ONLINE MAC 1140 SYLLABUS

SUMMER C 2020 (updated 05/02/2020)

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

You can send a message to the Coordinator below by going to your inbox in Canvas and selecting "Compose a new message". If you are requesting assistance on a certain problem, please include details showing your work on the problem; feel free to attach a photo of your work.

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1. Introduction

1a. Course Content

College algebra, functions, and exponential and logarithmic functions. This course is designed as a review of algebra to prepare the student for MAC2233 Survey of Calculus (mainly business majors). If your goal is to take MAC2311 Analytical Geometry and Calculus I, then after successfully completing this course, you should take MAC1114 Trigonometry, and then take MAC2311, or you could take MAC1147 Precalculus Algebra/Trig which is a very fast-paced 4-credit course.

A minimum grade of C (not C-) in MAC 1140 satisfies three hours of both the pure math general education requirement and the state 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 advance directly into MAC 2233, Survey of Calculus.

Students taking this course to meet general education or state requirements, who do not need precalculus for their major or as preparation for calculus, might consider taking MGF 1106, MGF 1107, 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). Students should be able to do arithmetic without a calculator.

MAC 1140 begins with a short review of high school algebra topics (appendices A1 – A7). **You should already be competent in working this material.**

1c. Required Materials

- ♦ A valid WebAssign access code.
 - WebAssign provides a two-week grace period before you must purchase or enter an access code. Do not purchase an access code before the end of drop/add unless you are sure you will remain in the course. Access codes may not be refundable, depending on the circumstances and the vendor, so it's best to avoid any complications.
 - A WebAssign access code (includes access to an electronic version of the textbook through WebAssign) can be purchased at a discount and charged to your UF account by using the following link.
 - https://www.bsd.ufl.edu/g1c/bookstore/allaccess.asp
 - You may also purchase an access code at full price directly from WebAssign, or possibly from the bookstore or elsewhere. If you are purchasing from the bookstore or elsewhere, be sure the access code

is good for this course first by checking the code's prefix at the following site to make sure it works with the textbook.

http://www.webassign.net/user_support/student/cards.html

- See the syllabus section 1e for details about logging in to the system.
- ♦ The textbook: **Precalculus**, 10th edition, by Larson.
 - You may use either the e-book (comes with WebAssign) or a hard copy. Note that:
 - if you purchase a hard copy, a WebAssign access code might (or might not) come with it, so please be aware;
 - access to the e-book is included with the WebAssign access code (and it cannot be excluded); and
 - you will need to login to WebAssign to view the e-book.
 - o The campus bookstore also sells loose-leaf copies.
 - The solutions manual is not required.
 - The textbook has a useful website with extra materials to assist you: http://www.larsonprecalculus.com/precalc10e/.

1d. Canvas

Canvas is located at https://elearning.ufl.edu/; use your Gatorlink username and your password to login. You can find your lecture videos, checkpoint quizzes, bonus questions, grades, announcements, lecture outlines, free help information, etc., at this site. (Online homework, quizzes, checkups, and exams are in WebAssign.) 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.

Note: Important information may be included in the announcements in Canvas. You are expected to read them.

1e. WebAssign

Note: WebAssign and Canvas are separate systems, so there will be a delay before your scores in WebAssign are copied over to Canvas. Scores will not be copied over until the weekend and after the extension period for an assignment has elapsed.

In WebAssign, you will find your online homework assignments (not the same as the textbook homework), quizzes, checkups, and exams. The online homework and quizzes can be completed early, but the exams cannot, so you should not expect to see the exams shown in WebAssign until they are available to be completed.

You should always use https://www.webassign.net/ufl/login.html to login to WebAssign (and then your Gatorlink login info as directed). When logging in, there are two different "LOG IN" buttons on the login page for WebAssign; you should use the one in the lower left (see Figure 1: WebAssign login page).

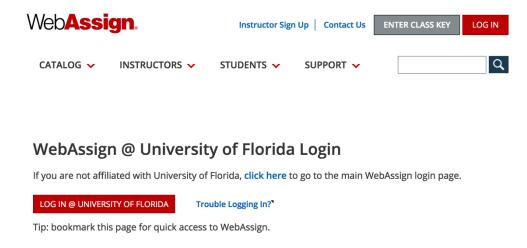


Figure 1: WebAssign login page

1f. Lectures

Viewing lecture presentations is an important aspect of the learning process. The lecture provides the main presentation of the course material in addition to the textbook. Each lecture consists of several videos for a total of approximately 1 hour. Lecture outlines can be printed from Canvas and used to take notes.

1g. Suggested workflow

We suggest that you read the book, watch the lecture, do the checkpoint problems as they come up in the lecture, do the corresponding textbook homework and the online homework, and then take the quiz (if applicable), in that order. The quizzes are due as shown on the **Error! Reference source not found.**, but you may take them earlier. In fact, you may work far ahead on everything except for the checkups and exams.

1h. Calculator Policy

The only calculator allowed on exams is the non-scientific calculator provided to you in Canvas. For all other assignments, you are free to (and might need to) use a scientific calculator of your choosing.

This is not a plug-and-chug calculator course. You need to understand the mathematics and be able to do the algebraic and trigonometric manipulations first, resorting to the calculator only at the ends of the problems (as necessary) to get the approximate answer(s) as the problems may require. Be sure to carefully read each problem since some will expect exact answers (e.g. 1/3) and some will expect decimal approximations (e.g. 0.3333), and these are not usually equal. Unless a

problem specifically asks for an approximation, you should assume it requires the exact answer.

When working with approximations, you should keep all digits of the intermediate steps in your calculations, and only round the final answer as required by the problem. Failure to do this can result in a rounding error and failure to receive credit for the question part. We will not grant any credit for rounding errors on your part.

You should try to use the non-scientific calculator (in Canvas) that you will be using on exams for nearly all calculations that you don't do by hand on checkpoints, homework, quizzes, and checkups, since that will be better practice for exams. Some problems on checkpoints, homework, quizzes, and checkups may have steps that require computing an exponential, logarithmic, or trigonometric function value that is not a standard value that should be memorized or that cannot reasonably be completed without an additional aid. In those cases only, you should use a scientific calculator, table of values, or other appropriate aid in order to complete the problem. For example, you should not use an additional aid to compute $\sin 60^\circ$ or $\log \sqrt{10}$ since you should already be able to compute their values as $\sqrt{3}/2$ and 1/2, respectively; but you can use an additional aid to compute an approximation to $\sin 79^\circ$ or to $\log 73$, as necessary.

If a problem on any exam would normally require the use of a scientific calculator, then we will give you additional information in the problem on the exam, either directly giving certain function values that you may need or giving you function values that can be used to determine the value you need. For example, if the approximate value of $\ln 6$ was needed, then an exam problem might give that value (possibly among others) to you, or the exam problem might give you approximations for $\ln 2$ and $\ln 3$, from which you can compute an approximation for $\ln 6$ since $\ln 6 = \ln 2 + \ln 3$. On every exam, you will be supplied with the approximate values for π and e at the top of the exam, so, if you need, for example, to compute π^{-3} , you can just multiply the approximations then take the reciprocal to get the answer, i.e. calculate $\frac{1}{\pi \times \pi \times \pi}$.

As you can see from the preceding discussion, all types of problems you see in homework can appear on exams even if you use a scientific calculator for the homework (and despite the fact you are NOT allowed to use a scientific calculator on exams) since on the exam you will be given extra information.

1i. Help

For help resolving technical issues (computer problems, Gatorlink, etc.), contact the UF Computing Help Desk at http://helpdesk.ufl.edu or 352-392-HELP (4357).

Your instructor (listed on the front page of the syllabus) is glad to help. If you're seeking help on a specific problem, you should first have attempted the problem yourself. If you're seeking help online, you can take a snapshot of your work and attach that to a message in the Canvas Inbox requesting help. Office hours are also

available, as indicated on the cover of this syllabus. In addition to your instructor, the following third-party aids are available.

- Other free in-person assistance for students who can make it to campus:
 - The Teaching Center, located at SE Broward Hall; see https://teachingcenter.ufl.edu/tutoring/. Note: The exam format is different than the live MAC1147 course in that the online exams are administered through WebAssign.
 - o The Little Hall Math Lab, located in LIT 215
 - The Office of Academic Support; see <u>http://oas.aa.ufl.edu/programs/tutoring/</u>
- ◆ The textbook has a website with various resources available to assist students: http://www.larsonprecalculus.com/precalc10e/.
- ◆ The Mathematics Department maintains a list of qualified private tutors for hire. Go to https://math.ufl.edu/department/ and click on Academics.
- ◆ UF's Counseling & Wellness Center offers counseling support in case of issues with academics, adjusting to the stress of college life, or personal challenges. Please use this resource before you get overwhelmed! See http://www.counseling.ufl.edu/cwc/, or call (352) 392-1575. In a crisis, consider calling:
 - Alachua County Crisis Center: 352-264-6789
 - o Alachua County Rumor Control: 352-264-6557
 - o National Suicide Hotline: 1-800-SUICIDE (7842433)
 - o National Suicide Prevention Lifeline: 1-800-273-TALK (8255)

1j. Success

Success in MAC 1140 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 12 hours per week working on this course. Many students will need to spend more time than this to be successful in this course.**

If you do not complete the textbook homework (not graded) in addition to all other assignments, and complete all assignments thoroughly, then you are likely not prepared enough to do well on exams. Note that if you find you need even more practice beyond the existing assignments, you can use the unassigned problems in the textbook, in which case please feel free to ask you instructor(s) questions about any of those problems.

1k. Students with Disabilities

Students requesting accommodation must first register with the Disability Resource Center. (See https://drc.dso.ufl.edu/.) The Dean of Students will provide documentation to the student who must then provide this documentation to the Online Coordinator when requesting accommodation.

11. Academic Honesty

The official Student Honor Code and Student Conduct Code can be found at https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/. If you have never read through those, then you should do so now. In particular, there is the Honor Pledge:

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student Honor Code. On all work submitted for credit by Students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

Any dishonorable activities should be reported immediately. **Any student caught cheating will automatically fail the course** and will be subject to additional honor court penalties. Students are expected to do their own work unless otherwise specified. If you have any doubt, you should ask for clarification before you commit a possible violation.

1m. Complaints

Each online distance learning program has a process for student complaints within its academic and administrative departments at the program level. Go to http://www.distance.ufl.edu/student-complaint-process for more information.

2. Testing with Honorlock

Further information will be provided soon (after the end of drop-add; watch for the announcements).

2a. Testing Environment

You should obey the following rules regarding your testing environment. Failure to follow these rules may result in appropriate sanctions being applied.

- 1. Arrange to have a room with four walls, a desk or table, doors closed (and lockable), and no one else present. You should be facing a plain wall (not a window) when you take your exam. If the room is not suitable, you will not be allowed to continue with the exam.
- 2. Make sure you won't be disturbed by others. Any recorded disturbance will be reported by Honorlock as possible cheating, in which case we may impose a penalty (among other possible sanctions).
- 3. Before your appointment, clear your testing area of everything except:
 - UF ID card (a passport or state ID can be used in a pinch),
 - writing instruments,
 - up to 5 sheets of completely blank (both sides), white scratch paper.

Anything else will be flagged as an unpermitted resource and may be reported by Honorlock as possible cheating. In particular, **the only calculator allowed is the non-scientific calculator we provide in Canvas**.

2b. During an Exam

You should obey the following rules during an exam. Failure to follow these rules may result in appropriate sanctions being applied.

- 1. During the exam, avoid looking anywhere other than at your computer and your scratch paper. Any other glances may be picked up by Honorlock and reported as cheating, in which case we may impose a penalty (among other possible sanctions).
- 2. If your connection with Honorlock goes down, then stop everything. Sometimes it is a momentary and passing thing, and sometimes it is a more serious problem. You are at this point permitted to retrieve your phone for the purposes of making sure it is on and receiving any calls from Honorlock.
- 3. At the end of your exam, you must contact your proctor to let them know you have finished. Your proctor will then give you instructions that you must follow. If you disconnect before the proctor witnesses you logging out of everything according to their directions, then they will report it as possible cheating, and you will be subject to being penalized (whether you were actually cheating or not).

3. Grading

You should check Canvas regularly and consult with the Online Coordinator if you have any questions about recorded grades. All grade concerns must be taken care of within one week of receiving the score in Canvas. Your grade is subject to being raised or lowered if there is a recording error, computational error, "padding" error, etc.

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.

3a. Course Grade

You will have ample opportunity to earn your grade in this course. There will be no extra assignments, extra make-ups, rounding up, etc. because you "need" a certain grade. (Any requests for such will be ignored.) If you "need" a certain grade, you should work hard all semester to make sure you earn it.

Here are the different assignment categories, as well as their weights in your course grade computation, where to find the assignments, and the number of submission attempts per assignment (for Canvas) or per question (for WebAssign).

<u>Category</u>	<u>Number</u>	Drops	Location	<u>Weight</u>	Attempts
Welcome Quiz	1	0	Canvas	0.4%	∞
Self-evaluation	1	0	Canvas	0.2%	1
Checkpoints	24	3	Canvas	7.2%	1
Bonus	24	0	Canvas	1.8%	1
Offline Homework	24	0	Syllabus/Textbook	0.0%	∞
Online Homework	24	3	WebAssign	6.0%	10
Quizzes	14	3	WebAssign	7.2%	3
Checkups	4	1	WebAssign	9.0%	3
Exams	3	0*	Honorlock/WebAssign	48.0%	2
Final Exam	1	0	Honorlock/WebAssign	22.0%	2
			Total:	101.8%	•

The course grade is then determined by your final percentage as follows:

<u>Grade</u>	Percentage	<u>Grade</u>	<u>Percentage</u>
Α	90.00% and above	С	70.00% to 73.99%
A-	87.00% to 89.99%	C-	67.00% to 69.99%
B+	84.00% to 86.99%	D+	64.00% to 66.99%

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^{*} There is a make-up opportunity for exams; see the Make-up Policy. If you take Make-up Exam N, where N is 1, 2, or 3, then technically either your Exam N score or your Make-up Exam N score is dropped (whichever is lowest is dropped).

<u>Grade</u>	Percentage	<u>Grade</u>	<u>Percentage</u>
В	80.00% to 83.99%	D	60.00% to 63.99%
В-	77.00% to 79.99%	D-	57.00% to 59.99%
C+	74.00% to 76.99%	Е	56.99% and below

3b. Welcome Quiz

The Welcome Quiz can be found in Canvas. It is due at the beginning of the semester; see the **Error! Reference source not found.** for the due date. You should read the syllabus before attempting it. **You must score 100% on the Welcome Quiz before continuing with the course.**

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 **Error! Reference source not found.** for the due date.

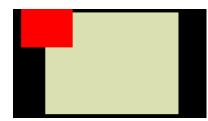
3d. Checkpoints

In each lecture 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 **Error! Reference source not found.**), but it is best to do them as soon as possible. You can only submit your answers once. After submitting your answers, the feedback will contain a link to a video with solutions.

3e. Bonus

For each lecture, watching the lecture videos and then answering the bonus question found in Canvas can earn you bonus (i.e. available credit beyond the 100% otherwise available). This must be done by the due date given for each lecture; there are no extensions or make-ups for bonus.

Each bonus question will ask about a picture that appears in one of the lecture videos for 4 to 5 seconds, and you can only submit your answer once. The sizes and locations of the pictures do change, depending on the picture, but they're all about the same relative size in the video as the small red box is in the image to the right. If you happen to miss a bonus image, please consider that it's probably a better use of your time working extra



practice problems, which improves your mathematical skills, than hunting for the bonus image, which does nothing to help increase your mathematical skill.

There will be no other bonus points, extra assignments, or extra make-ups.

3f. Offline Homework

The textbook homework assignments listed at the end of this syllabus 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 the homework is not required, though a scientific calculator may be required to finish working certain problems. The textbook homework will not be graded (i.e. you do not need to submit it), but you are encouraged to ask questions about it as needed. You are allowed to seek outside assistance with the textbook homework, but you always need to be able to work problems on your own in order to really succeed.

There is a link provided in Canvas with the textbook answers.

3g. Online Homework

You have ten attempts per question/part for each WebAssign homework. You can see the number of submission attempts (and how many you've used) for any problem by clicking the plus icon to the right of the problem number. (This applies to any assignment in WebAssign, including exams.) This homework should be completed AFTER working the textbook homework. See the Error! Reference source not found. for the due dates. You are allowed to seek limited outside assistance with the WebAssign homework, but you need to be able to work problems on your own to succeed. "Limited outside assistance" means you can ask someone for a hint or to look over your work to spot any mistakes; it does not mean you can have someone else work a problem for you in its entirety. Also, keep in mind that sometimes the best learning comes from the struggle you face in figuring out how to work a problem; that is good mental exercise, training you to think more logically and methodically.

3h. Quizzes

You have three attempts per question and one hour for each quiz in WebAssign. The countdown timer begins once you open the quiz and it cannot be reset, so **DO NOT open a quiz unless you're ready to take it**. A quiz can cover anything that has a due date on or before the due date of the quiz as shown on the **Error! Reference source not found.** While the quizzes are effectively open-note and open-book by virtue of not being proctored, you should prepare for them as if they are closed-note and closed-book to better reinforce your learning as you progress through the course. **You are required to work each quiz by yourself, with no assistance from anyone else whatsoever.**

3i. Checkups

The checkups (in WebAssign) are designed to give you some feedback on your understanding of the course material prior to the corresponding exam. Because of this, your first attempt to answer each question should be a thoughtful one, on your own, without referring to the textbook, notes, or anyone else. **You are required to**

work the checkups on your own, but you may ask your instructors for assistance. If you have any trouble answering a question correctly under those conditions, then that indicates your need to review, study, or work more practice problems from the textbook. However, the checkups cannot cover every possibility that could appear on an exam, so they should not form the sole basis of your studying for an exam.

You have three attempts per question for each checkup. Each checkup should not be attempted until all preceding homework assignments are completed. Also, while the Final Checkup is approximately three times as long as the other checkups, it is worth exactly the same as the other checkups.

3j. Exams

All exams are in WebAssign but are proctored through Honorlock; their dates are shown on the **Error! Reference source not found.**, but they will not be visible in WebAssign until the start of the exam window. You must sign up for an appointment with Honorlock, and during that appointment they will open the exam for you and monitor while you take the exam; see Testing with for more information.

Students are responsible for material covered in the lecture notes (including practice problems at the end of some lectures), all assigned textbook homework problems, and all assigned WebAssign material. Note that questions on the exams will mostly resemble these problems, but some may also be different (while still covering the same material). Completing the checkup is not, in and of itself, sufficient preparation for an exam.

The three midterm exams have a 90-minute time limit, and the final exam has a 2-hour time limit. There will be 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. For exams, you will have two attempts per question or part of a question, and your last submitted answer is the one that counts.

3k. Extensions

DO NOT wait until the last possible minute to start an assignment, since if you encounter any problems YOU will be out of luck.

An <u>extension period</u> is a short amount of time, after the regular due date, which can be used to complete an assignment late but without any penalty. No assignment will be accepted after its extension period. Note that applying an extension changes the due date but does not grant extra time on a quiz; once a quiz is opened, the timer starts counting down until it runs out and then you can no longer work on the quiz.

The extension periods for assignments are as follows:

- ♦ Bonus: 0 days (no extension period);
- Exams: 1 day (24 hours), already added to the due dates in WebAssign and the exam windows in Honorlock;

♦ All other assignments: 2 days (48 hours), with extensions in WebAssign provided through the "automatic extension" mechanism (see below).

Prior to May 18, all assignments (including bonus) will have extensions through May 18, and extension periods apply. To use an extension in WebAssign you will need to request it as described below.

After May 18, the published due dates and extension periods apply. To use an extension in WebAssign you will need to request it as described below.

Scores will not be copied from WebAssign into Canvas until the weekend and after each assignment's extension period is over. In particular, this means no scores will be copied into Canvas until after May 23.

To use an extension:

- ◆ If the assignment is in Canvas, then you do not need to do anything to make use of an extension; the extension period has already been incorporated in the "Available until" date and time. Just complete the assignment like normal before the "Available until" date and time expire. You may notice the score in the Canvas gradebook highlighted to show the assignment was completed after the "Due" date; this does not affect your grade in any way.
- ◆ If the assignment is an exam, then the extension period has already been incorporated into the due date shown in WebAssign and the extension day is available for scheduling through Honorlock, so no special action is required on your part except to schedule the appointment with Honorlock. You are strongly advised to plan to take each exam on its due date, that way if something happens and you are unable to take it that day you will be able to re-schedule for the extension day.
- ♦ For all other assignments (in WebAssign), you will have to request an "automatic extension" to enable the extension period. Use the following steps prior to opening the assignment.
 - 1. In WebAssign go to the course, and in **My Assignments** scroll down under **Current Assignments** to find **Past Assignments**. Click on **Past Assignments**. Note: It is impossible to request the extension until the assignment is past its due date.
 - 2. Find the assignment for which you wish to request the extension. Beneath the due date of the assignment there will be an Extension Request link. Click that link.
 - 3. A window will pop up showing the available automatic extension. Click the button at the bottom that says Accept Automatic Extension.
 - 4. The pop-up window should now display the extension information and confirm that the extension has been applied. Close the window by clicking on Close this window in the upper right corner of the pop-up.

31. Make-up Policy

Due to the ability to work ahead on most assignments, the extensions allowed, and the fact that most assignment categories have multiple drops (see Course Grade), most assignments will not be permitted make-ups. The only exceptions to this no make-up policy are that one midterm exam may be made up (see the following paragraph) and that the Final Exam may be made up with approved hardship documentation. If you miss the Final Exam due to negligence, we may permit you to make it up shortly thereafter, but there will be a penalty applied to your score.

Each student shall be permitted one make-up exam for any reason, with the greater of the original exam score and the make-up exam score used in grade calculations. This make-up exam will be taken after Exam 3, but before the Final Exam; see the Error! Reference source not found. for the date. Before taking the make-up, in Honorlock you will need to sign up for the generic "Make-up Exam". (The usual 3-day sign-up rule applies.) When you log on to take the make-up, at that time you will choose which make-up exam you want to take. There is a separate make-up exam for each of the midterm exams, but you may only take one of the make-up exams. (Any attempt to take more than one will result in none of them counting and prosecution for cheating.) The make-up exam will be similar to the corresponding midterm in both the number of questions and the textbook sections / lecture modules being tested.

3m. 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/department/incomplete-grades/. An I only allows you to make up your incomplete work, not to 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. The University will send you an email prior to the opening date giving 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 videos. 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.

L1 Real Numbers

Reading: Syllabus, Appendix A.1

Exercises (A.1), page A11: 1, 3, 6, 7, 9, 16, 19, 21, 25, 27, 33, 35, 37, 38, 41, 44, 47, 49, 57, 62, 69, 71, 73, 74, 75, 77

L2 Exponents and Radicals

Reading: Appendix A.2

Exercises (A.2), page A23: 1, 4, 8, 10, 13, 20, 25, 26, 29, 30, 39, 41, 46, 47, 49, 51, 52, 53, 55, 57, 58, 59, 60, 61, 63, 65, 68, 71, 72, 73, 74

Additional exercise: Simplify the radical expression $\sqrt[3]{81x^7y^2} \cdot \sqrt[3]{36x^2y^2}$.

L3 Polynomials and Factoring

Reading: Appendix A.3

Exercises (A.3), page A33: 1, 2, 5, 8, 11, 17, 23, 25, 29, 31, 33, 35, 39, 41, 43, 45, 49, 53, 57, 65, 69, 75, 81, 88, 91, 92

L4 Rational Expressions

Reading: Appendix A.4

Exercises (A.4), page A42: 4, 5, 7, 15, 19, 29, 31, 35, 38, 42, 45, 50, 53, 54, 55, 58, 59, 60, 61, 67, 70, 72, 73, 77, 79, 80

L5 Solving Equations

Reading: Appendix A.5

Exercises (A.5), page A56: 1, 3, 4, 12, 17, 19, 21, 24, 33, 37, 41, 42, 43, 50, 51, 54, 62, 64, 70, 75, 78, 79, 82, 84, 85, 87, 88, 90, 91, 94, 96, 98, 99, 100

Additional exercises: Find all real solutions and check your answers.

1.
$$6x^{-2} + x^{-1} = 2$$

2.
$$8(m-4)^4 - 10(m-4)^2 + 3 = 0$$

3.
$$(y+3)^{2/3} - 2(y+3)^{1/3} - 3 = 0$$

3.
$$(y+3)^{2/3} - 2(y+3)^{1/3} - 3 = 0$$
 4. $4(x+1)^{1/2} - 5(x+1)^{3/2} + (x+1)^{5/2} = 0$

$$5. \ \frac{1}{x-3} + \frac{3}{x+3} = \frac{6x}{x^2 - 9}$$

$$6. \ \frac{x^2 - 9}{x^2 - 2x - 3} = \frac{3}{2}$$

7.
$$x^8 - 4x^4 - 5 = 0$$

8.
$$3x^4 + 10x^2 - 25 = 0$$

9.
$$\sqrt{x+7} + 3 = \sqrt{x-4}$$

10.
$$2x = 1 - \sqrt{2 - x}$$

11.
$$x = \sqrt{15 - 2x}$$

12.
$$(5x^2 - 6)^{1/4} = x$$

13.
$$\sqrt[3]{4x+3} = \sqrt[3]{2x-1}$$

14.
$$(2x-1)^{2/3} = x^{1/3}$$

15.
$$\sqrt{x} - (3)\sqrt[4]{x} - 4 = 0$$

16.
$$x^{1/2} + 3x^{-1/2} = 10x^{-3/2}$$

17. Factor $x^6 - 2x^4 + x^2$ completely and find all of the real solutions of the equation $x^6 - 2x^4 + x^2 = 0$

L6 Linear Inequalities and Algebraic Errors

Reading: Appendices A.6 and A.7

Exercises (A.6), page A64: 4, 5, 15, 28, 34, 38, 54, 55, 69, 73, 75, 76, 79, 80, 81, 83, 86, 89, 91, 93, 95, 97, 101, 105, 109, 110, 111, 112, 114

Exercises (A.7), page A72: 3, 7, 10, 15, 19, 21, 23, 25, 28, 29, 33, 37, 39, 43, 51, 53, 55, 56, 57

L7 Rectangular Coordinates and Graphs

Reading: Sections 1.1 and 1.2

Exercises (1.1), page 8: 1, 2, 3, 4, 9, 11, 13, 26, 28, 29, 38, 40, 43, 47, 48, 51, 52, 53, 54, 58

Exercises (1.2), page 19: 2, 4, 5, 11, 15, 21, 28, 29, 31, 33, 37, 40, 41, 42, 43, 45, 47, 67, 69, 72, 73, 78, 80, 83 a, b, 87, 88, 89

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: 2, 4, 5, 9, 11, 13, 21, 23, 27, 39, 41, 47, 55, 65, 67, 68, 69, 70, 71, 73, 87, 89, 91, 93, 94, 95, 99, 101, 103, 104, 105, 107, 110, 111

Exercises (1.4), page 44: 1, 3, 4, 5, 7, 11, 13, 17, 18, 22, 23, 27, 33, 41, 42, 44, 46, 53, 56, 57 a, c, 59, 61, 63, 64, 67, 75, 78, 81, 85, 86, 89, 90, 92

L9 Analyzing Graphs of Functions

Reading: Section 1.5

Exercises (1.5), page 56: 1, 2, 6, 7, 9, 11, 13, 19, 24, 36, 40, 55, 63, 66, 67 a, c, d, e, 71, 73, 74, 75, 76, 83, 85, 91, 92, 93, 94, 95, 96, 99

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, 12, 35, 43, 48, 49, 50

Exercises (1.7), page 72: 1, 2, 3, 4, 5, 8, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 34, 36, 37, 40, 43, 45, 47, 49, 50, 63, 64, 65, 66, 67, 68, 69, 70

L11 Combinations of Functions

Reading: Section 1.8

Exercises (1.8), page 81: 1, 2, 3, 5, 10, 11, 13, 17, 23, 31, 33, 35, 38, 42, 43, 45, 47, 49, 61, 62, 63, 65, 67, 69, 72, 73 a

L12 Inverse Functions

Reading: Section 1.9

Exercises (1.9), page 90: 1, 2, 3, 4, 5, 6, 15, 19, 23, 25, 29, 31, 33, 35, 37, 39, 45, 47, 48, 51, 55, 61, 62, 63, 66, 68, 73, 77, 80, 83, 89, 91, 92, 93, 97, 100

L13 Quadratic Functions

Reading: Section 2.1

Exercises (2.1), page 120: 1, 3, 5, 6, 7, 8, 12, 14, 16, 26, 35, 39, 47, 52 no calc, 53 no calc, 57, 63, 66, 67, 69, 71, 73, 75, 76, 77

L14 Polynomial Functions of Higher Degree and Division of Polynomials

Reading: Sections 2.2 and 2.3

Exercises (2.2), page 132: 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 17, 19, 21, 23, 24, 25, 53, 61, 65, 69, 73, 74, 75, 78, 93 a, b, 99, 100, 101, 103, 105, 106, 107

Exercises (2.3), page 142: 4, 5, 6, 7, 19, 33, 42, 45, 51 a, b, 62, 67, 80, 83, 86, 87, 89, 93

L15 Complex Numbers

Reading: Section 2.4

Exercises (2.4), page 150: 1, 2, 3, 4, 5, 6, 9, 11, 15, 16, 19, 21, 25, 27, 33, 35, 37, 41, 43, 45, 52, 54, 55, 57, 58, 59, 61, 63, 65, 66, 68, 77, 79, 81, 83, 85, 88 a, 89, 91, 92, 95

L16 Zeros of Polynomial Functions

Reading: Sections 2.5 and 2.6

Exercises (2.5), page 162: 2, 3, 4, 9, 11, 14, 15, 20, 25, 30, 33, 41, 43, 48, 54, 55, 60, 61, 64, 68, 95, 98, 99, 100, 101, 102, 103 a, b, 105, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 119, 120, 121, 123

Exercises (2.6), page 175: 1, 2, 3, 10, 13, 15

L17 Rational Functions

Reading: Section 2.6

Exercises (2.6), page 175: 19, 21, 23, 27, 29, 31, 37, 39, 40, 41, 42, 72 a, 78, 81

L18 Nonlinear Inequalities

Reading: Section 2.7

Exercises (2.7), page 185: 1, 2, 7, 11, 23, 26, 28, 29, 35, 37, 39, 40, 44, 46, 52, 53 no calc, 55 no calc, 68, 70, 71, 75, 80, 86, 87 a

L19 Linear and Nonlinear Systems of Equations

Reading: Sections 7.1 and 7.2

Exercises (7.1), page 475: 1, 2, 4, 5, 7, 10, 16, 19, 23, 26, 30, 31, 32, 33, 38, 41, 54, 57, 58, 63, 65, 67, 68, 69, 70

Exercises (7.2), page 486: 1, 8, 9, 12, 16, 25, 28, 30, 31, 33, 41, 42, 43, 49 a, b, 51, 61, 64

L20 Exponential Functions

Reading: Section 3.1

Exercises (3.1): page 206: 13, 14, 15, 16, 19, 20, 21, 23, 25, 27, 29, 31, 37, 39, 41 no calc, 43 no calc, 44 no calc, 45, 47, 49, 53, 57, 59, 62 a, 63 a, 67, 68, 69, 71, 73, 78, 79

L21 Logarithmic Functions

Reading: Section 3.2

Exercises (3.2), page 216: 1, 2, 4, 5, 7, 13, 15, 16, 17, 18, 19, 20, 25, 26, 27, 28, 29, 31, 33, 37, 38, 39, 40, 41, 43, 45, 47, 48, 49, 53, 61, 62, 63, 64, 65, 66, 67, 70, 77, 84, 85, 86, 88

L22 Properties of Logarithms

Reading: Section 3.3

Exercises (3.3), page 223: 2, 4, 5, 13, 15, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 53, 58, 69, 73, 75, 77, 79, 81, 91, 92, 93, 97, 101, 102, 104

L23 Exponential and Logarithmic Equations

Reading: Section 3.4

Exercises (3.4), page 233: 1, 2, 3, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 33, 35, 36, 42, 44, 52, 55, 56, 57, 60, 72, 74, 77, 78, 79, 83, 85, 89, 90, 91, 92

L24 Exponential and Logarithmic Models

Reading: Section 3.5

Exercises (3.5), page 243: 1, 5, 6, 7, 12, 15, 21, 23, 25, 27, 31, 33, 35 a, b, d