MAC 1114C.001 Trigonometry, 3 credit hours
Mathematics Department, College of Sciences
University of Central Florida

Instructor: Seongchun Michelle Kwon
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Phone: 407-823-1740
E-mail: Seongchun.Kwon@ucf.edu

Term: Spring, 2019
Class meeting days, times and locations
TuTh 8:00 AM-9:20 AM at CSB2 0106
Friday 9:00 AM-10:15 AM at MSB 0241

Office hours
Tu 10:00 AM – 12:00 AM
Th 10:00 AM-11:00 AM, 12:00AM- 1:00 AM
F 10:20 AM – 11:20 AM

Course Modality
Face-to-Face

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.

Please note:

In a mathematics course, understanding is established not just by familiarity with concepts, but also by being able to work math problems associated with the concepts. Therefore do not assume you know something unless you can work the problems.

Pre-requisites of a course are what you are assumed to know before you take the course. Understanding pre-requisite knowledge is the responsibility of the student.

Required Materials:

2. iClicker2 student remote by iClicker
3. Four new 8.5”×11” Bluebook/greenbook (books must be blank i.e. nothing written on or in). They will be used for testing.
4. TI30XA calculator. The TI-30XA will be provided on tests only. Absolutely no graphing calculator or programmable calculator should be used in class or during MALL time. It is best if you buy a TI30XA and practice with it. Proctors are not allowed to answer questions about calculator use during the test. The Mall cannot provide calculators for use during the our scheduled MALL time.
5. **Regular notebook** (spiral-bound, binder) to keep neat and organized notes.

**MyLabsPlus (MLP)**

Students must purchase access code to a web-based MyLabsPlus (MLP). This can be purchased at the UCF bookstore or directly from the course website. We will access MLP from Webcourses. During testing you must close Webcourses or any other window except MLP test window.

**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 following academic activity by the end of the first week of classes, REQUIRED ACADEMIC ACTIVITY quiz in Webcourses no later than **Friday, January 11, 2019 by 11:59 EDT**. Failure to do so may result in a delay in the disbursement of your financial aid.

**iClicker2:**

We will be using the iClicker2 feedback system in every lecture to provide an interactive classroom environment. Be prepared to “click-in” your answers to the questions posed. Participation and attendance grades will reflect iClicker2 responses.

**Purchase:**

Be sure to purchase the correct iClicker2 for our course as there several types of clickers available. If desired, it may be possible to find an iClicker2 secondhand, and/or to sell your used iClicker2 at the end of the semester.

**Registration:**

Register at [https://www.iclicker.com/remoteregistration-form-for-classic](https://www.iclicker.com/remoteregistration-form-for-classic). Be sure to enter your NID in the Student ID field on the website, including the two leading letters. Students are required to register their iClicker2 before the second class meeting. A student who fails to register their iClicker2 by the end of the second week will not receive lecture participation points until registered and any zeros earned will not be changed.

**Policy:** The following policies will apply to the use of iClicker2 in the course:

- Each student is responsible for registering his/her own clicker ID under the correct student name as listed in MyUCF.
- iClicker2s must be registered at the start of the semester even if registered during a previous semester. Should a student replace an iClicker2 during the semester, the student is responsible for registering the new iClicker2 and informing the instructor.
- Using two iClicker2s during class is PROHIBITED. If a student “clicks in” for another student who is not in the classroom, both students will be contacted from the Office of Student Conduct and face disciplinary actions with the possibility of receiving a ZF for the course grade.
- If a student fails to bring their iClicker2 to class, they will not receive class participation points associated with the clicker responses for that day.
- Students are expected to come to class prepared with fresh batteries for their iClicker2. Dead batteries will not excuse missed clicker responses.
- Unless otherwise specified, discussing clicker questions in class is NOT cheating; it is part of the learning exercise.
- A student who owns an iClicker can use it during class but there will be some questions that cannot be answered as the iClicker does not have numeric ability like the iClicker2.
Class Activities:

The primary purpose of class activities with an iClicker is the class attendance check. iClicker will be used two or three times during each lecture. You must bring your iClicker to each class in order to get the class attendance scores. The scores will be based on the participation, rather than the correctness of your answer.

Friday MALL Session:

There is a scheduled MALL session each Friday. You are to check in and check out through WebCourses to obtain the MALL attendance scores. The purpose of the scheduled MALL time is to take a weekly quiz, work on the homework, and ask questions about the material.

The Weekly quizzes are IP locked and must be done during the scheduled MALL time. Weekly quizzes can be taken unlimited number of times during the MALL session and the highest score will be captured. There is no quiz during test week, instead the test will be administered during the scheduled MALL period.

Homework assignments and Quiz dates:

Homework Assignments will typically be due on Thursday. There will be a quiz during our scheduled MALL period each Friday other than Exam days. All assignment due dates will appear in MyLabsPlus.

Test dates:

<table>
<thead>
<tr>
<th>Test dates</th>
<th>Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1*: February 8</td>
<td>5.1-5.8</td>
</tr>
<tr>
<td>Test 2*: March 8</td>
<td>6.1 - 6.5</td>
</tr>
<tr>
<td>Test 3*: April 12</td>
<td>6.6 + chapter 7</td>
</tr>
<tr>
<td>Final Exam*: April 24, 25, 26, 29, 30</td>
<td>Final Exam Registration: April 15 - 23</td>
</tr>
</tbody>
</table>

*No student should make travel plans prior to or on test days.

Make-up Policy

Should you miss an exam because of your participation in official University-sponsored activities (e.g., intercollegiate athletics), religious observances (see restrictions), legal obligations (such as jury duty), military obligations, you may make up the exam. Make-ups must be made within one week of the missed assignment. However, 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) 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 missed an exam grants a make-up exam. Personal travel plans or illness are not valid reasons for taking tests at a different date/time than scheduled.

e-mail Policy

I will not get mathematical questions outside of my office hours through e-mails. If you have any mathematical questions outside of the MALL, math success center, and my office hours, then you are to use the Pearson Tutor Services (paid service).
Holidays:

MLK day Monday January 21
Spring Break March 11-16
Study Day Tuesday April 23

Grading Scale:

<table>
<thead>
<tr>
<th>Average</th>
<th>Grade</th>
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<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% (must take final)</td>
<td>NC (Not for credit)**</td>
</tr>
<tr>
<td>Otherwise</td>
<td>F</td>
</tr>
</tbody>
</table>

** Students must take the final exam and the final is comprehensive. Please note all tests may be comprehensive because math builds on prior concepts.

This course is a NC course. Please see [http://fyae.sdes.ucf.edu/faq](http://fyae.sdes.ucf.edu/faq) for complete details for NC policy.

**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://creed.ucf.edu/points), [http://www.goldenrule.sdes.ucf.edu](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.

Grading Scale: **Your final grade will be no less that the following:**

<table>
<thead>
<tr>
<th></th>
<th>Option A</th>
<th>Option B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>MALL</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Quiz</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Class activity</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Test 1</td>
<td>Best 2 are 50%</td>
<td>0%</td>
</tr>
<tr>
<td>Test 2</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Test 3</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Final</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

The student’s grade average will be calculated using both options and the highest average will be used to determine the students’ final letter grade. You do not need to contact your instructor with your choice of option. There will be 5% of bonus point assignments.

- **Note:** The lowest scores equivalent to two weeks’ amount of Homework, Class activity, MALL, and quiz will be dropped prior to calculating your final overall grade.

**TEST POLICIES & PROCEDURES:**

The tests will be in Mylabsplus which you will also access through webcourses. Tests will be on Friday during our scheduled MALL time. Please follow this check list:
• Have an active (not expired) access code, you should check your account before you go to test.
• 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 that will be your dropped test if you miss 2 or more option B will be used to calculate your grade.
• You must have a UCF ID and put it front of desk, on left side of keyboard to make it easy for the staff to check.
• 8 ½ x 11 blue/green book with nothing written on it (see UCF bookstore or vending machine outside MALL or Student Union front desk).
• $.50 if you are going to use a locker (read instruction before you use a locker so you don’t lose the money before it locks). No personal belonging 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 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 assistance and is a violation of the UCF code and the student will be sent to student conduct.

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.

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.

Further details of the course schedule

(Chapter 5) Trigonometric Functions

(5.1) (Week1) (Test 1, Final) Angles and Their Measures
Convert between Decimals and Degrees, Minutes, Seconds Measures for Angles. Find the Arc Length of a Circle. Convert from Degrees to Radians and from Radian to Degrees.

(5.2) (Week1) (Test 1, Final) Right Triangle Trigonometry

Find the Values of Trigonometric Functions of Acute Angles. Use the Fundamental Identities. Find the Values of the Remaining Trigonometric Functions, Given the Value of One of Them. Use the Complementary Angle Theorem

(5.3) (Week1) (Test 1, Final) Computing the Values of Trigonometric Functions of Acute Angles

Find the Exact Values of the Trigonometric Functions of common angles. Use a Calculator to Approximate the Values of the Trigonometric Functions of Acute Angles. Model and Solve Applied Problem Involving Right Triangles.

(5.4) (Week2) (Test 1, Final) Trigonometric Functions of Any Angle

Find the Exact Values of the Trigonometric Functions for Any Angle. Use Coterminals to Find the Exact Value of a Trigonometric Function. Determine the Signs of the Trigonometric Functions of an Angle in a Given Quadrant. Find the Reference Angle of an Angle. Use a Reference Angle to Find the Exact Value of a Trigonometric Function. Find the Exact Values of Trigonometric Functions of an Angle, Given Information about the Functions.

(5.5) (Test 1, Final) Unit Circle Approach: Properties of the Trigonometric Functions

Find the Exact Values of the Trigonometric Functions Using the Unit Circle. Know the Domain and Range of the Trigonometric Functions. Use the Periodic Properties to Find the Exact Values of the Trigonometric Functions. Use Even-Odd Properties to Find the Exact Values of the Trigonometric Functions.

(5.6) (Test 1, Final) Graphs of the Sine and Cosine Functions

Graph Functions of the Form $y=A (\omega x)+B$ Using Transformations. Graph Functions of the Form $y=A (\omega x)+B$ Using Transformations. Determine the Amplitude and Period of Sinusoidal Functions. Graph Sinusoidal Functions Using Key Points. Find an Equation for a Sinusoidal Graph.

(5.7) (Test 1, Final) Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions

Graph Functions of the Form $y=A (\omega x)+B$ and $y=A \cot (\omega x)+B$. Graph Functions of the Form $y=A (\omega x)+B$ and $y=A \sec (\omega x)+B$

(5.8) (Test 1, Final) Phase Shift

Graph Sinusoidal Functions of the Form $y=A (\omega x-\varnothing)+B$

(Chapter 6) Analytical Trigonometry

(6.1) (Test 2, Final) The Inverse Sine, Cosine, and Tangent Functions

(6.2) (Test 2, Final) The Inverse Trigonometric Functions (Continued)

Find the Exact Value of Expressions Involving the Inverse Sine, Cosine, and Tangent Functions.

Define the Inverse Secant, Cosecant, and Cotangent Functions. Use a Calculator to Evaluate sec$^{-1}x$, csc$^{-1}x$, and cot$^{-1}x$. Write a Trigonometric Expression as an Algebraic Expression

(6.3) (Test 2, Final) Trigonometric Equations


(6.4) (Test 2, Final) Trigonometric Identities

Use Algebra to Simplify Trigonometric Expressions. Establish Identities.

(6.5) (Test 2, Final) Sum and Difference Formulas

Use Sum and Difference Formulas to Find Exact Values

Use Sum and Difference Formulas to Establish Identities

(6.6) (Test 3, Final) Double-angle and Half-angle Formulas

Use Double-angle Formulas to Find Exact Values. Use Double-angle Formulas to Establish Identities. Use Half-angle Formulas to Find Exact Values.

(6.7) (Test 3) (Week9) (Not Tested) Product-to-Sum and Sum-to-Product Formulas

Express Products as Sums. Express Sums as Products.

(Chapter 7) Applications of Trigonometric Functions

7.1 (Test 3, Final) Applications Involving Right Triangles

Solve Right Triangles. Solve Applied Problems.

7.2 (Test 3, Final) The Law of Sines

Solve SAA or ASA Triangles. Solve SSA Triangles. Solve Applied Problems.

7.3 (Test 3, Final) The Law of Cosines

Build a Model for an Object in Simple Harmonic Motion. Analyze Simple Harmonic Motion.

(Chapter 8) Polar Coordinates: Vectors

(8.1) (Final) Polar Coordinates

Plot Points Using Polar Coordinates. Convert from Polar Coordinates to Rectangular Coordinates. Convert from Rectangular Coordinates to Polar Coordinates. Transform Equations between Polar and Rectangular Form.

(8.2) (Final) Polar Equations and Graphs

Identify and Graph Polar Equations by Converting to Rectangular Equations. Test Polar Equations for Symmetry. Graph Polar Equations by Plotting Points.

(8.4) (Final) Vectors


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, January 11) 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.

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 you 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.academici ntegrity.org/icai/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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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.

**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.*