## MAC 1114 C: College Trigonometry

*Department of Mathematics, College of Sciences*

3 Credit Hours  
Section: 0002

### Course Syllabus

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Dr. Seongchun Kwon (Michelle)</th>
<th>Term:</th>
<th>Fall 2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Location:</td>
<td>MSB 403</td>
<td>Class Hours</td>
<td>Tuesday 9:00 a.m.-10:20 a.m. (CB10121)</td>
</tr>
</tbody>
</table>
| Office Hours:       | Tuesday and Thursday:  
                     | 4:00 p.m. -5:30 p.m. (Zoom)  
                     | Friday: 9:00 a.m.-10:30 a.m.,  
                     | 3:00 p.m.-4:30 p.m. in MSB 242  
                     | Office Hours Rule | Fr 3:00 p.m. - 4:20 p.m. (MSB 242, optional MALL in-person tutoring hours for your own benefit) |
| Email:              | Seongchun.Kwon@ucf.edu or  
                     | Webcourses@UCF messaging     | Course Modality: | Face-to-Face (P) Mode |
| Teaching Assistants | Ms. Ashley Coppola  
                     | as350994@ucf.edu              | Tutoring Hours  | Tuesday and Thursday:  
                     |                                     | 3:30 p.m. – 4:30 p.m. in BA2 0210  
                     | *Zoom tutoring will be provided concurrently. In-person tutoring (by Ms. Coppola) locations will be announced later. |

### Course Description

PR: Appropriate score on the UCF Math Placement Exam, or MAC 1105C with a "C" (2.0) or higher, or C.I. The circle arc length, identities, trigonometric functions, inverse functions,
applications to simple harmonic motion, function of angles, complete development of triangle solving. Prepares students for upper level mathematics. The "NC" grading policy applies to this course.

**Course Goals:** This course is designed to familiarize the student with graphs and their functions, trigonometric functions, analytic trigonometry, and applications of trigonometric functions, polar coordinates, and vectors. Upon successful completion of the course, the student will be able to apply various problems solving strategies to find solutions to a variety of real-life problems. Furthermore, the student will have acquired the necessary trigonometry background to continue pursuing higher levels of mathematics.

**Required Materials:**

2. Computer and Internet Access
3. TI30XA calculator: This calculator is provided during the proctored exam place (MSB 153, 241, 240, and 242) in UCF
4. Regular notebook (spiral-bound, binder) to keep neat and organized notes.

**Textbook Purchase Option:**

*Through First Day Course Materials in WebCourses: The course Materials tab appears on the left sidebar in WebCourses. You will choose ‘Opt-In’ to participate. You will get a deep discount. The charge goes to your student account.*

If you experience technical problems or have further questions, then you are to contact the following:

- Link to Customer Care website and FAQs: [https://tinyurl.com/firstdayfaq](https://tinyurl.com/firstdayfaq)
- Open a ticket Online for the Customer Care team: [https://tinyurl.com/customercarerequest](https://tinyurl.com/customercarerequest)
- Email the Customer Care team: bookstorecustomercare@bncollege.com
- Call the Customer Care team: 1-844-9-EBOOKS (1-844-932-6657)


WebAssign Code only offers e-textbook and online assignments. This is exactly what you need. This is what the First Day Course materials offer.

There are two other options for the purchase. However, students choose these options less frequently.

- **Cengage Unlimited:** If you take more than one course which uses Cengage Learning, then you can consider this option.

  Cengage - Cengage Unlimited, 1 term (4 months) Printed Access Card | 9780357700037 © 2018
You can call Cengage Customer Service at (800) 354-9706 for further information.

- **Text + WebAssign**: Precalculus: Mathematics for Calculus, Loose-leaf Version, 8th + WebAssign, Single-Term Printed Access Card 9780357953396

If you need a printed book, then you can use this option. However, most students don’t need a printed book. You can call Cengage Customer Service at (800) 354-9706 for further information.

**How to access WebAssign?**

You will access WebAssign only from Webcourses. Go to Assignments in WebCourses. Click the assignment. *You cannot open your assignments if you login to WebAssign directly.*

**WebAssign Accessibility Statement**
**WebAssign Privacy Statement**

**Required Academic Activity:** As of fall 2014, all faculty members are required to document students’ academic activity at the beginning of each course. In order to document that you began this course, please complete the required academic activity quiz in WebCourses no later than Friday, August 25, 2023, by 5:00 PM. Failure to do so may result in a delay in the disbursement of your financial aid.

**Attendance:**

**Lecture Attendance:** Lectures are delivered in CB1 0121. Zoom lectures will be delivered concurrently. The recorded lectures will be posted on the course website. Students who cannot come to the campus or attend the lecture during the designated hours can watch the recorded lectures. There are attendance quizzes in WebCourses. Two attendance codes will be provided during each lecture.

**The deadlines for Tuesday’s lecture are 11:59 p.m. on Friday.**

**The deadlines for Thursday’s lecture are 11:59 p.m. on Sunday.**

**Friday Session Attendance:** MSB 242 is reserved for in-person tutoring services. Only the students who need help will go to MSB242 for extra help. Friday session attendance, other than exam days, is NOT mandatory. Students will not get any Friday session attendance credits. However, **students will take the exams on September 15 (test 1), October 13 (test 2), and November 17 (test 3) during Friday session hours.**

**Homework assignments and Quiz dates:**

1. **Homework Assignments** are typically **due on Sunday.**
2. **Quizzes** are typically **due on Wednesday.**

**Exams**

Exams 1, 2, and 3, and the final exam are fully online with WebAssign. **The exams will take place at MSB 153, 241, 240, and 242 on the UCF campus. The rooms are located on the 1st and 2nd floor of the Mathematical Sciences Building. You will have to bring your UCF ID,**
pencil, and $.50 for locker use when you come for the exams. TI-30Xa calculator will be provided. You are not allowed to use your own calculator.

Exam dates:

<table>
<thead>
<tr>
<th>Test dates</th>
<th>Location</th>
<th>Time</th>
<th>Duration</th>
<th># of Questions</th>
<th>Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1*:*</td>
<td>MSB 240- 242, MSB 153</td>
<td>3:00p.m. - 4:10 p.m.</td>
<td>70 minutes</td>
<td>14</td>
<td>6.1, 6.2, 6.3, 5.3A</td>
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<tr>
<td>September 15 (F)</td>
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<tr>
<td>Exam 2*:*</td>
<td>MSB 240- 242, MSB 153</td>
<td>3:00p.m. - 4:10 p.m.</td>
<td>70 minutes</td>
<td>14</td>
<td>5.3.B, 5.4, 5.5, 5.6, 7.1, 7.2</td>
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<tr>
<td>October 13(F)</td>
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<tr>
<td>Exam 3*:*</td>
<td>MSB 240- 242, MSB 153</td>
<td>3:00p.m. - 4:10 p.m.</td>
<td>70 minutes</td>
<td>20</td>
<td>7.3A, 7.4, 7.5, 8.1, 8.2, 8.4 6.5, 6.6, and 7.3.B in HW will not be on the exam.</td>
</tr>
<tr>
<td>November 17(F)</td>
<td></td>
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<tr>
<td>Final Exam:</td>
<td>MSB 240- 242, MSB 153</td>
<td>TBA</td>
<td>100 minutes</td>
<td>37</td>
<td>The final exam will be comprehensive. It will include everything except 6.5., 6.6, 7.3.B., and 9.1</td>
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<tr>
<td>December 4-</td>
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<tr>
<td>December 8</td>
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</table>

Bonus Points:

There will be 5% bonus points opportunities from WebAssign bonus assignments.

Not doing any bonus points-related assignments will not adversely affect your course grade. Your bonus point scores will be proportional to what you accomplished.

Exam Regulations:

Exam 1, 2, and 3 will be on September 15 (F), October 13(F), and November 17(F) at MSB 153, 240, 242, and 242 in the Mathematical Sciences building. The final exam will be scheduled during the final exam period between December 4(F) and December 8(F) in MSB 153, 240, 241, and 242 in the Mathematical Sciences building. Please follow this checklist:

- Have an active WebAssign account
Memorize your NID and password to log in to a computer and Webcourses.
Make sure that you arrive early as the test will start on time. You will lose elapsed time if you are late or don’t know log in information and need to retrieve it.
If you miss any of the first three tests, then that will be your dropped test.
You must have a UCF ID and put it in front of the desk, on the left side of the keyboard to make it easy for the staff to check.
$.50 if you are going to use a locker (read instructions before you use a locker so you don't lose the money before it locks). No personal belongings are allowed during testing.
Writing utensil.
NO cellphones, NO skateboards, NO calculators (you'll be loaned TI-30XA), NO smartwatches. (If you don't want to put them in a locker, please don't bring them with you, and don't jeopardize your grade.)
During tests 1, 2, 3, or the final if your phone makes noise, is observed to be on, or you access it for any reason while you are in the testing room you will be given a zero on that test and possibility sent to student conduct.
At all times, you must abide by Mathematics Assistance and Learning Lab (MALL) Policies and Procedures, please visit http://mall.cos.ucf.edu/, as it is the student’s responsibility to read, understand and follow policies.
The use of any algebra solving app, algebra solving calculator or algebra solving software is cheating and the student will be sent to student conduct for cheating.
After taking the test and during the remaining portion of that test week the dissemination of the contents of the test by any means is unauthorized and is a violation of the UCF code and the student will be sent to student conduct.

**Academic Honesty:** All students are required to abide by the Academic Honesty Guidelines. We must develop, sustain, and protect an academic environment of honesty, trust, and respect. Please read and understand all policies listed in http://creed.ucf.edu/points, http://www.goldenrule.sdes.ucf.edu. If you are involved in an academic dishonesty-related incident, then the relevant assignments/exam score(s) will be zero(s) and the Z Designation will be used as decided by the UCF Office of Student Conduct.

**Internet outage statement**

The use of the internet is essential for the proper operation of this class. To avoid difficulties with internet outages, interruptions, or technical difficulties affecting the completion of the assignments of this class, the student must have a backup plan to put into effect on encountering any of these difficulties. This is the responsibility of the student, to have such a backup plan and to put it into effect if problems arise. This might include using phone data plans or other mechanisms to resolve the problems.

**Pre-arranged exam:**

If you cannot take an exam on the exam day because of your participation in official University-sponsored activities (e.g., intercollegiate athletics), religious observances (see restrictions, need to be requested until September 1), legal obligations (such as jury duty), or military obligations, then **you must obtain permission from your instructor ahead of time** by providing valid and complete documentation in advance (e.g. UCF program verification form, copy of military
orders, jury notice, letter from a clergy etc). Your professor will rearrange the exam day. Otherwise, a grade of zero for the missed exam will be factored into your course average. And the missed exam will be part of the dropped exam(s) in option 1 or option 2 in your course grade assessment. Your professor determines whether the reason you miss an exam grants a pre-arranged exam or not. Personal travel plans are not a valid reason for taking a test different from a scheduled test day.

Make-up Policy

1. Late Homework and Quizzes: If you miss the homework or quiz original deadlines, then you can request WebAssign automatic extensions within 13 days after* the original assignment deadlines. Then, it will give you a day to make up the assignment. You will lose access to the assignment at the end of 14 days of the extension window. All the assignments except the final exam will be locked after December 8 at 2 pm. You will lose access to all the assignments at 2:00 p.m. on December 8. Therefore, if the extension window comes after December 8 at 2 p.m., then the deadline for the assignments is December 8 at 2 p.m.

*You cannot request automatic extensions before the deadline.

*If you see the answers by clicking ‘View Key’ before you request the automatic extension, then the automatic extension will be disabled.

*Exams will NOT be extendible.

2. Make-up exam: The first exam you missed due to a personal emergency will be the lowest exam to be dropped. No make-up exam will be given. If you missed more than one exam, then your course grade will be based on option 2. See the Grading scale.

SAS student regulation:

- If you are a SAS student and need further accommodation for the exams, then you have to take exams at the SAS testing center. If you come to the MALL, then you will not be able to get accommodation, especially, SAS suggested extended time. Please refer to the following website for when and how you request the exam accommodation:

  https://sas.sdes.ucf.edu/students/exams/

- If you are a SAS student who has a chronic illness that can be flared up unpredictably, then the same regulation will be applied for the first missed exam because your personal emergency is covered by the exam drop policy. We will follow the SAS guideline from the second missed exam. If you miss the exam more than once, then you need to contact me as soon as possible to get further accommodation.

e-mail Policy
Please read the syllabus, announcements, and frequently asked questions before you send any e-mails.

- I strongly encourage you to stay after the lectures to ask me questions, rather than sending e-mails. For the course general questions, it is better to post your question on class GroupMe so that you can get help from other classmates, our teaching assistant Ms. Ashley Coppola, or me.
- Your e-mail will be responded to within 24 hours after your e-mail is received if the answer to your question is not found in the syllabus, announcements, or frequently asked questions. If you don’t get an e-mail response in 24 hours, then that implies that you can find the answer in announcements, syllabus, or in frequently asked questions. That is, the questions whose answers are found in either syllabus or the frequently asked questions may not be returned.
- If you want to meet with me through Zoom, then you need to contact me a day prior to the day you want to set up an appointment. I will not get mathematical questions through e-mails. If you have any mathematical questions outside of my office hours, or Friday’s MALL in-person tutoring session in MSB241 at UCF, then you are to post your questions on our class GroupMe so that you can get help from your classmates, our teaching assistants, or me. Posting your questions on GroupMe is the most efficient way to get answers at any time.

Class GroupMe

You are not allowed to open any other class social media sites. If you are contacted by other classmates for separate class social media sites, then I encourage you to report that to me with the information about your classmate.

GroupMe is adopted as a class discussion board. Class GroupMe site can be accessed from the course homepage. You can join GroupMe only with your real name which is identical to the name in the WebCourses roster. Postings in GroupMe are strictly limited to questions or discussions about course materials or course policy. You are not to ask or post the attendance codes or discuss quiz or exam problems. You cannot advertise any other organization or other activities which are not directly related to our class. If you do, then you will be forwarded to the Student Conduct.

If you notice that your classmate posts illicit information or questions, then you are to report that to me immediately. Otherwise, many other students who joined in the conversations without knowing that the nature of the discussion can violate academic integrity will be punished.

Our class GroupMe site will be monitored by our teaching assistant and me. Some of the questions you post here will be answered by our teaching assistants or me.

WebAssign Tech Support:

Your course professor doesn’t troubleshoot the technical issues. If you experience any technical issues or have questions, then you are to contact the WebAssign Tech support. The link to the tech support site is on our course website or you can go to https://cengage.force.com/s/login/

Holidays: (No classes)
Labor Day: Monday, September 4, 2023
Veterans Day: Friday, November 10, 2023
Thanksgiving: Thursday, November 23, 2023 - Saturday, November 25, 2023

**Grading Scale:** (Your final grade will be no less than the following)

<table>
<thead>
<tr>
<th>Average</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 – 100%</td>
<td>A</td>
</tr>
<tr>
<td>80 – 89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>30-69%</td>
<td>NC (Not for credit)*</td>
</tr>
<tr>
<td>Otherwise</td>
<td>F</td>
</tr>
</tbody>
</table>

**Grading Scale:** Drops will be applied after Exam 3

**Option 1:**

<table>
<thead>
<tr>
<th></th>
<th>Weights</th>
<th>Number of Drops After Exam 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10 %</td>
<td>Lowest 3</td>
</tr>
<tr>
<td>Quiz</td>
<td>10 %</td>
<td>Lowest 3</td>
</tr>
<tr>
<td>Lecture Attendance</td>
<td>5 %</td>
<td>Lowest 3</td>
</tr>
<tr>
<td>Review for exams</td>
<td>5%</td>
<td>No Drop</td>
</tr>
<tr>
<td>Exam 1, Exam 2, Exam 3</td>
<td>50 %</td>
<td>Lowest 1</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20 %</td>
<td>No Drop</td>
</tr>
</tbody>
</table>

**Option 2:**

<table>
<thead>
<tr>
<th></th>
<th>Weights</th>
<th>Number of Drops After Exam 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10 %</td>
<td>Lowest 3</td>
</tr>
<tr>
<td>Quiz</td>
<td>10 %</td>
<td>Lowest 3</td>
</tr>
<tr>
<td>Lecture Attendance</td>
<td>5 %</td>
<td>Lowest 3</td>
</tr>
<tr>
<td>Review for exams</td>
<td>5%</td>
<td>No Drop</td>
</tr>
</tbody>
</table>
Exam 1, Exam 2, Exam 3 0 %  Drop All
Final Exam 70 %  No Drop

Extra Credits:
There will be 5% bonus points opportunities. The points come from the duplicates of Reviews for exams, and the practice exams.

The scores from bonus assignments will be added to the course total after the final exam.

The percentage from the bonus assignments is calculated as

\[
\text{Your Accumulated scores from the bonus assignments} \times 5 \\
\text{Total available extra credits assignments scores}
\]

Your score from the bonus assignments is proportional. You will get the score according to how many problems you solved correctly. There is no minimum score you have to achieve to get bonus points.

Bonus assignments are optional. Not doing bonus assignments will not work against you.

Learning Objectives:
After the completion of this course, students will be able to

1. Describe the angle measurements by using radians and degrees.
2. Evaluate the exact values of the six trigonometric functions or estimate them for the given angles with or without scientific calculator.
3. Describe and apply the properties of the six trigonometric functions and their transformations to solve the application problems.
4. Describe the properties of the six inverse trigonometric functions.
5. Evaluate the six inverse trigonometric functions.
6. Solve trigonometric equations and their application problems in a rectangular coordinate system or in a polar coordinate system.
7. Solve the application problems in vector space.

Test 1 will assess outcomes 1, 2, and 3. Test 2 will assess outcomes 3, 4 and 5. Test 3 will assess outcomes 3 and 6. The final exam will assess outcomes 1, 2, 3, 4, 5 and 6.

Course Pace

<table>
<thead>
<tr>
<th></th>
<th>Course Pace</th>
<th>HW Due</th>
<th>Quiz Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2023</td>
<td></td>
<td>Sun</td>
<td>Wednes</td>
</tr>
<tr>
<td>Week</td>
<td>Dates</td>
<td>Topics</td>
<td>Sections</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
</tbody>
</table>
| 1    | Aug 21-Aug 27 | Course Introduction  
| 2    | Aug 28-Sep 3 | 6.2. Trigonometry of right triangles  
6.3. Trigonometric functions of angles | 6.2.  
6.3.  
6.1.     |
| 3    | Sep 4-Sep 10 | 5.3. Trigonometric graphs  
*Unit circle definition of sine and cosine functions, Basic sine and cosine graphs  
5.3. Trigonometric graphs  
*Stretches and Reflections of sine and cosine functions  
5.3. Trigonometric graphs  
*General Form with Phase Shifts of sine and cosine functions | 5.3. A  
6.2.  
6.3.     |
| 4    | Sep 11-Sep 17 | 5.3. Trigonometric graphs  
*General form with phase shifts of sine and cosine functions  
5.4. More trigonometric graphs  
*tangent and cotangent functions | 5.3. B  
5.3.A |
|      |              | **Exam 1 September 15(F)**                                        |          |
| 5    | Sep 18-Sep 24 | 5.4. More trigonometric graphs  
*secant and cosecant functions  
5.5. Inverse trigonometric functions and their graphs  
*Inverse sine functions  
5.5. Inverse trigonometric functions and their graphs  
*Inverse sine and inverse cosine functions | 5.4.  
5.3. B |
| 6    | Sep 25-Oct 1  | 5.5. Inverse trigonometric functions and their graphs  
*Inverse cosine and tangent functions  
5.6. Modeling harmonic motion  
7.1. Trigonometric identities | 5.5. A  
5.5. B  
5.6. |
| 7    | Oct 2-Oct 8   | 7.1. Trigonometric identities  
7.2. Addition and subtraction formulas | 7.1  
7.2  
5.5.A  
5.5.B |
<p>|      |              |                                                                      | 5.6.     |</p>
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics</th>
<th>Sections</th>
</tr>
</thead>
</table>
| 8    | Oct 9-Oct 15   | 7.3. (A) Double-angle and half-angle formulas  
7.3. (B) Product-Sum Formula (Not on the quiz and Not on the Exam)  
7.4. Basic trigonometric equations  
Exam 2 October 13(F) | 7.3 (A)  
7.3. (B)  
7.1.  
7.2. |
| 9    | Oct 16-Oct 22  | 7.4. Basic trigonometric equations  
6.5. The law of sines (Not on the quiz and Not on the Exam) | 7.4.  
6.5  
7.3. |
| 10   | Oct 23-Oct 29  | 6.6. The law of cosines (Not on the quiz and Not on the Exam)  
6.6. The law of cosines (Not on the quiz and Not on the Exam) | 6.6  
7.4. |
| 11   | Oct 30-Nov 5   | 8.1. Polar coordinates  
8.2. Graphs of polar equations *Cardioid | 8.1 |
| 12   | Nov 6-Nov 12   | 8.2. Graphs of polar equations *Rose, Limacon  
8.4. Plane curves and parametric equations | 8.2  
8.4  
8.1. |
| 13   | Nov 13-Nov 19  | 9.1. Vectors in Two dimensions (Not on the quiz and Not on the Exam)  
Review for the final  
Exam 3 November 17(F) | 9.1  
8.2  
8.4. |
| 14   | Nov 20-Nov 26  | Thanksgiving Week  
Thanksgiving Day November 23-25 (no classes)  
Review for the final | 9.1. |
| 15   | Nov 27-Dec 3   | Review for the final  
(Do bonus assignments) | |
| 16   | Dec 4-Dec 8    | Comprehensive Final Exam: All materials covered except 6.5, 6.6., 7.3.B and 9.1 | |
Section by section details of learning objectives:

6.1. Angle Measure
After you complete this section, you will be able to

1. Describe degree, radian, and angle in standard position
2. Convert degree to radian and radian to degree
3. Identify coterminal angles
4. Apply arc length, angular speed, and linear speed formulas in real-life situations.

6.2. Trigonometry of Right Triangles
After you complete this section, you will be able to

1. describe six trigonometric functions: sine, cosine, tangent, cosecant, secant and cotangent functions
2. evaluate six trigonometric functions of the given angle in a right triangle
3. describe 30°-60°-90 and 45°-45°-90 triangles and evaluate six trigonometric functions for 30°, 60° and 45°.
4. evaluate six trigonometric function values with TI30XA calculator.
5. solve real-life application problems related with trigonometry of right triangles.

6.3. Trigonometric Functions of Angle
After you complete this section, you will be able to

1. describe the definitions of six trigonometric functions by using coordinates.
2. calculate six trigonometric functions for any angles in standard position.
3. determine which quadrants each trigonometric function is positive or negative.
4. describe what the reference of a given angle is.
5. calculate the exact value of trigonometric functions by using 30°-60°-90 or 45°-45°-90 special triangles and reference angles.
6. describe Pythagorean identities in trigonometric functions.
7. solve application problems of Pythagorean identities in trigonometric functions.

5.3. Trigonometric Graphs
After you complete this section, you will be able to

1. describe the domain, range, amplitude, period and phase shifts of sine and cosine functions
2. draw the graphs of sine and cosine functions.

5.4. More Trigonometric Graphs
After the completion of this section, you will be able to
1. describe domains, ranges, periods, and vertical asymptotes of the tangent, cotangent, secant, and cosecant functions.
2. graph the tangent, cotangent, secant, and cosecant functions.

5.5. Inverse Trigonometric Functions And Their Graphs

After the completion of this section, you will be able to

1. describe the domains and ranges of inverse sine, inverse cosine, and inverse tangent functions.
2. graph inverse sine, inverse cosine, and inverse tangent functions.
3. evaluate the inverse sine, inverse cosine, and inverse tangent functions.
4. describe the inverse properties of inverse sine, inverse cosine, and inverse tangent functions.
5. apply the inverse properties to problem-solving.

5.6. Modeling Harmonic Motion

After the completion of this section, you will be able to

1. set up an equation of simple harmonic motion.
2. describe the amplitude, period, and frequency of simple harmonic motion.

6.5. The Law of Sines

After the completion of this section, you will be able to

1. describe the law of sines
2. apply the law of sines to solve the triangles
3. apply the law of sines in real-life situations

6.6. The Law of Cosines

After the completion of this section, you will be able to

1. describe the law of cosines
2. apply the law of cosines to solve the triangles
3. apply the law of cosines in real-life situations
4. determine when you use the law of sines and when you use the law of cosines to solve the triangles

7.1. Trigonometric Identities

After the completion of this section, you will be able to apply the trigonometric identities to simplify trigonometric expressions or verify other trigonometric identities.

7.2. Addition and subtraction formulas
After the completion of this section, you will be able to apply the addition and subtraction formulas for sine, cosine, and tangent functions to evaluate the angles.

7.3. (A) Double Angle and Half Angle Formulas

After the completion of this section, you will be able to apply the double-angle and half-angle formulas for sine, cosine, and tangent functions to evaluate the angles.

7.3. (B) Sum to Product Formulas

After the completion of this section, you will be able to apply the product-sum and sum-product formulas for sine, cosine, and tangent functions to evaluate the angles.

7.4. Trigonometric Equations

After the completion of this section, you will be able to apply the properties of trigonometric functions, trigonometric identities, and factoring to solve trigonometric equations.

8.1. Polar Coordinates

After the completion of this section, you will be able to

1. plot the points on the polar coordinate plane.
2. write the polar coordinates of a point in the polar coordinate plane.
3. Convert polar coordinates to rectangular coordinates and rectangular coordinates to polar coordinates.
4. Convert polar equations to rectangular equations and rectangular equations to polar equations.

8.2. Graphs of Polar Equations

After the completion of this section, you will be able to

1. Plot the polar curves, cardioid, rose, and limacon, in a polar coordinate when the polar equations are given.
2. describe the polar equations which generate cardioid, rose, or limacon.
3. describe the number of petals by looking at the equation of roses.

8.4. Plane Curves and Parametric Equations

After the completion of this section, you will be able to

1. describe what plane curves and parametric equations are.
2. graph parametric equations by applying the method, called 'eliminating parameter'.
3. find the parametric equations of straight lines with the given properties.

9.1. Vectors in two dimensions

After the completion of this section, you will be able to
1. state the factors (direction, magnitude, horizontal component, and vertical component) of vectors geometrically and in the coordinate plane.
2. multiply a scalar to the vectors.
3. operate vectors by adding and subtracting.
4. state and apply the algebraic properties of vectors: commutative property, associative property, and, identity and inverse elements.
5. apply the properties of vectors to real-life situation.

Religious Policy: It is the practice of the University of Central Florida to reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. A student who desires to observe a religious holy day of his or her religious faith must notify his/her instructor in writing at the beginning of the term (prior to 5:00 PM on Friday, September 2) to be excused from classes to observe the religious holy day. Please note that documentation will be requested.

Course Accessibility Statement. The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need disability-related access in this course should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) http://sas.sdes.ucf.edu/ (Ferrell Commons 185, sas@ucf.edu, phone: 407-823-2371). Through Student Accessibility Services, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential access and accommodations that might be reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student.

WebAssign Accessibility Statement.

Campus Safety Statement. Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts. In case of an emergency, dial 911 for assistance. Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide’s physical location and review the online version at http://emergency.ucf.edu/emergency guide.html Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency. If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see http://www.ehs.ucf.edu/AEDlocations-UCF (click on link from menu on left). To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to my.ucf.edu and logging in. Click on “Student Self Service” located on the left side of the screen in the toolbar, scroll down to the blue “Personal Information” heading on the Student Center screen, click on “UCF Alert”, fill out the information, including e-mail address, cell phone number, and cell phone provider, click “Apply” to save the changes, and then click “OK.” Students with special needs related to emergency situations should speak with their instructors outside of class. To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (https://youtu.be/NIKYajEx4pk).
Accessibility Related Accommodations: It is my goal that this class be an accessible and welcoming experience for all students, including those with disabilities that may impact learning in this class. If anyone believes the design of this course poses barriers to effectively participating and/or demonstrating learning in this course, please meet with me (with or without a Student Accessibility Services (SAS) accommodation letter) to discuss reasonable options or adjustments. During our discussion, I may suggest the possibility/necessity of your contacting SAS (Ferrell Commons 185; 407-823-2371; sds@ucf.edu) to talk about academic accommodations. You are welcome to talk to me at any point in the semester about course design concerns, but it is always best if we can talk at least one week prior to the need for any modifications.

Academic Integrity Statement. Students should familiarize themselves with UCF’s Rules of Conduct at http://osc.sdes.ucf.edu/process/roc According to Section 1, “Academic Misconduct,” students are prohibited from engaging in Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else’s efforts and used as part of an examination, course assignment, or project. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor’s PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc. Falsifying or misrepresenting the student’s own academic work. Plagiarism: Using or appropriating another’s work without any indication of the source, thereby attempting to convey the impression that such work is the student’s own. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor. Helping another violate academic behavior standards. For more information about Academic Integrity, students may consult The Center for Academic Integrity http://www.academicintegrity.org/ica/asses/FVProject.pdf For more information about plagiarism and misuse of sources, see “Defining and Avoiding Plagiarism: The WPA Statement on Best Practices” http://wpacouncil.org/node/9 (Links to an external site.)

Responses to Academic Dishonesty, Plagiarism, or Cheating. Students should also familiarize themselves with the procedures for academic misconduct in UCF’s student handbook, The Golden Rule http://goldenrule.sdes.ucf.edu/docs/goldenrule.pdf. UCF faculty members have a responsibility for students’ education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary respond to academic misconduct. Penalties can include a failing grade in an assignment or in the course, suspension or expulsion from the university, and/or a “Z Designation” on a student’s official transcript indicating academic dishonesty, where the final grade for this course will be preceded by the letter Z. For more information about the Z Designation, see http://goldenrule.sdes.ucf.edu/zgrade

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the door. Students should make a note of the guide’s physical location and review the online version at http://emergency.ucf.edu/emergency-guide.html Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency. If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see http://www.ehs.ucf.edu/AEDlocations-UCF (click on link from menu on left). To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to my.ucf.edu and logging in. Click on “Student Self Service” located on the left side of the screen in the toolbar, scroll down to the blue “Personal Information” heading on the Student Center screen, click on “UCF Alert”, fill out the information, including e-mail address, cell phone number, and cell phone provider, click “Apply” to save the changes, and then click “OK.” Students with special needs related to emergency situations should speak with their instructors outside of class. To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (https://youtu.be/NIKYajEx4pk).

**Deployed Active Duty Military Students.** A deployed active duty military student who feels the need for a special accommodation due to that unique status should contact their instructor to discuss the circumstances. Please provide a paper copy of your military orders.

**Unauthorized Use of Websites and Internet Resources**

There are many websites claiming to offer study aids to students, but in using such websites, students could find themselves in violation of academic conduct guidelines. These websites include (but are not limited to) Quizlet, Course Hero, Chegg Study, and Clutch Prep. UCF does not endorse the use of these products in an unethical manner, which could lead to a violation of our University’s Rules of Conduct. They encourage students to upload course materials, such as test questions, individual assignments, and examples of graded material. Such materials are the intellectual property of instructors, the university, or publishers and may not be distributed without prior authorization. Students who engage in such activity could be found in violation of academic conduct standards and could face course and/or University penalties. Please let me know if you are uncertain about the use of a website so I can determine its legitimacy.

**Title IX**

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at https://letsbeclear.ucf.edu and http://cares.sdes.ucf.edu/.

**Disclaimer:** *Instructor has the right to make some adjustments to syllabus and any adjustment will be announced in class and via email and/or Webcourses announcements.*