

UF ONLINE

MAC 1114

SYLLABUS

SPRING 2015 (updated 01/04/15)

The course home page is located in Canvas. Log in at <https://lss.at.ufl.edu>.

You can send a message to one of the instructors below by going to your inbox in Canvas and selecting "Compose a new message".

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1. Introduction

1a. Course Content

This course is designed as a review of trigonometry to prepare the student for engineering calculus. If you plan to take business calculus, then you do not need this course. Note that instead of taking MAC 1140 and then MAC 1114, you could take MAC 1147, Precalculus Algebra/Trig, which is a very fast paced course and covers essentially the same material as the two separate courses.

A minimum grade of C (not C-) in MAC 1114 satisfies two hours of the general education requirement and also satisfies two of the three necessary hours of the pure math portion of the state Writing/Math requirement. Note: A student can receive at most four credits for taking both MAC 1147, and MAC 1140 or MAC 1114, and at most five credit hours for taking MAC 1147, MAC 1140, and MAC 1114. Students who successfully complete this course (C or better) can, with a grade of C or better in MAC 1140, advance to MAC 2311, Calculus 1 (for engineers and scientists).

Students taking this course for general education credit or the pure math portion of the Writing/Math requirement, and who do not need precalculus for their major or as preparation for calculus, might consider taking MGF 1106 or MAC 1105. For more information on math courses and math advisors go to <http://www.math.ufl.edu/>.

1b. Prerequisites

This course assumes prior knowledge of intermediate algebra (Algebra 2) and trigonometry. Students should be able to do algebra and arithmetic without a calculator.

MAC 1114 begins with a short review of some basic concepts in functions (Chapter 1). **You should already be competent in working this material.**

1c. Required Materials

- ◆ The textbook: **PRECALCULUS**, 9th edition, by Larson.
 - You may use either the e-book or a hard copy.
 - The solutions manual is NOT required.
- ◆ A valid WebAssign access code.
 - WebAssign provides a two-week grace period to use the online homework system before you must purchase an access code.
 - You should always use <https://www.webassign.net/ufl/login.html> to login to WebAssign (and then your Gatorlink login info as directed).

There are several purchase options:

- ◆ Purchase the textbook and WebAssign access codes together directly from the publisher at <http://www.cengagebrain.com/micro/1-1MSYIRB>.

- \$86 for the custom UF paperback book, access to the e-book, and a WebAssign access code; or
- \$50 for access to the e-book and a WebAssign access code.
- ◆ Purchase the textbook at a bookstore or elsewhere.
 - Either the UF custom 9th edition or the complete 9th edition may be used. If you purchase a new textbook, a WebAssign access code might (or might not) come with it, so please be aware.
 - Prices may vary.
- ◆ Purchase a WebAssign access code directly from WebAssign.

1d. Canvas

Canvas is located at <https://lss.at.ufl.edu/>; use your Gatorlink username and password to login. You can find your grades, announcements, lecture outlines, free help information, etc., at this site. You are responsible for verifying that your grades are accurate. You have one week after a score has been posted to contact your instructor if you believe there has been a grading or a recording error.

1e. Lectures

Viewing lecture presentations is an important aspect of the learning process. The lecture provides the main presentation of the course material. Each lecture consists of several videos for a total of approximately 1 hour. Lecture outlines can be printed from Canvas. It is suggested that you read the book, watch the lecture, do the checkpoints as they come up in the lecture, do the corresponding book homework and the WebAssign Homework, and then take the WebAssign Quiz, in that order. The WebAssign Quizzes are due as shown in the various calendars, but you may take them earlier.

1f. Calculator Policy

A basic non-scientific calculator may be used on homework, quizzes, check-ups, and exams. A basic non-scientific calculator has the ability to add, subtract, multiply, and divide, as well as the ability to take square roots (and perhaps buttons for percentages and storing values in memory). It is not the same as a scientific or graphing calculator. You will not be allowed to use a scientific calculator on exams, and any violations of this policy will be considered cheating.

1g. Help

Your instructor is available during office hours (or by appointment) on campus, and by email (or arranged conference) to answer your questions about the course material. You may also contact the lecturer, Mrs. Tornwall, during her office hours for help. **You should check Canvas regularly and consult with your instructor if you have any questions about recorded grades. All grade concerns must be taken care of within one week of receiving the score.** Your grade is subject to

being raised or lowered if there is a recording error, computational error, bubbling error, “padding” error, etc.

1h. Success

Success in MAC 1114 depends largely on your attitude and effort. Keeping up with the videos is critical. Most students find it beneficial to work daily on the material as opposed to saving it all for one day. It is not effective to sit and copy notes without following the thought processes involved in the lecture. For example, you should try to answer the questions posed by the lecturer. Students who actively participate have greater success.

Be aware that much of the learning of mathematics at the university level takes place outside of the classroom. You need to spend time reviewing the concepts of each lecture **before** you attempt homework problems. It is also important to spend some time looking over the textbook sections to be covered in the next lecture to become familiar with the vocabulary and main ideas beforehand so that you will be better able to grasp the material presented in the videos. **You should expect to spend at least 8 hours per week working on this course.**

1i. Students with Disabilities

Students requesting classroom accommodation must first register with the Disability Resource Center. The Dean of Students will provide documentation to the student who must then provide this documentation to the course instructor when requesting accommodation.

1j. Academic Honesty

All students are required to abide by the Academic Honesty Guidelines which have been accepted by the University. The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust, and respect. Students are expected to pursue knowledge with integrity. Exhibiting honesty in academic pursuits and reporting violations of the Academic Honesty Guidelines will encourage others to act with integrity. Violations of the Academic Honesty Guidelines shall result in judicial action and a student being subject to the sanctions in paragraph XIV of the Student Code of Conduct. The conduct set forth hereinafter constitutes a violation of the Academic Honesty Guidelines (University of Florida Rule 6C1-4.017).

2. Testing

You must register with ProctorU for each exam at least 4 days prior to the exam date. It is highly recommended that you reserve your exam time slots for all of your exams early in the semester in order to guarantee you can take the exam at the most convenient time for you. See the course calendar for the dates of the exams.

Students are responsible for material covered in the lecture notes, including practice problems at the end of some lectures, all assigned book homework problems, and all assigned WebAssign material.

For each exam you should have only the following items: pencils or pens, your Gator1 picture ID card or a government-issued picture ID, a basic non-scientific calculator, and up to 10 sheets of completely blank, white, scratch paper (no holes, lines, printing, etc.). NO scientific or graphing calculators are allowed. NO CELL PHONES, NO NOTES, NO CALCULATOR MANUALS, NO BOOKS, NO OUTSIDE HELP!

The first three exams each consist of 15 questions and have a 90-minute time limit. The final exam consists of 18 questions and has a 2-hour time limit. There is no partial credit unless a question has multiple parts that can be graded separately, in which case each part will be worth a fraction of the question's point-value.

3. Grading

3a. Course Grade

The course is based on 500 points accumulated as follows:

Welcome Quiz (in Canvas)	2 points (0.4%)
Self-evaluation (in Canvas)	1 point (0.2%)
Lecture Checkpoints (in Canvas)	36 points (7.2%)
WebAssign Homeworks (18 @ 2 pts, max. 30)	30 points (6%)
WebAssign Quizzes (best 9 of 11 @ 4 pts)	36 points (7.2%)
Checkups (in WebAssign; 3 @ 15 pts)	45 points (9%)
Midterm Exams (in WebAssign; 3 @ 80 pts)	240 points (48%)
Cumulative Final Exam (in WebAssign)	110 points (22%)

The course grade is determined by the number of points you have (not by the percentage), as shown below, and these cutoffs will be strictly enforced.

Grade	Points
A	450 – 500
A-	435 – 449.99
B+	420 – 434.99
B	400 – 419.99
B-	385 – 399.99
C+	370 – 384.99
C	350 – 369.99

C-	335 – 349.99
D+	320 – 334.99
D	300 – 319.99
D-	285 – 299.99
E	below 285

For information on dropping courses and withdrawals, go to <https://catalog.ufl.edu/ugrad/current/regulations/info/drops.aspx>.

For information about UF grades and grading policies go to <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

3b. Welcome Quiz

The Welcome Quiz is to make sure you understand what is expected of you in this course. You will find this assignment on Canvas. It is due at the beginning of the semester; see the calendar for the due date.

3c. Self-evaluation

The Self-evaluation is a quiz found in Canvas after Exam 2. Its purpose is to let you know your approximate standing in the class. See the calendar for the due date.

3d. Lecture Checkpoints

In each video is a Checkpoint problem that pertains to the concept recently covered. You should work the Checkpoint problem and write your answer down (a, b, c, d, or e), since you will need to enter your multiple-choice answers in Canvas. Checkpoint problems are due by the lecture due date (see the calendar), but is best to do them as soon as possible.

3e. Textbook Homework

The textbook homework assignments represent the minimum number of problems you should do in each section. Some homework problems suggest the use of a graphing calculator; they are designed to help you visualize important concepts and to reinforce the mathematical processes involved. The use of a graphing calculator when doing homework is not required, though a scientific calculator may be required to finish working certain problems. The textbook homework will not be graded, but you are encouraged to ask questions about it as necessary.

3f. WebAssign Homeworks and Quizzes

You have 10 attempts and unlimited time on each WebAssign Homework. You have three attempts and one hour on each WebAssign Quiz. See the calendar for the specific due dates.

DO NOT wait until the last minute to take a quiz, since if you encounter a computer glitch or if WebAssign is down, YOU may be out of luck!

The best attempt for each WebAssign Quiz and Homework is the score that is counted. The WebAssign Homeworks and Quizzes are open-book and open-note. You may have a tutor help you with the WebAssign Homeworks, but NOT with the Quizzes. You need to be able to do these problems on your own without any assistance in order to succeed in this course.

3g. Checkups

The Checkups (in WebAssign) are designed to give you feedback on your understanding of the course material prior to the corresponding midterm exam. They will be like a longer WebAssign Quiz. See the calendar for the due dates.

3h. Bonus Points

For each lecture, watching the lecture videos and then answering the bonus question found in Canvas can earn you bonus points. This must be done by the due date given for each lecture. The bonus question in Canvas will ask about the picture seen in the video.

3i. Make-up Policy and Extensions

ALL WORK MUST BE COMPLETED BEFORE THE FINAL EXAM (except for the Final Exam).

- ◆ Extensions: Life happens. While it is a much better strategy to work ahead in case life happens to you, occasionally you may fall behind. So, you will be able to submit assignments in Canvas (except for bonus) up to two days after the due date and still receive credit. In WebAssign, you will be able to request an extension for any assignment from within WebAssign; for tests and checkups, it is a 24-hour extension; for homework and quizzes, it is a 48-hour extension. Please note that an extension does not grant you any additional time to take a timed assignment once it is started. Also, please note that this is only meant to be used when one of those rare, unexpected emergencies come up. However, you do not need to contact anyone in order to take advantage of the extensions.
- ◆ Make-up Exams and Checkups: You will have the opportunity to take one make-up exam to replace one (missing or low) midterm exam score for any reason. The date of this make-up exam is before the final exam, as shown in the calendar. There are no make-ups for the checkups.
- ◆ Homeworks and Quizzes: There are no make-ups, since some of the quizzes are dropped and it is possible to reach the homework maximum even missing some problems on occasion.

3j. Incomplete Grade

A grade of I (incomplete) will be considered only if you meet the Math Department criteria which are found at <http://www.math.ufl.edu/>. An I only allows you to make

up your incomplete work, not redo your work. Also, any request for an I must be received before the final exam.

4. Instructor Evaluations

Students are asked to provide feedback on the quality of instruction in this course based on ten criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

5. Textbook Homework Assignments

You should read the textbook sections covered in each lecture before viewing the video. After each lecture, review your notes and the text to make sure you understand the main ideas prior to working the exercises.

If you have questions about the reading or homework exercises, you may ask your instructor (or a qualified tutor, etc.).

You should complete each assignment before the next lecture, since the material in each lecture often builds on previous concepts.

L7 Rectangular Coordinates and Graphs

Reading: Student Guide, Sections 1.1 and 1.2

Exercises (1.1), page 8: 1, 2, 3, 4, 14, 24, 32, 45, 51, 54, 56, 58

Note: The correct answer for 58(a) is $(x_0, -y_0)$.

Exercises (1.2), page 19: 3, 4, 5, 10, 26, 28, 29, 31, 34, 38, 43, 47, 48, 71, 74, 76, 79, 90

Additional exercises:

1. Find the equation of a circle in standard form with center at the point $(-3, 2)$ and tangent to the line (touching the line) $y = 4$.
2. Given the circle $x^2 + (y + 1)^2 - 1 = 8$, find its center, radius, and intercepts. (Hint: Sketch the graph.)

L8 Linear Equations and Functions

Reading: Sections 1.3 and 1.4

Exercises (1.3), page 31: 1, 2, 3, 4, 5, 6, 9, 11, 14, 19, 23, 30, 39, 45, 51, 53, 55, 65, 67, 70, 74, 87, 89, 90, 91, 93, 94, 96, 99, 101, 102, 103, 104, 105, 112

Exercises (1.4), page 44: 1, 2, 4, 7, 11, 12, 24, 29, 32, 36, 40, 47, 48, 57, 58, 59, 61, 63, 64, 68, 71, 73, 78, 82, 85, 86, 88, 89, 90, 93

L9 Analyzing Graphs of Functions

Reading: Section 1.5

Exercises (1.5), page 56: 1, 2, 3, 4, 5, 6, 7, 9, 11, 13, 18, 20, 23, 33, 37, 55, 56, 62, 66, 71, 72, 73, 83, 85, 88a, 93, 94, 95, 96, 98

L10 A Library of Functions and Transformations of Functions

Reading: Sections 1.6 and 1.7

Exercises (1.6), page 65: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 35, 36, 39, 43, 47, 48, 49, 50

Exercises (1.7), page 72: 1, 2, 3, 4, 5, 9, 11, 13, 14, 15, 16, 17, 19, 20, 21, 23, 25, 27, 29, 31, 33, 39, 47, 50, 51, 53, 55, 57, 71, 73, 74, 75, 76, 78, 80

L25 Radian and Degree Measure

Reading: Section 4.1

Exercises (4.1), page 269: 1-7 all, 9, 12, 14, 16, 17-31 odd, 35, 38, 39, 42, 44, 52, 54, 55, 56, 57, 61, 62, 64, 66, 69-73 all

L26 Trigonometric Functions and the Unit Circle

Reading: Section 4.2

Exercises (4.2), page 277: 1-5 all, 8, 9-13 all, 18, 19, 20, 22, 23, 29, 32, 33, 35, 36, 38, 40, 49, 53, 54, 60, 61

L27 Right Triangle Trigonometry and Trigonometric Functions of Any Angle

Reading: Sections 4.3 and 4.4

Exercises (4.3), page 286: 1-5 all, 7, 11, 21, 23, 25, 27, 29, 43, 44, 50, 52, 54, 56, 57, 59, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 77, 78-85 all, 88

Exercises (4.4), page 296: 1-9 all, 11, 19, 20, 21, 22, 24, 28, 30, 31, 34, 36, 37, 39, 41, 43, 46, 48, 49, 51, 55, 56, 63, 66, 68, 70, 74, 91, 96, 97, 103, 106

L28 Graphs of Sine and Cosine Functions

Reading: Section 4.5

Exercises (4.5), page 306: 1-5 all, 7, 18, 19, 21, 23, 25, 27, 29, 32, 35, 37, 43, 44, 48, 59, 61, 73, 76, 80, 83, 86, 88, 97, 102

L29 Graphs of Other Trigonometric Functions

Reading: Section 4.6

Exercises (4.6), page 317: 1, 2, 3, 5-14 all, 17, 21, 24, 28, 34, 37, 49, 62, 63, 85, 86, 87, 92

L12 Inverse Functions

Reading: Section 1.9

Exercises (1.9), page 90: 1, 2, 3, 4, 5, 6, 14, 19, 21, 27, 29, 33, 35, 37, 39, 45, 49, 50, 57, 61, 63, 64, 65, 70, 72, 73, 76, 79, 84, 86, 88, 92, 93, 95, 96, 97, 101

L30 Inverse Trigonometric Functions

Reading: Section 4.7

Exercises (4.7), page 326: 1, 2, 3, 4, 5-17 odd, 19 no calc, 20 no calc, 39, 40, 42, 46, 47-52 all, 54, 56, 58, 66, 70, 72, 74, 78, 80, 81, 83, 86, 97-102 all, 104a, 104b use calc, 108a, 108b use calc, 110-114 all

L31 Applications

Reading: Section 4.8

Exercises (4.8), page 336: 1, 16, 20, 22, 24, 26, 29, 33, 34, 36, 37, 40, 42, 46

L32 Using Fundamental Identities

Reading: Section 5.1

Exercises (5.1), page 355: 1-6 all, 8, 9, 10, 14, 15-20 all, 21-45 odd, 49, 53, 56, 57, 61, 63, 69, 71

L33 Verifying Trigonometric Identities

Reading: Section 5.2

Exercises (5.2), page 362: 1-8 all, 13, 16, 19, 27, 29, 33, 39, 41, 47, 59, 61, 64, 67, 68, 69, 71

L34 Solving Trigonometric Equations

Reading: Section 5.3

Exercises (5.3), page 371: 3, 4, 5, 9, 11, 13, 17, 19, 23, 27-45 odd, 63, 65, 73, 85, 87

L35 Sum and Difference Formulas

Reading: Section 5.4

Exercises (5.4), page 379: 1-7 all, 9, 11, 17, 27-41 odd, 45, 47, 53, 57, 63, 65, 69, 73, 81-84 all, 86

L36 Multiple-Angle and Product-to-Sum Formulas

Reading: Section 5.5

Exercises (5.5), page 389: 1-7 all, 9-27 odd, 33, 37, 41, 45, 65, 68, 69

L37 Law of Sines, Law of Cosines

Reading: Sections 6.1 and 6.2

Exercises (6.1), page 408: 5-17 odd, 26, 27, 29, 32, 35-38, 40, 42, 47-51, 55, 56

Exercises (6.2), page 415: 5-17 odd, 25, 26, 29, 30, 37, 40, 43, 44, 45-50, 60