

# MAC 1147

## Precalculus and Trigonometry

### I. Course Information

**Course Title:** Precalculus and Trigonometry

**Course No. and Section:** MAC1147\_02

**Instructor Name:** Melissa Quigley

**Credit Hours:** 5 hours

**Course Location:** TRADITIONAL LECTURE

**Meeting Dates:**

- Monday & Wednesday—9:30 a.m. to 10:20 a.m.
- Tuesday & Thursday—9:30 a.m. to 10:45 a.m.

**Meeting Location:** Building 7 Room 113

**Office Location:** Building 7 Room 102F

**Office Hours:**

- Monday: 9:00 a.m.—9:30 a.m. and 11:50 a.m.—2:00 p.m.
- Tuesday: 9:00 a.m.—9:30 a.m. and 12:30 p.m.—2:00 p.m.
- Wednesday: 9:00 a.m.—9:30 a.m., 11:50 a.m.—3:30 p.m.
- Thursday: 9:00 a.m.—9:30 a.m. and 12:30 p.m.—2:00 p.m.
- I am still available through email and canvas (virtually) throughout the day!

**Telephone No.:** 352-873-5800 ext. 1639

**Email:** quigleym@cf.edu

#### Extended Emergency Closure

“For emergency campus closings (natural disasters, etc.) call 352-291-4499 or 800-831-9244 or check our [website](#) (CF.edu).”

### II. Course Description

**Prerequisites:** MAC 1105 or MAC 2233 or a CLM score of at least 70

This course is designed for students who need to develop the algebraic and trigonometric background for the calculus curriculum. This course will be a combination of the courses MAC 1140 and MAC 1114. It will cover such topics as quadratics, polynomials, exponentials, logarithms, matrices, determinants, conic sections, sequences, series, the Binomial Theorem, trigonometric functions, the unit circle, and trigonometric identities. Graphing calculators and/or computer algebra systems will be used and required in this course.

**Required Text Title:** Precalculus: Graphs and Models, A Right Triangle Approach, Bittinger et. al. (2016)

**Author of Text:** Pearson, My Math Lab

**Edition:** 6<sup>th</sup> edition

**ISBN No.:** 9780135834411

**Required Materials:** [TI 30XS Multiview Scientific Calculator](#)

**Optional Materials:** [Graphing Calculator](#)

# III. Student Learning Outcomes/Course Objectives

The following list offers students a consistent way to see how CF’s global learning outcomes are assessed in each class. This is for information purposes only and does not change the grading system used in this class. Only those learning outcomes relevant to this course are included below.

## **Quantitative and Analytical Reasoning: The student will understand and apply mathematical and scientific principles and methods.**

1. Perform accurate computations using order of operations with and without technology.  
How Measured: Quiz, Exam, Class Activity
  2. Identify and organize relevant information and complete the solution of an applied problem.  
How Measured: Quiz, Exam, Class Activity, Project
  3. Interpret and communicate understanding of visual representations of data.  
How Measured: Quiz, Exam, Class Activity, Project
  4. Demonstrate mathematical number sense and unit sense.  
How Measured: Quiz, Exam, Class Activity, Project
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# IV. Course Information & Assessment

## **Assignment Weights:**

Assignment Weights		
<b>Assessment</b>		<b>Points</b>
Homework—5 points	x 45	225
Attendance—50 points		50
Skills Checks—1 point	x 7	7
Rocket Project—50 points		50
In-class quizzes—10 points	x 13	130
Exams—75 points	x 8	600

Extra Credit Opportunities: Test Reviews (**5 points each for 40 points total**), Quiz Reviews (**1 point each for 14 points total**), Integrated Homework (**1 point each for 7 points**)

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## Grading Scale:

The grading scale is based on 1,000 points.

**\*a C or greater is required to pass\***

<b>Letter Grade</b>	<b>Points Required</b>
A	900+ points
B+	870-899.9 points
B	800-869.9 points
C+	770-799.9 points
C	700-769.9 points
D	600-699.9 points
F	< 600 points

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## Assignments:

### **HOMEWORK ASSIGNMENTS**

**225 points (23% of the grade)**

For each homework, the highest attempt counts. Each is worth 5 points. If you submit a partially completed paper, the grade will reflect the % completion.

### **ATTENDANCE**

**50 points (5% of the grade)**

Attendance is mandatory and part of your grade. It is proven that students who attend class (are present AND participate) frequently are more successful both in class and ultimately earn the intended degree. Including attendance in the grade calculations is not a punishment but rather a form of motivation and establishing good habits. Please communicate with your professor as soon as possible if you have extenuating circumstances. Timely communication is essential!

- 90% or more of classes = 50 points
- 80%-89% of classes = 40 points
- 70-79% of classes = 35 points
- 60-69% of classes = 30 points
- Fewer than 60% = 0 points

### **SKILLS CHECKS**

**7 points**

These quizzes check for understanding of prerequisite skills needed to be successful in each chapter. Each quiz is connected to an integrated homework assignment. Once you complete the skills check quiz, you will be directed to the homework assignment where the questions linked to outcomes you have already mastered will automatically be marked correct. This way, you only focus on non-mastered standards. You must get an 70% on each skills quiz/integrated homework in order to open up all assignments for that chapter. If you are struggling to get passing scores, you need to consider setting aside some time for extra tutoring or utilize additional resources.

## **ROCKET PROJECT**

**50 points (5% of the grade)**

In this class, we will take concepts learned throughout the semester and apply them to a real-world situation. You can work individually or in groups of 2-3. Each individual or group will turn a 2L soda bottle into a rocket. We will then launch these rockets together in the Center Lawn, calculating the time in air and angle of elevation. After we complete the launches, each individual or group will complete a report provided by your instructor.

## **IN-CLASS QUIZZES**

**130 points (13% of the grade)**

Quizzes will be given each Monday (unless otherwise noted) and will cover the previous weeks topics. You will complete the quiz in the classroom typically at the beginning of the class. I try to limit quizzes to around 5 questions and provide 20-30 minutes to complete. Notes will not be allowed but quiz reviews can be found on Pearson (see description below).

## **PROCTORED TESTS (IN-CLASS)**

**600 points (60% of the grade)**

Due to the heavy content and nature of this course, there will be seven proctored exams and a final (all exams cover one chapter only except for exam 6 and the final). Exams will be given in class during designated class time. All Exams are CLOSED NOTE AND CLOSED BOOK. Use of a personal calculator and instructor provided formula sheet (if applicable) are allowed. Exam reviews (counted as extra credit) are posted with questions *very* similar to the exam questions. A conscientious effort on these reviews will leave you very well prepared for the exams. Each Exam is worth 100 points. There will be **NO MAKEUPS** and **NO RETAKES** of any proctored exam without prior notification and certified personal or family emergency. Any missed exam will count as a **ZERO**.

## **EXTRA CREDIT**

**25 points**

- Test reviews: are posted on Pearson with questions *very* similar to the exam questions. A conscientious effort on these reviews will leave you very well prepared for the exams.
  - Quiz reviews: are provided on Pearson to prepare you for the content that may appear on quiz day. The quiz reviews will have no more than 10-15 questions, but only 3-5 questions will be tested upon. Quiz questions will be similar to or identical to those on the review.
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## **Additional Policies & Information:**

### **Late Work Policy:**

Homework assignments and in-class quizzes can be turned in late for a grade deduction. The last day to turn in any late assignments is at the time of the final exam. Make up quizzes must be scheduled through email and completed during my office hours. No make-up tests will be given unless there is an emergency or prior approval has been given by the instructor. In such an event, you must notify your professor before the exam due unless the emergency prohibits it and you will be asked to bring proof of the emergency. A make-up exam must be taken within one week of the original exam date unless the emergency prohibits it. While you do not need to disclose personal details, let your professor know **as soon as possible** if something is preventing you from participating online or completing work.

### **Canvas & Patriots Mail:**

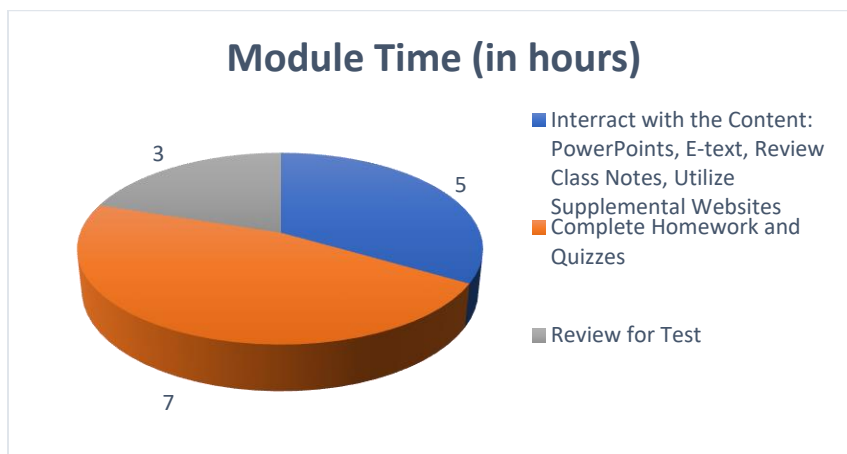
Canvas is the main mode of communication for this course. Any important and immediate information will be posted in the announcements or through the canvas inbox. You are expected to log-in at least one per day to check announcements and work on assignments. Typically, Canvas messages are sent to your Patriots mail, therefore you will want to check this daily as well.

### **Supplemental Websites:**

If you need more examples or a different way of approaching the problem try using YouTube or [Khan Academy](#) (not supported by Internet Explorer). Once on the website, search for the topic that you are having trouble with. YouTube will have countless videos of people all over the world answer questions and showing calculator steps. Khan Academy has videos as well, but within each unit, there are also practice problems that you can use to supplement your Math Lab practice.

## How to be Successful in This Course

The general rule for a five-credit class is that you spend approximately 5 hours per credit hour (15 hours total) per week interacting with the material and studying OUTSIDE of class. However, you may find that you need to spend more than 15 hours interacting with the material.



## V. Course Schedule/Outline

Class Date	Sections Covered	Topic	Assignments	Due Date
*Aug 15		Syllabus	Look around Canvas Link Pearson Account	<b>ASAP</b>
Aug 16	5.1, 5.2	Inverse Functions; Exponential Functions & Graphs	Chapter 5 Skills Check HW: 5.1, 5.2	<b>Aug 21</b>
*Aug 17	5.3	Logarithmic Functions	HW: 5.3	<b>Aug 21</b>
Aug 18	5.4, 5.5	Properties of Logs; Solving Exponential and Logarithmic Equations	HW: 5.4, 5.5	<b>Aug 21</b>
			5.1-5.5 Quiz Review	<b>Aug 22</b>
*Aug 22	5.6	<b>Quiz 5.1-5.5 (in class)</b> Applications of Exponents and Logs	HW: 5.6	<b>Aug 25</b>
			Test 1 Review	<b>Aug 25</b>
Aug 23	4.1, 4.2	Polynomial Functions; Graphing Polynomial Functions	Chapter 4 Skills Check HW: 4.1, 4.2	<b>Aug 28</b>
*Aug 24	4.3 Review	Polynomial Division Ch 5 Test Review Questions	HW: 4.3	<b>Aug 28</b>
			4.1-4.3 Quiz Review	<b>Aug 29</b>

Class Date	Sections Covered	Topic	Assignments	Due Date
Aug 25	<b>Test 1: Chapter 5</b>			
*Aug 29	4.4	<b>Quiz 4.1-4.3 (in class)</b> Zeros of Polynomial Functions	HW: 4.4	Sept 4
Aug 30	4.4,4.5	Rational Functions; Polynomial and Rational Inequalities	HW: 4.4, 4.5	Sept 4
*Aug 31	4.6	Polynomial and Rational Inequalities	HW: 4.6	Sept 4
Sept 1	6.1 Review	Trig Functions of Acute Angles Ch 4 Test Review Questions	Test 2 Review	Sept 6
*Sept 5	<b>No Class—Campus Closed for Labor Day</b>			
Sept 6	<b>Test 2: Chapter 4</b>			
*Sept 7	6.1, 6.2	Applications of Right Triangles	Chapter 6 Skills Check HW: 6.1	Sept 11
Sept 8	6.2, 6.3	Trig Functions at Any Angles	HW: 6.2	Sept 11
			6.1 & 6.2 Quiz Review	Sept 12
*Sept 12	6.3	<b>Quiz 6.1 &amp; 6.2 (in class)</b> Trig Functions at Any Angles	HW: 6.3	Sept 18
Sept 13	6.4	Radians, Arc Length and Angular Speed	HW: 6.4	Sept 18
*Sept 14	6.5	Circular Functions	HW: start 6.5	Sept 18
Sept 15	6.5,6.6	Graphs of Transformed Sine Functions and Cosine Functions	HW: finish 6.5, 6.6	Sept 18
			6.3—6.6 Quiz Review	Sept 19
			Test 3 Review	
*Sept 19	Review	<b>Quiz 6.3—6.6 (in class)</b> Ch 6 Test Review Questions	Test 3 Review	Sept 20
Sept 20	<b>Test 3: Chapter 6</b>			
*Sept 21	7.1	Identities: Pythagorean and Sum/Difference	Chapter 7 Skills Check HW: 7.1	Sept 25
Sept 22	7.2	Identities: Cofunction, Double-Angle and Half-Angle	HW: 7.2 *Review Identities*	Sept 25
*Sept 26	7.4	<b>Identities Quiz (in class)</b> Inverses of Trig Functions	HW: 7.4	Oct 2
Sept 27	7.4, 7.3	Proving Trig Identities	HW: start 7.3	Oct 2
*Sept 28	7.3, 7.5	Proving Trig Identities; Solving Trig Equations	HW: finish 7.3, start 7.5	Oct 2



Class Date	Sections Covered	Topic	Assignments	Due Date
Sept 29	7.5	Solving Trig Equations	HW: finish 7.5	<b>Oct 2</b>
			7.3—7.5 Quiz Review	<b>Oct 3</b>
			Test 4 Review	<b>Oct 6</b>
*Oct 3	8.1	<b>Quiz 7.3—7.5 (in class)</b> Law of Sines	Chapter 8 Skills Check HW: Start 8.1	<b>*Oct 9</b>
Oct 4	<b>No Class—Professional Development</b>			
*Oct 5	8.1 Review	Law of Sines Ch 7 Test Review Questions	HW: finish 8.1	<b>Oct 9</b>
			Test 4 Review	<b>Oct 6</b>
			8.1 Quiz Review	<b>Oct 10</b>
Oct 6	<b>Test 4: Chapter 7</b>			
*Oct 10	8.2	<b>Quiz 8.1 (in class)</b> Law of Cosines	HW: start 8.2	
Oct 11	8.2, 8.3	Law of Cosines Complex Numbers: Trig Notation	HW: 8.2, start 8.3	<b>Oct 16</b>
*Oct 12	8.3	Complex Numbers	HW: finish 8.3	<b>Oct 16</b>
Oct 13	8.4, 8.5	Polar Coordinates; Vectors and Applications	HW: 8.4, start 8.5	<b>Oct 16</b>
			8.2—8.4 Quiz Review	<b>Oct 17</b>
*Oct 17	8.5	<b>Quiz 8.2—8.4 (in class)</b> Vectors and Applications	HW: 8.5	<b>Oct 23</b>
Oct 18	8.6	Vector Operations	HW: 8.6	<b>Oct 23</b>
			Test 5 Review	<b>Oct 25</b>
*Oct 19	9.1	Systems of Equations in Two Variables	Chapter 9 Skills Check HW: 9.1	<b>*Oct 30</b>
Oct 20	9.2	Systems of Equations in Three Variables	HW: 9.2	<b>*Oct 30</b>
			8.5—9.2 Quiz Review	<b>Oct 24</b>
*Oct 24	Review	<b>Quiz 8.5—9.2 (in class)</b> Ch 8 Test Review Questions	Test 5 Review	<b>Oct 25</b>
Oct 25	<b>Test 5: Chapter 8</b>			
*Oct 26	9.3	Matrices and Systems of Equations	HW: 9.3	<b>Oct 30</b>
Oct 27	9.4, 9.5, 9.6	Matrix Operations; Inverse of Matrices	HW: 9.4,9.5	<b>Oct 30</b>
			9.3—9.5 Quiz Review	<b>Oct 31</b>
*Oct 31	9.6	<b>Quiz 9.3—9.5 (in class)</b> Determinants and Cramer's Rule	HW: 9.6	<b>Nov 6</b>
Nov 1	9.8	Partial Fractions	HW: 9.8	<b>Nov 6</b>
*Nov 2	10.2	The Circle and Ellipse	Chapter 10 Skills Check HW: 10.2	<b>Nov 6</b>
Nov 3	10.3	The Hyperbola	HW: 10.3	<b>Nov 6</b>
			10.2—10.3 Quiz Review	<b>Nov 8</b>
*Nov 7	<b>No Class!</b>			

Class Date	Sections Covered	Topic	Assignments	Due Date
Nov 8	10.1	<b>Quiz 10.2 &amp; 10.3 (in class)</b> The Parabola	HW: 10.1	<b>Nov 13</b>
*Nov 9	10.4	Nonlinear Systems of Equations and Inequalities	HW: 10.4	<b>Nov 13</b>
			Test 6 Review	<b>Nov 15</b>
Nov 10	11.1, 11.2	Sequences and Series; Arithmetic Sequences and Series	Chapter 11 Skills Check HW: 11.1, 11.2	<b>Nov 13</b>
			10.1—10.4 Quiz Review	<b>Nov 14</b>
*Nov 14	Review	<b>Quiz 10.1 &amp; 10.4 (in class)</b> Ch 9 & 10 Test Review Questions	Test 6 Review	<b>Nov 15</b>
Nov 15	<b>Test 6: Chapters 9 &amp; 10</b>			
*Nov 16	11.3	Geometric Sequences and Series	HW: 11.3	<b>Nov 20</b>
Nov 17	11.4	Mathematical Induction	HW: 11.4	<b>Nov 20</b>
			11.1-11.3 Quiz Review	<b>Nov 21</b>
*Nov 21	11.7	<b>Quiz 11.1-11.3 (in class)</b> Binomial Theorem	HW: 11.7	<b>Nov 27</b>
			Test 7 Review	<b>Nov 29</b>
Nov 22		<b>*Rocket Launch!</b>	Rocket Report	<b>Dec 1</b>
Nov 23—25	<b>No Class—Campus Closed for Break</b>			
*Nov 28	Review	Ch 11 Test Review Questions	Test 7 Review	<b>Nov 29</b>
Nov 29	<b>Test 7: Chapter 11</b>			
Nov 30	Review	Final Exam Review Questions		<b>Dec 5</b>
Dec 1	Review			
<b>Dec 5</b>	<b>Final Exam from 11:00 a.m.—1:00 p.m. in room 7-113</b>			

\*50-minute class

**All missing work must be turned in prior to the final exam!!!**

**Notes:** All homework assignments (except test reviews and quiz reviews) are due on Sunday nights! A few dates have been altered due to holidays and testing schedule. Due to unforeseen happenings, it may be necessary for the course assignment schedule to be altered. The instructor will always strive to be fair about any changes.

## **VI. Additional statements for this course**

### **Additional Tutoring:**

Tutoring is FREE for CF students! There are 3 options available:

- Ocala Campus—Mathematics Lab
  - Building 7, Room 106 (drop in only)
  - Monday—Friday from 8:00 a.m. to 4:30 p.m.
- Ocala Campus-Learning Support Center
  - Building 3, Room101 (appointment only)
  - 352-854-2322 ext. 1246
- Smarthink Tutoring Online
  - Available through Canvas and as a “Question Help” option on Pearson HW assignments

**\*\*Citrus and Levy have on-campus tutoring available as well\*\***

### **Do You Need Financial Aid?**

Attendance Verification is submitted each semester, generally in the third week of the term. Federal Student Aid requires that attendance is based on academic attendance or attendance at an academically-related activity. For this class, your attendance is verified based on **Chapter 5 Skills Check** on Pearson MyLab Statistics.

### **Early Support Program (ESP)**

The College of Central Florida is committed to helping you succeed and achieve your academic, personal and career goals. One of the ways we can accomplish this goal with you is through an Early Support Program. Our philosophy, based on extensive research and practice, is that when students are connected early to resources and support systems on campus they are more likely to stay in classes, perform better in those classes, and complete their path more quickly. Therefore, you may be contacted by your First Year Success Specialist, program Advisor and/or other resources on our campus if there is a time during the semester I feel it would be beneficial to your continued success. I am always your first point of contact for any concerns that affect your success or with course content, so I encourage you to come to me to discuss those issues. Also, be assured that I will first communicate any concerns I have with you and will then connect you with the other areas on our campus to help develop a network of support for you.

## Technology Requirements

This course uses Canvas to post course materials. Go to [MyCF](https://mycf.cf.edu/ICS/) (mycf.cf.edu/ICS/), login, click on the Academics tab, and follow the link to Go to Canvas. If you are not familiar with Canvas, you may access a self-tutorial by hovering over the Courses tab in Canvas and clicking on the Getting Started in Canvas course. Additional Canvas tutorials can be found under the help menu in the upper-right corner of your Canvas page. If you have any questions or encounter any problems logging on to Canvas or within the system, contact the Distance Learning Help Desk Monday through Friday, 8 a.m.-4:30 p.m. (fall and spring hours), or Monday through Thursday, 8:00 a.m.-4:30 p.m. (summer hours), at [dlhelp@cf.edu](mailto:dlhelp@cf.edu) or at 352-854-2322, ext. 1317. You may also use the 24/7 Canvas help desk by clicking the Help link in the upper right corner of Canvas.

## Library Resources

The CF Libraries are here to help with your research and information needs. Search the library catalog ([library.cf.edu](https://library.cf.edu)), or contact the Ocala campus library ([library@cf.edu](mailto:library@cf.edu), 352-854-2322 x1345) or the Citrus campus library ([citruslb@cf.edu](mailto:citruslb@cf.edu), 352-249-1205) with questions. Learn more about research help, online and database searching, and citing your sources by visiting the CF Virtual Library ([cf.libguides.com](https://cf.libguides.com)) or by visiting the Ocala library (Building 3) or Citrus library (Building C2, Room 202) for one-on-one help. Course reserves: Course textbooks and/or supplemental course material may be on reserve at the Library. Please call to inquire. If the item you are looking for is not on reserve, ask your instructor if they are able to place a copy on reserve.

## Correspondence

Please allow 24 hours for a response Monday morning through Friday afternoon and up to 48 hours for a response Friday evening through Sunday evening. Scheduled holidays may extend the response time.