

Spring 2023 MAC 1114C Syllabus

MAC 1114 C: College Trigonometry <i>Department of Mathematics, College of Sciences</i> 3 Credit Hours Section: 0R01

Course Syllabus

Instructor:	Dr. Seongchun Kwon (Michelle)	Term:	Spring 2022
(Zoom) Office Hours:	Tuesday 10:30 a.m. -12:30 p.m. at MSB 403 W 3:30 p.m. -4:30 p.m. through Zoom Thursday 10:30 a.m.-12:30 p.m. through Zoom Pre-Appointment Required Send an e-mail to the instructor to set up an appointment a day prior to the meeting	Class Hours	Mandatory Attendance: Tuesday 9:00 AM - 10:20 AM (Zoom or CB1 0121 if you are on campus) Thursday 9:00 AM - 10:20 AM (Zoom) Optional for Extra Credits: Friday 12:00 PM - 1:20 PM (MSB 242) Saturday 8:00 PM - 9:00 PM (Zoom)
Email:	Seongchun.Kwon@ucf.edu or Webcourses@UCF messaging	Course Modality:	RS

Teaching Assistants' Zoom Office/Tutoring Hours

There are Zoom and in-person tutoring hours by our teaching assistants Ms. Ashley Coppola and Mr. Carlos Azurmendi.

Teaching Assistant	e-mail	Tutoring Hour
Carlos Azurmendi	solrac@knights.ucf.edu	TBA F 12 p.m. – 1:20 p.m. (MSB 242)
Ashley Coppola	ashleymcoppola@knights.ucf.edu	Tu 12 p.m. – 1 p.m. (TBA) F 3 p.m. – 4:20 p.m. (MSB 242)

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:

1. WebAssign: Precalculus by Stewart/Redlin/Watson, Enhanced Edition, 7th Edition
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. Then, 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>
- Open a ticket Online for the Customer Care team: <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: Stewart/Redlin/Watson - WebAssign Printed Access Card for Stewart/Redlin/Watson's Precalculus, Enhanced Edition, 7th Edition, Single-Term | 9781337652360 1/3/2017 © 2017, 7th Edition. 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.*

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You can call Cengage Customer Service at (800) 354-9706 for further information.

- *Text + WebAssign*: Stewart/Redlin/Watson - Bundle: Precalculus: Mathematics for Calculus, 7th + WebAssign for Stewart/Redlin/Watson's Precalculus, Enhanced Edition, Single-Term Printed Access Card | 9781305701618, 1/3/2017 © 2016, 7th Edition

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. To document that you began this course, please complete the following academic activity by the end of the first week of classes, required academic activity quiz in Webcourses no later than *Friday, January 13, 2022, by 5:00 PM*. Failure to do so may result in a delay in the disbursement of your financial aid.

Attendance:

You will attend the lecture either through Zoom or at CB1 0121 if you are on campus every Tuesday and will attend the Zoom live session on Thursday.

Tuesday's lecture will be offered as both in-person and zoom live lecture. You can choose either format at your convenience. Both lectures on Tuesday and Thursday will be recorded and posted on our course website.

Two attendance codes with 5 digits lowercase alphabetical characters will be given during each class hour. You must take attendance quizzes about the attendance codes on WebCourses. The deadline for the attendance quizzes for each week is Sunday. Sharing attendance codes with other students is a violation of academic honesty. You will be forwarded to the Student Conduct Office if you share attendance codes with other students.

Homework assignments and Quiz dates:

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

Exams

Exam 1, 2, 3, and the final exam will be fully online with WebAssign. The exams are in-person, proctored, and closed book. **The exams will take place at MSB 153, 241, 240, and 242 on the UCF campus. Which room you must go to for exam 1, 2, and 3 will be announced near exam 1. You will have to bring your UCF ID, Greenbook, 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:

Test dates	Location	Time	Duration	# of Questions	Sections
Exam 1*: February 3 (F)	MSB 240- 242, MSB 153	12:00p.m. -1:00 p.m.	60 minutes	11 questions (22 including subquestions)	6.1, 6.2, 6.3, 5.3A
Exam 2*: March 3(F)	MSB240- 242, MSB 153	12:00p.m. -1:00 p.m.	60 minutes	12 questions (25 including subquestions)	5.3.B, 5.4, 5.5, 5.6, 6.5, 6.6
Exam 3*: April 14(F)	MSB 240- 242, MSB 153	12:00p.m. -1:00 p.m.	60 minutes	14 questions (17 including subquestions)	7.1, 7.2, 7.3.A, 7.4 and 7.5, 8.1, 8.2, 8.4 7.3. B in HW will not be on the exam.
Final Exam: April 26- May 2 Except Saturday and Sunday	MSB 240-242, MSB 153	TBA	100 minutes	20 questions (37 including subquestions)	The final exam will be comprehensive. It will include everything except 7.3.B.

Bonus Points:

There will be 5% bonus points opportunities. 2% is from the attendance of Friday's MALL/Saturday's Zoom Practice Hour sessions. 3% is from the bonus assignments.

Not doing any bonus points-related activities will not adversely affect your course grade.

Bonus points will be added only after the final exam.

On Friday (12:00 p.m. -1:20 p.m.), the MALL(MSB 240) will offer two types of help for you. One is individual help from MALL tutors. The other is a review session with our teaching assistant (Mr. Carlos Azurmendi). He will review some of the past homework problems. This will be done through both live and Zoom. However, if you participate through Zoom, then you will not get bonus points for your participation. **Only the participants who come to the MALL will get bonus points.**

If you go to the MALL, then during the first 15 minutes and the last 20 minutes of the MALL hour, you will be able to take the attendance quizzes. Those quizzes are site-specific. So, you cannot open that quiz outside of the MALL.

If you come to Saturday's zoom activity (8 p.m. – 9 p.m.) sessions, then you will get two attendance codes so that you can take the attendance quizzes. Saturday's zoom activity sessions will not be recorded. Therefore, you can get the codes only if you attend Saturday's zoom activity sessions. **The deadline for the attendance quizzes for extra credit is Saturday, NOT Sunday.**

Other details are written in the Extra Credits section in the syllabus.

MALL Regulations on the Exam days:

Please follow this checklist:

- Have an active WebAssign account
- [Bring a Green/Blue book.](#) You can get up to 4 green/blue books for free during the semester at Student Government Office (Student Union Suite 346), All Knights Study at Ferrell Commons, All Knights Study at Knights Plaza, Student Union Information Desk. You must go there during regular business hours with your UCF student ID. If you need more than 4 green books during the semester, then [Green Books can still be purchased in several vending machines on campus and at the bookstore.](#)
- 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 smart watches. (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>. The Z Designation will be used in cases of academic dishonesty 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 back-up plan to put into effect on encountering any of these difficulties. This is the responsibility of the student to have such a back-up 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), legal obligations (such as jury duty), or military obligations, then **you must obtain permission from your instructor ahead of time and provide valid and complete documentation in advance.** (e.g. UCF program verification form, copy of military orders, jury notice) Your professor will rearrange the exam day. Otherwise, a grade of zero for the missed exam will be factored into your course average. It is at your professor's discretion to determine whether the reason why you miss an exam grants a pre-arranged exam or not. *Personal travel plans are not valid reasons for taking tests at a different date/time than scheduled.*

Make-up Policy

1. Late Homework and quizzes: If you miss the *homework* or *quiz* original deadlines due to an internet outage, any other technical problem, or a personal emergency, then *you can request WebAssign automatic extensions within 13 days after the original assignment deadlines.* Then, you will get 24 hours to complete the assignment. You can request as many extensions as you want within 13 days after the original assignment deadline.
2. You will have two more weeks to complete the assignments from the time you request the extension. However, all the assignments except the final exam will be locked after April 25. Therefore, if 24 hours of extension deadlines come after April 26, then the deadline for the assignments is April 26.

***After the deadlines, you will be able to see the correct answers by clicking 'View Answer Key'. If you see the answers by clicking 'View Key' before you request the automatic extension, then the automatic extension will be disabled.**

***No penalty will be applied for makeup homework or quizzes with automatic extensions.**

***You can request automatic extensions for any homework or quizzes as long as you do it in a legitimate time period which is explained above.**

***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.** If you missed more than one exam, then option 2 will be applied. **No make-up exam will be given. Please read the assessment methods for further details.**

SAS student regulation:

- **I will set your exam duration based on SAS recommendation. However, if you come to the MALL, then you will give up your accommodation.** You will have to start and finish the exam

like any other students who don't have extended exam time even if your WebAssign clock indicates your remaining time based on SAS recommendation. **If you are a SAS student and need further accommodation for the exams, then you must take exams at the SAS testing center. You are responsible for reserving your schedule at the SAS testing center.** 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

If you have any questions, then please post your questions on the class GroupMe so that either your classmates, teaching assistants or I answer your questions.

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

- **I strongly encourage you to use lecture hours, our teaching assistants' tutoring hours, or Zoom practice hours to ask any questions, rather than sending e-mails.**
- *Your e-mail will be responded to in 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. The questions whose answers are found in announcements, syllabus, or 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, and our teaching assistants' tutoring hours and if you cannot use [Math Success Center tutoring service during its operation hours](#) at UCF, then **you will post your questions on GroupMe for the discussion/help from your classmates, our teaching assistants, or me.**

Class GroupMe

We have our GroupMe site which you can access from the course homepage. You can feel free to post any questions such as course policy or mathematical questions from the course materials or homework for discussions with other students. However, **you are not to post the attendance codes, or attendance codes related questions. You are not supposed to discuss the quiz problems. If you post any of the prohibited topics, then you will be forwarded to Student Conduct. That can result in the Z designation grade.** 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 together.

Our class doesn't allow other social media sites.

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

GroupMe site is part of our course platform. You are not allowed to post any other advertisements.

WebAssign Tech Support:

Your course professor doesn't troubleshoot the technical issues. If you experience any technical issues or have questions, then you can 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/>. If the tech support determines that they need professor's help, then they will contact the professor directly.

Holidays:

Martin Luther King Jr. Day January 16

Grading Scale: This course is designated to NC course. That is, this course will not provide the course grade D. Different from other course grades, NC doesn't affect your GPA. However, you must take the course again.

Your final grade will be no less than the following:

Average	Grade
90 – 100%	A
80 – 89%	B
70-79%	C
30-69%	NC (Not for credit)
Otherwise	F

**Your course total will appear in WebCourses grade book after exam 2.* You will not be able to see your course total before that. You can calculate your course total manually by following the methods explained in the frequently asked question 'How to calculate my current grade?' on our course website.

Assessment methods: Drops in homework, quizzes, and exams will be applied after exam 3.

At the end of the semester, the better one will be automatically chosen for the final course grade.

Option 1:

Weights	Number of Drops	
Quiz	10 %	Lowest 3
Exam 1, Exam 2, Exam 3	50 %	Lowest 1
Homework	10 %	Lowest 3

Weights	Number of Drops	
Quiz	10 %	Lowest 3
Exam 1, Exam 2, Exam 3	50 %	Lowest 1
Lecture Attendance	5 %	Lowest 3
Final Exam	25 %	No Drop

Option 2:

Weights	Number of Drops	
Quiz	10 %	Lowest 3
Exam 1, Exam 2, Exam 3	0 %	Drop All
Homework	10 %	Lowest 3
Lecture Attendance	5 %	Lowest 3
Final Exam	75 %	No Drop

Extra Credits:

There will be 5% bonus points opportunities. 2% is from the attendance of Friday's MALL and Saturday's Zoom live practice sessions. 3% is from the bonus assignments.

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

$$\frac{\text{Your Accumulated scores from the bonus assignments}}{\text{Total available bonus assignments scores}} \times 3$$

The percentage from the attendance of Friday's MALL/Zoom live sessions is calculated as

$$\frac{\text{Your accumulated attendance scores from Friday sessions and Saturday Practice Hours}}{\text{total available scores from the Friday sessions}} \times 2$$

*If the result is greater than 2, then the score will be 2.

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 must 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

	Spring 2023	Course Pace	HW Due Sunday	Quiz Due Wednesday
1	Jan 9 - Jan 15	Course Introduction 6.1. Angle measure 6.2. Trigonometry of right triangles	6.1.	
2	Jan 16 - Jan 22	6.2. Trigonometry of right triangles 6.3. Trigonometric functions of angles (6.3. includes 5.1. The unit circle, 5.2. Trigonometric functions of real numbers)	6.2. 6.3.	6.1.
3	Jan 23 - Jan 29	5.3. Trigonometric graphs *Unit circle definition of sine and cosine functions, Basic sine and cosine graphs 5.3. Trigonometric graphs *Stretches and Reflection	5.3.A	6.2. 6.3.
4	Jan 30 - Feb 5	5.3. Trigonometric graphs *General Form with Phase shift 5.4. More trigonometric graphs *tangent and cotangent functions Review for the Exam Exam 1 (Feb 3 Friday): 6.1, 6.2, 6.3, 5.3A	5.3.B	5.3.A
5	Feb 6 - Feb 12	5.4. More trigonometric graphs *secant and cosecant functions 5.5. Inverse trigonometric functions and their graphs *Inverse sine functions (6.4. Inverse Trigonometric Functions and Right Triangles)	5.4.	5.3.B

6	Feb 13 - Feb 19	5.5. Inverse trigonometric functions and their graphs *Inverse cosine and tangent functions (6.4. Inverse Trigonometric Functions and Right Triangles) 5.5. Inverse trigonometric functions and their graphs *composite functions with inverse trig functions 5.6. Modeling harmonic motion	5.5. A 5.5. B 5.6.	5.4.
7	Feb 20 - Feb 26	6.5. The law of sines 6.6. The law of cosines Review of the law of sines and the law of cosines (When to use the law of sines or the law of cosines)	6.5. 6.6.	5.5. A 5.5. B 5.6.
8	Feb 27 - Mar 5	7.1. Trigonometric identities 7.2. Addition and subtraction formulas 7.3. Double-angle and half-angle formulas * Double-angle formulas Review for the exam Exam 2 (Mar 3 Friday):5.3.B, 5.4, 5.5, 5.6, 6.5, 6.6	7.1. 7.2.	6.5. 6.6.
9	Mar 6 - Mar 12	7.3. Double-angle and half-angle formulas *Half-angle formulas 7.3.(B) Product-Sum Formula (Not on the quiz and Not on the Exam)	7.3. A 7.3. B	7.1. 7.2.
	Mar 13 - Mar 19	Spring Break		
10	Mar 20 - Mar 26	7.4. Basic trigonometric equations 8.1. Polar coordinates	7.4.	7.3.A
11	Mar 27 - Apr 2	8.1. Polar coordinates 8.2. Graphs of polar equations	8.1. 8.2.	7.4.
12	Apr 3 - Apr 9	8.4. Plane curves and parametric equations 9.1. Vectors in Two dimensions	8.4.	8.1. 8.2.
	Apr 10 - Apr 16	9.1. Vectors in Two dimensions Review for the exam	9.1.	8.4.

1 3		Exam 3 (Apr 14 Friday): 7.1, 7.2, 7.3.A , 7.4, 7.5, 8.1, 8.2, 8.4 7.3. (B) will not be on the exam.		
1 4	Apr 17 - Apr 24	Review for the final		9.1.
1 5	Apr 25 - May 2	Apr 26 (T) Study Day Comprehensive Final Exam: All materials covered during the semester including 9.1 except Product-Sum Formula in 7.3. B Exam schedule between April 26 and May 2 will be announced later.		

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 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.

1. 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.

1. (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.

1. 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, identity, and inverse elements.
5. apply the properties of vectors to real-life situations.

Religious Policy (UCF-5.020): 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 **Monday, January 23, tenth business day of the term**) 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 accommodation 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/emergencyguide.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/assets/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>

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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Deployed Active-Duty Military Students. A deployed active-duty military student who feels the need for 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.

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.*