hours the Center is open will be posted soon after the beginning of the semester.
3. Form a study group with other students in your section. Explaining solutions to homework problems to each other is a good way to learn.
4. A list of private tutors for hire is available in the math department office, Room 107 Marcus White, 832-2835.

**If you are a student with a documented disability, and would like to request academic accommodations, you are encouraged to contact Student Disability Services (SDS) at 860-832-1952, or email disabilityservices@ccsu.edu. Please visit the SDS website at [http://www.ccsu.edu/sds/](http://www.ccsu.edu/sds/) to download an Intake form and documentation requirements. Temporary impairments may also qualify for accommodations. Central Connecticut State University provides reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act for students with documented disabilities on an individualized basis.**
## Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>January 18</td>
<td>Academic semester begins (classes begin January 26)</td>
</tr>
<tr>
<td>January 25</td>
<td>Last day for full-time students to withdraw with 100% refund</td>
</tr>
<tr>
<td>January 26</td>
<td>Classes begin</td>
</tr>
<tr>
<td>January 26 – Feb. 1</td>
<td>Add/Drop Period</td>
</tr>
<tr>
<td>February 12-15</td>
<td>Presidents’ Day Holiday - No Day or Evening Classes</td>
</tr>
<tr>
<td>April 19</td>
<td>Withdrawal from full semester courses without approval “W” will be entered</td>
</tr>
<tr>
<td>April 2</td>
<td>No Day or Evening Classes (University is Open)</td>
</tr>
<tr>
<td>May 7</td>
<td>Last Day of Classes</td>
</tr>
<tr>
<td>May 12</td>
<td>Final Exams for this course from 7:45 PM to 9:45 PM</td>
</tr>
<tr>
<td>May 23</td>
<td>University Spring Commencement</td>
</tr>
<tr>
<td>May 31</td>
<td>Semester Ends</td>
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## Statement on Discrimination and Harassment

Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex, (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns about should contact the Office of Equity & Inclusion (OEI) at 860-832-1652, Student Affairs at 860-832-1601, or their faculty member. The OEI is located on the main floor of Davidson Hall, room 119.

## Sexual Misconduct, Intimate Partner Violence and Stalking

Central Connecticut State University (CCSU) will not tolerate sexual misconduct against students, staff, faculty, or visitors in any form, including but not limited to: sexual assault, sexual exploitation, sexual harassment or stalking, as defined in CCSU policies. For additional information, please consult the CCSU policy at [https://www.ccsu.edu/diversity/policies/index.html](https://www.ccsu.edu/diversity/policies/index.html). All faculty members and staff have a duty to report incidents of sexual harassment including sexual misconduct, intimate partner violence and stalking to Pamela Whitley, Title IX Officer, Office of Equity & Inclusion, Davidson Hall, 119.

**To file a report, contact:** Equity & Inclusion (860-832-1652), Student Conduct (860-832-1667) or Student Affairs (860-832-1601). For criminal complaints, contact the University Police (860-832-2375).

**For support and advocacy, contact:** Office of Victim Advocacy at 860-832-3795 or jflanagan@ccsu.edu; Student Wellness Services at 860-832-1945 (confidential); Women’s Center at 860-832-1655; the local YWCA’s Sexual Assault Crisis Services Hotline at 860-223-1787 (confidential) and Prudence Crandall Center for Domestic Violence (confidential) at 888-774-2900 (24-hour hotline).
Topics considered:

Note that some topics covered from algebra have been dealt with in previous courses. Students are expected to be familiar with these algebra concepts already covered in Math 099 and Math 101. Students are also expected to be familiar with the use of graphing calculators. For those students in need of brushing up on algebra concepts, they can refer to the “Algebraic Prerequisites and Review Section” in the Appendix of this textbook.

Chapter 1 – Right Triangle Trigonometry

1.1 Angles, Degrees, and Triangles
1.2 Similar Triangles
1.3 Definition 1 of Trigonometric Functions: Right Triangle Ratios
1.4 Evaluating Trigonometric Functions: Exactly and with Calculators
1.5 Solving Right Triangles

Chapter 2 – Trigonometric Functions

2.1 Angles in the Cartesian Plane
2.2 Definition 2 of Trigonometric Functions: The Cartesian Plane
2.3 Evaluating Trigonometric Functions for Nonacute Angles
2.4 Basic Trigonometric Identities

Chapter 3 – Radian Measure and the Unit Circle Approach

3.1 Radian Measure
3.2 Arc Length and Area of a Circular Sector
3.3 Linear and Angular Speeds
3.4 Definition 3 of Trigonometric Functions: Unit Circle Approach

Chapter 4 – Graphing Trigonometric Functions

4.1 Basic Graphs of Sine and Cosine Functions: Amplitude and Period
4.2 Translations of the Sine and Cosine Functions: Phase Shift
4.3 Graphs of Tangent, Cotangent, Secant, and Cosecant Functions

Chapter 5 – Trigonometric Identities

5.1 Verifying Trigonometric Identities
5.2 Sum and Difference Identities
5.3 Double-Angle Identities
5.4 Half-Angle Identities
5.5 Product-to-Sum and Sum-to-Product Identities

Chapter 6 – Solving Trigonometric Equations
6.1 Inverse Trigonometric Functions
6.2 Solving Trigonometric Equations that Involve Only One Trigonometric Function
6.3 Solving Trigonometric Equations that Involve Multiple Trigonometric Functions

Chapter 7 – Applications of Trigonometry: Triangles and Vectors

7.1 Oblique Triangles and the Law of Sines
7.2 The Law of Cosines
7.3 The Area of a Triangle
7.4 Vectors
7.5 The Dot Product

If time permits we will cover chapter 8