

MAC 2312: Calculus II, Summer C 2022 Online

CONTACT INFORMATION:

COURSE Instructor, TAs:

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Your main resources is your TA. We have two TAs this summer. They will be available during office hours (or by appointment) and via emails to answer your questions about the course material. You should check Canvas regularly and consult with your TA if you have any questions about recorded grades in Canvas. All grade concerns must be taken care of within one week of the grade posting. If you have concerns which cannot be handled by your TA please contact your instructor.

Office Hours: See [Canvas Homepage](#)

Textbook: There are no required textbooks for this course. You may use any calculus book as reference. For instance, *Calculus Early Transcendental by Stewart* is a great reference book, any edition is good. A free online textbook at [Openstax volume 2](#) is also another good option. I also encourage you to use the online Guided Learning Calculus 2 ([GLC2](#)).

Lecture Outline: There are options to obtain it: You may print them off from Canvas by clicking on Course Resource to find a table of lectures, or download a PDF file onto your tablet. (see 2.g)

Course Management System: [CANVAS](#)

Homework, Quizzes, Exams: Access them using the Assignment tab in Canvas or click on each lecture from Canvas home page.

UF Free Tutoring Service: [Broward Teaching Center](#)

MAC 2312 -- ANALYTIC GEOMETRY & CALCULUS II

1. Course Calendar	page 3
2. Introduction	
a. Course Description, Content	page 4
b. Prerequisites	page 4
c. Required Materials	page 4
d. Assignment Calendar	page 4
e. CANVAS & Free Help	page 5
f. E-Mail	page 5
g. Lecture Videos/Notes	page 5
h. Success	page 6
i. Students with Disabilities	page 7
j. Academic Honesty	page 7
3. Grading	
a. Course Grade	page 7
b. Incomplete	page 8
c. Getting Started	page 8
d. Videos and Lecture Quizzes	page 8
e. Homework	page 8
f. Quizzes & Exams	page 9
g. Extra Credit	page 9
h. Additional Practice Problems	page 9
4. Testing & HonorLock (page 9-10)	
a. Semester Unit Exams	page 10
b. Final Exam	page 11
c. Makeup Policies	page 11
5. Formulas You Are Expected to Know	page 11

MAC 2312-Online Calendar, Summer C 2022

Lecture Video:	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1(L1-4) 5/9	Class Begin LQ1	LQ2	HW1(L1-2)	LQ3	LQ4
Wk 2(L5-8) 5/16	LQ5 PracticeQuiz	LQ6 Q1(L1-4)	HW2(L3-4)	LQ7	LQ8
Wk 3(L9-13) 5/23	LQ9 HW3(L5-6)	LQ10 Q2(L5-8)	HW4(L7-9)	LQ11 LQ12	LQ13
Wk4(L14) 5/30	HW5(L13)	HW6(L1-13) Q3(L9-13)	DIS1, UE1R	² Exam1 (L1-13)	LQ14
Wk 5(L15-18) 6/6	LQ15	LQ16 Q4(L14-15)	HW7(L14-15)	LQ17	LQ18 HW8(L16-17)
Wk 6(L19-22) 6/13	LQ19 HW9(L18)	LQ20 Q5(L16-19)	HW10(L19)	LQ21	LQ22 HW11(L20)
Wk 7(break) 6/20	Summer	Break	Week	No	Class
Wk 8(L23-24) 6/27	LQ23 HW12(L21-22)	HW13(L14-23) Q6(L20-23),	DIS2, UE2R	^{6/30} Exam2 (L14-23)	LQ24
Wk 9(L25-28) 7/4	LQ25 HW14(L24)	LQ26	HW15(25-26) Q7(L24-25)	LQ27	LQ28
Wk10(L29-32)7/11	LQ29 HW16(L27-28)	LQ30	HW17(L28-29) Q8(L26-29)	LQ31	LQ32 HW18(L24-29)
Wk11(L33-35)7/18	LQ33 HW19(L30-31)	LQ34	HW20(32-34) Q9(L29-33)	LQ35	HW21(L30-35) E3RevQuiz
Wk12(L36-37)7/25	Q10(L34-35) DIS3, UE3R	²⁶ Exam3 (L24-35)		LQ36	LQ37
Wk13 8/1	HW22(L36-37) E4RevQuiz	HW23(L36-37) Q11(L36-37) DIS4, UE4R	Verify grades	⁴ Final(L1-37)	Class ends

All exams: open from 1AM – 11:59PM, proctored by Honorlock. Begin exams no later than 8pm EST (no later than 7pm EST for the final) to allow plenty time before Canvas closes your exams.

L11 (limits), L12 (L'Hospitals' Rule) are Calculus 1 Review lessons; L10, 23, 35 are mini unit review lessons.

- This is an online class. You have the flexibility on when to do the work. All homework is open at the beginning of the term and due at 11:59 pm on the due date. You may always complete them early if you have other plans, but not late. No extensions*!
- All due dates in the calendar are the date the work is to be received by Canvas*. You may always complete and submit assignments early, except for the quizzes & exams which must be taken on the specified date. **Due date is NOT Do date.** If you wait to submit and you run into issues, **you will be out of luck.** Aim to have work submitted **24 hours prior it's due**, save the Due date for last minute emergency.
- UEnR- Upload Exam n Review Due.
- Ln-Watch lecture n video before class; LQn- answer a few questions related to that lesson.
- DISn-Discussions (earn points) on Exam n material: see DISn for more details.
- If you joined the class late, please contact your TA for due dates extension of the first week work.
- You will have one week from when a score is posted to discuss grading with your TA. Verify and resolve all Canvas grade issues either within 1 week after the grade is posted or by the last Wednesday of the term, whichever comes first (except for the final exam). Absolutely NO grade disputes/discussion after the term is over.

* There is a 24-hours grace periods for LQ, HW assignments only, (not for DISn, UEnR, quizzes & exams).

2. INTRODUCTION

2a. COURSE DESCRIPTION and CONTENT. MAC2312, Calculus II, is the 2nd semester in the three-semester calculus sequence MAC 2311, MAC 2312, and MAC 2313 covering basic calculus. The course begins where MAC2311 left off at integration techniques, followed by a study of infinite sequences and series, parametric equations and polar coordinates and concludes with some applications of definite integrals finding volumes.

A minimum grade of C (not C –) in MAC 2312 satisfies the four credits of the general education mathematics requirement.

This is an online version of MAC2312 – all content is delivered online. Students view 37 online *lecture videos* and complete *lecture quizzes* in the course management system Canvas. Students also complete *online homework* and *upload their written work* in Canvas. Students are encouraged to post questions and answers on the course *Discussions Board* in Canvas. *Three unit exams* and a *cumulative final exam* are posted in Canvas and administered through Honorlock. **There is no drop of any exams. You must take an exam on the date specified in the course calendar.**

2b. PREREQUISITES. MAC2312 assumes that you have essential PreCalculus skills (both Algebra and Trigonometry) as well as the calculus 1 skills necessary to succeed in this course. Students should be able to do arithmetic without a calculator. Students may find a short list of review materials in the last section of this syllabus as well as review lessons L11 (limits) & L12 (L'Hospitals Rule) to practice.

Appropriate score on the ALEKS placement assessment, or a grade of C or better in UF MAC2311 meets the minimum requirement for the course. We encourage students to review the prerequisite material to gain a strong knowledge in order to succeed in calculus II. MAC2312 begins with integration chapter, you should already be competent in integrating simple functions and the use of u-substitution. We strongly recommend students who are having difficulty with these core calculus skills to review MAC2311 (or take the course if you have not done so). You may switch courses on one.ufl.edu during the drop-add period.

2c. REQUIRED MATERIALS.

Lecture Notes Outlines: See 2g.

Textbook: See p.1

Computer access and requirements: All assignments should be taken on a computer, not cell phone or tablet, since there may be compatibility issues with CANVAS. Be sure you are using only **Chrome** that works with Honorlock, a proctoring service we use to administer quizzes and exams.

Calculators & other devices: A graphing calculator or computer program (such as [Desmos](#)) can be useful as a learning tool when used appropriately, but they are not essential. Calculus is a collection of concepts, ideas and process that are not mastered through calculator skills. **No calculators** or any secondary devices are allowed during quizzes or exams (except the simple calculator provided in Honorlock).

2d. ASSIGNMENT CALENDAR. Check the course calendar for due dates and plan your schedule accordingly. You may complete your homework early, but you must take exams on the assigned dates. A 24 hours grace period allows students to turn in *homework assignments LQ* (lecture quizzes) and *HW* (*homework*) 1 day late. You may do more lessons and complete them early if you have plans.

- **DueDate is NOT DoDate.** Internet sometimes is not reliable, a reason you should **not wait till last hours** to complete your online assignment. If your computer or internet goes down while you try to submit an assignment, you will need additional time. If you **miss a due date**, no credit will be given for the work not submitted. **Computer issues** will NOT be a reason to offer any type of extension.
- Always allow plenty time to submit your work after you have prepared them thoroughly. It's **student's responsibility** to have a reliable computer, a stable and good internet/Wi-Fi speed and, to verify your work is submitted successfully *before the deadline*.
- You may expect a penalty (additional lost points) for completing fewer than 75% of your work.

2e. CANVAS. A UF courses management system, is located [here](#). Use your Gatorlink username and password to login. All course information including your grade, course homepage, syllabus, lecture outlines, lecture videos, office hours, discussions forum, free help information, exam, mail tool...etc. can be accessed from this site.

One-Week Policy: You are responsible for verifying that your grades are accurate. **You have one week after a score has been posted (or by the last Wednesday, whichever comes first) to contact your TA if you believe there has been a recording error** and have it resolved immediately. There is no grade dispute, no reopening of missed assignments outside this window nor at the end of the semester.

Please note: Important course information is clearly communicated in this syllabus, the MAC2312 homepage, the Announcements and links in Canvas. Due to the volume of email received by the instructor and the TA, we cannot reply to each request for this well publicized information. If you cannot find your answer in the resources above, there is also a **Discussions Forum** available in CANVAS. Please use this to post questions and to supply answers to your fellow classmates.

TURN ON NOTIFICATION ALERTS from Canvas to send timely notification to your UF email.

Notifications tab is located under Account on the upper left corner of your Canvas with your profile picture. Select 'Notify Immediately' for Announcements, Discussions and Grading. Click [here](#) for more information.

2f. E-MAIL. All official class communication will be sent via Announcements, or be sent only to the ufl.edu addresses. Students are responsible for acquiring, checking their email accounts regularly for any class information sent to their ufl.edu account. Please be sure to sign your name to your e-mails.

NOTE: Post *math questions* to the **Discussions board** (there are 3 pages – DIS where you post math Q/A and earn points, Admin where you post non-math questions, OH where you post questions for instructor's office hours). *Do not use email for math problems or non-private issues.*

2g. LECTURE VIDEOS/NOTES. The lecture videos provide the main presentation of course material. You may access the videos through each Lecture on Canvas Home Page. Re-watch them if necessary.

- To stay current with the course, you must watch the lecture video **before** the schedule posted in the course calendar. Start early and stay ahead so you don't miss any due dates.
- You should watch the lectures, take notes and answer the corresponding Lecture Quizzes (LQ) in Canvas before attempting homework (HW).
- It's possible to **get ahead** in this class if you complete each assignment early, but you must take exams on the specified dates. **If you have other commitment, adjust your schedule to complete the assignments earlier rather than later.**

Lecture Notes Outlines: It is important that you should have a copy of the lecture outlines. This will make it easier to take notes when watching the videos. There are options to access these outlines: Print out each lecture in Canvas, purchase a printed packet from [Target Copy](#) (if you are in Gainesville) or download a digital copy if you use a tablet. They are located in each lecture page, and under Course Resources.

2h. SUCCESS: Other than having a strong precalculus and calculus I background, success in MAC 2312 depends largely on your attitude and effort. **Keeping up with the videos is critical.** You may find it beneficial to **work daily** on the material as opposed to saving it all for one day. It is not effective to watch video and copy notes without following the thought processes involved in the lecture. For that reason, there is Lecture Quiz for each lecture which you will need to submit the answer in Canvas as part of your course grade. (see 2g and 3d)

EXPECTATION: This is a very challenging course. Treating it as anything less than that is inherently unwise, both for your learning and for your grade. Be aware that much of the learning of mathematics at the university takes place outside of the classroom (ie. time spent working on the material in addition to watching the lecture videos). “**At a minimum**” we expect students to spend 3 hours effectively studying (in addition to watch the lecture videos) for every credit hour of the course. MAC 2312 is a 4-credit course, which means **at least 12 hours per week** preparing and practicing problems for this course **in addition to watch lecture videos**. If you are not doing as well as you would like in MAC 2312, you may need to put forth more effort. Keep in mind that the goal is to be able to apply the techniques of calculus to problems, not just reproduce the problems you see in class.

Do you know that it takes roughly 45 lecture hours in colleges vs. roughly 150 lecture hours in high school to complete a calculus course? The fact of the matter is that university calculus course goes 3+ times faster and that you probably won't do well if you don't watch lecture regularly or you wait till the last weeks to start preparing for the exam. Much of the learning is on you. **Therefore, it is critical that you keep pace with the course material and assignments each week**, Practice, practice and practice. Do not fall behind.

Use the resources available as you study! We encourage you to ask questions, seek help from online office hours, Discussions Board and the [Broward Teaching Center](#) for the free tutoring services. Do not let misunderstandings go unanswered.

We encourage students to work together, and an important resource to facilitate communication in an online course is the **Discussions Board** in CANVAS. You should check the Discussions Board regularly, posting questions and answers. The effort of asking questions, communicating ideas with fellow students, as well as the practice of writing solutions, are **effective tools** in helping you better understand calculus concepts. This is YOUR forum, take advantage of it by participating in it.

In studying calculus, you must be careful not to let a tutor, a friend or calculator ‘think’ for you. Be sure to compare the material from tutors, if you use one, with the class material and ask questions to make sure that you can work out problems completely on your own before an exam. Be a responsible learner!

It's our hope that through *focused study and practice* you will gain a true appreciation for the important concepts of calculus and their application. We want you to succeed in this class! Be positive and keep up with the course, take initiative to *get help in time*, before you get too far behind. Students with a positive attitude who are intellectually engaged in learning the material will get the most from the course.

2i. STUDENTS WITH DISABILITIES. UF welcome students with disabilities into the UF programs. Students requesting classroom accommodations must first register with the Dean of Students Office [Disability Resource Centr \(DRC\)](#) , (352-392-8565). The DRC will provide documentation to the student who must then provide this to the instructor as soon as possible so there is adequate time to make proper accommodations.

2j. ACADEMIC HONESTY.

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.”

Academic Honesty Guidelines: “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)

The mathematics department expects you to follow the Student Honor Code. We are bound by university policy to report an instance of suspected cheating to the proper authorities. You may find the Student Honor Code and read more about student rights and responsibilities concerning academic honesty [here](#).

In addition, we remind you that lecture videos, notes and GLC2 are the property of the University/faculty member and may not be distributed/shared without prior permission from the coordinator and may not be used for any commercial purpose. Students found to be in violation may be subject to discipline under the Student Conduce Code.

3. GRADING

3a. COURSE GRADE. Your course grade is determined by unweighted points as follows:

Practice Quiz + 37 Lecture Quizzes (drop 3 lowest LQ)	81 points
Online Homework Group 1 (18 HWn) (drop 1 lowest)	34 points
Online Homework Group 2 (5 HWn)	30 points
Upload Exam Review (4 UEnR)	40 points
Quiz (11 Qn) (drop 1 lowest)	100 points
<u>3 Unit Exams(100 each) & cumulative Final(115)</u>	<u>415 points</u>
Total:	700 points

In addition, there are extra credits opportunities (see 3g).

Your course grade will be determined by **total points earned** according to the following scale.

There will be no additional curve in this course, extra assignments for individual students to improve a grade are NOT possible.

A	630 and up	C	490 and up
A –	609 and up	C – *	469 and up
B +	588 and up	D+	448 and up
B	560 and up	D	420 and up
B –	539 and up	D –	350 and up
C +	518 and up	E	below 350

*Note: A grade of ‘C –’ or lower DOES NOT give University General Education credit!

For those taking the ‘S – U’ option: S[> 70%] U[< 70%]

Approval of the ‘S – U’ option must be obtained from your instructor and approved by the registrar’s office. The deadline for filing an application with the Registrar and further information about the ‘S – U’ option are found in the undergraduate UF Catalog.

3b. INCOMPLETE GRADES POLICY. Students who are currently passing a course but are unable to complete the course because of illness or emergency may be granted an incomplete grade of I which will allow the student to complete the course within the first two weeks of the following semester. See the policy on the [math department criteria](#). If you meet the criteria, you must see the instructor before finals week to be considered for an I. **An “I” only allows you to make up your incomplete work, not redo your work.**

3c. GETTING STARTED:

Log in to Canvas and familiarize yourself with the course **calendar**, **syllabus** and the information in the links in Canvas to understand what is expected of you in this course. You are then ready to move onto the main content: lecture videos.

3d. VIDEOS (Ln) AND LECTURE QUIZZES (LQn). MAC2312 is organized into 37 lectures, each lecture has an introductory page including the concepts to be covered, things you need to do for this lecture.

Go to Canvas Homepage to access each lecture. From there, you may access a copy of the note outlines, links to the lecture videos and links to homework. Viewing the video is an important aspect of the learning process. There is a Lecture Quiz to be completed in each lecture. We encourage you to use the notes as well as the videos and the Discussions Board to get help if needed.

NOTE: At the time of the taping, we used a specific text book. Please go by the ‘topic name’ and not any chapter numbers mentioned in the videos.

NOTE: There might be minor typos in some of the lecture videos. Post them in Discussion Board if clarification is needed.

3e. HOMEWORK. All assignments are open from the beginning of the semester. They will have posted due dates and these due dates will not be extended under any circumstance.

There are online homework (LQ, HW) as well as written homework(UER):

1. **Online Homework** (LQ & HW in group 1 and group 2)–You may access the *Lecture Quiz* and *Homework* within each lecture on Canvas homepage or, by clicking the Assignment tab on the left side of Canvas. Each online homework consists multiple choice questions and possibly a few fill-in-

the-blank questions. Three lowest LQ scores and one lowest HWn in group 1 will be **dropped** at the end of the semester to offset credit lost due to technical issues or simply just a bad day. (note: the Practice Quiz will not be dropped)

Note: Be sure to do each online homework set. Canvas does not allow you to open them past due if you have not worked on them before due date.

Note: You may experience trouble seeing correct math images or the minus sign when viewing math in homework, quizzes or exams. Be sure to **disable acceleration** in chrome to minimize the chances of that happening. For un-proctored assignments, ‘right click’ on the unreadable math image to ‘*open image in a new tab*’ to see the correct image on the upper left corner in the new tab. Enlarge screen-size helps seeing the minus sign correctly.

2. **Written Homework** (UER) – to be uploaded in Canvas:

Here, you get the opportunity to practice writing out complete math solution logically.

- Click on ‘Upload Exam Review (**UEnR**)’ to work out problems from past exams. Scan your complete solution and upload them in a **single pdf file** before due date.

Do not try to complete all assignments in one sitting; Remember: **Due Date is NOT Do Date!** Start and submit them early so you have time to digest and absorb the material and not miss the deadline.

Computer/internet issues will NOT be a reason to offer any type of extension.

The purpose of homework is to practice problems in order to understand and master the material learned. Complete them before each exam. **Complete them after exams is not helpful to your learning nor your grades.**

Your TA is your first contact in the course. Contact your TA immediately if you are experiencing problems.

3f. QUIZZES & EXAMS. All quizzes and exams are proctored by Honorlock. See 4. TESTING.

3g. EXTRA CREDIT. Earn points via DIS in Discussions Board, Exam3 Review Quiz and Final Exam Review quiz. Up to 28 points can be added to your course grade, be sure to take advantage of them.

3h. ADDITIONAL PRACTICE PROBLEMS. There are problems listed at the end of each lecture, called ‘Now You Try It’ (NYTI). These were written by the course coordinator and are designed to emphasize important concepts and provide extra practice of the lecture material. Some of them are included in the Lecture Quiz as well. NYTI problems are not graded, but it is strongly encouraged that you work them out. **Solutions** to NYTI are posted in the ‘Lecture Notes’ table under Course Resources in Canvas. You may also find 277 extra practice problems/answers in Course Resources if you want more problems to practice.

4. TESTING.

There are eleven 30-minute quizzes, three 90-minute unit exams and one two-hour cumulative final exam. They are given in Canvas and administered through Honorlock(HL). All quizzes & exams are open from 1AM – 11:59PM EST. See the course calendar for the quiz and exam dates.

Cell Phones & Secondary Devices: Cell phones & secondary devices must be turned off (not on vibrate) and put away (not within reaching distance) during a test or quiz. Use (defined as having one physically in your hand or nearby) of a cell phone will be considered contact with another person and will be viewed as a

form of academic dishonesty because I cannot be assured in such a circumstance that you have not taken a picture of the test/quiz or sent/received a text message to/from someone. Wait until after you have submitted your work to use it.

Possible connection issues, temporary internet issues during exams:

We offer **double time** on all quizzes & exams to compensate for possible internet problems, or any other issues that may arise, including the wait time to communicate with the Honorlock support. They close at 11:59pm or when your time is up, whichever comes first. For that reason, you should start your exam no later than 8pm EST (or 7pm EST for the final exam) to ensure you have maximum time to work on your exam.

Honorlock: We urge you to

- Obtain **Chrome** (Honorlock requires Chrome to work.)
- Download the **Honorlock Google Chrome Extension**
- **Disable Acceleration in Chrome**
- **Ensure NOT have too many plugins enabled** for Google Chrome
- **Find a place to take your exam where the computer and internet connection is reliable if you are uncertain as to the reliability of your computer or internet service provider or internet connection. A makeup is not possible for failed connection.**
- *Live chat* with Honorlock Support at least a few days prior to your first exam to confirm your connection speed and required equipment (ex. webcam, speaker, mic) are all good.
- Do a **'speed check'** with Honorlock before your exam.
- **Clear cache and cookies** and **restart your computer** before each exam/quiz.
- *Enlarge screen size if needed to see math (especially the 'minus' sign) clearly.*

It is your responsibility to be sure that you have a reliable Ethernet internet connection, fast enough computer/internet speed, and verify with the proctor for an acceptable internet speed, location & environment to ensure that it meets proctoring requirements. **If your answers are not received by Canvas due to your faulty connection/equipment/math image issues, they are lost for good, we are not able to offer anything else to replace your lost answers.** You will not be able to request a makeup if problems arise due to your **negligence** (ie. you have not done all of these steps.)

Check out 'Exams and Honorlock' in *Course Information* in Canvas for details.

Do not disconnect webcam before you have submitted your quiz/exam. **Failure to do so can result in a 0.**

Make sure you are available to take the quiz/exam at the designated date. **Do not request a retake or makeup missed questions** for any quiz or exam:

- if problems arise due to your **negligence** (ie. you have not done all of these steps above).
- *unless you have documented evidence that your disconnect or technical issues exceeds the double time allowed and it is not due to your negligence.*
- *No reschedule/makeup/extension due to your poor planning (such as travel/flight delay).*

4a. SEMESTER UNIT EXAMS. Each Unit Exam will be given in Canvas consisting multiple choice questions and possibly a few fill-in-the-blank questions. Your exam score is displayed immediately after your submission. **The exam is locked after the test.** You may request a 20 minutes private conference within one week after each exam to review your exam with your TA.

4b. FINAL EXAM. A mandatory, cumulative final exam in Canvas will be given on the date shown in the course calendar. The exam consists of multiple choice questions and possibly a few fill-in-the-blank

questions. You may request a 20 minutes private conference with your TA to go over your final exam within 24 hours after the exam.

4c. MAKEUP POLICIES. Exams must be taken on the exam date; all make-up work must be arranged prior to the exam. This is an assembly exam. We allow students makeup opportunity if they meet the requirements below, but we do not allow exam re-take once you have taken it.

1. **Quiz/Exam Conflicts**

- a. If you have more than three exams on the same date, you can contact the instructor of the lowest assembly exam or non-assembly exam and make arrangements to take a makeup exam. If this course is the one to give a makeup, contact your **instructor by the end of the second week** to arrange for a makeup. See [UF Exam Policies](#).
- b. If you are participating in a UF sponsored event or religious observance, you may make up an exam. Email your **instructor by the end of the second week** with a valid documentation.

2. **Makeup – Quiz/Exams:**

- a. Students who miss an exam due to illness, severe family emergency, and/or severe weather as outlined in the [UF Attendance Policies](#) and wish to make up the exam must inform their **TA as soon as possible** and through the Dean of Students office CARE team at <https://care.dso.ufl.edu/instructor-notifications/>. Once the we receive notice from the CARE team covering the dates during which the exam took place the student will be signed up by their **TA** to take a makeup exam.
- b. Students who miss an exam due to other reasons as outlined in the UF Attendance Policies (eg. Court Order, etc) must contact their **TA** at least **ONE WEEK** in advance of the exam.
- c. You will be denied a makeup if you have not completed at least 75% of all the course work thus far.

Missing a quiz or exam due to **negligence**, however, will result in a minimum of 10–points penalty.

3. **Other make ups: There are no make-ups** on any assignments nor extra credit opportunities.

All quiz, unit exams makeups must be completed by the **last Monday** of the semester **before the final exam**.

Note: Information in this syllabus is subject to change. Any changes will be clearly announced in Announcements in Canvas.

5. FORMULAS YOU ARE EXPECTED TO KNOW.

This course assumes that you have a sound precalculus and calculus 1 background. The following is a summary of some important concepts used in solving calculus problems. The textbook provides a more complete review of these essential topics.

COMPLETING THE SQUARE $x^2 + ax + b = (x + \frac{a}{2})^2 + (b - (\frac{a}{2})^2)$

LAW OF EXPONENTS $a^{n+m} = a^n a^m$ $a^{n-m} = \frac{a^n}{a^m}$ $(a^m)^n = a^{mn}$

PROPERTIES OF logarithms

$$\log_b |xy| = \log_b |x| + \log_b |y|$$

$$\log_b \left| \frac{x}{y} \right| = \log_b |x| - \log_b |y|$$

$$\log_b |a^m| = m \log_b |a|, \quad \log_b |x| = \frac{\ln |x|}{\ln b}$$

PARABOLA

$$y = f(x) = ax^2 + bx + c$$

$$\text{Vertex } x = -\frac{b}{2a}, y = f\left(-\frac{b}{2a}\right)$$

CIRCLES

$$(x - a)^2 + (y - b)^2 = r^2$$

$$\text{Center } (a, b), \text{ radius} = r$$

Derivatives

$$\frac{d}{dx}(\sin x) =$$

$$\frac{d}{dx}(\csc x) =$$

$$\frac{d}{dx}(\cos x) =$$

$$\frac{d}{dx}(\sec x) =$$

$$\frac{d}{dx}(\tan x) =$$

$$\frac{d}{dx}(\cot x) =$$

$$\frac{d}{dx}(\arctan x) =$$

$$\frac{d}{dx}(a^x) =$$

$$\frac{d}{dx}(e^x) =$$

$$\frac{d}{dx}(\log_a x) =$$

$$\frac{d}{dx}(\ln x) =$$

Integrals

$$\int \frac{1}{x} dx =$$

$$\int e^x dx =$$

$$\int a^x dx =$$

$$\int \sin x dx =$$

$$\int \cos x dx =$$

$$\int \tan x dx =$$

$$\int \cot x dx =$$

$$\int \sec^2 x dx =$$

$$\int \csc^2 x dx =$$

$$\int \sec x \tan x dx =$$

$$\int \cot x \csc x dx =$$

$$\int \tan^2 x dx =$$

$$\int \cot^2 x dx =$$

$$\int \frac{1}{a^2 + x^2} dx =$$

Trig Identities

$$\sin^2 x + \cos^2 x = 1$$

$$\tan^2 x + 1 = \sec^2 x$$

$$1 + \cot^2 x = \csc^2 x$$

$$\sin^2 x =$$

$$\sin 2x =$$

$$\cos^2 x =$$

$$\cos 2x =$$

Know values of $\sin x$, $\cos x$, $\tan x$ at $x = 0, \frac{\pi}{6}, \frac{\pi}{4}, \frac{\pi}{3}, \frac{\pi}{2}$; $\arctan(a)$ at $a=0, 1, \sqrt{3}, 1/\sqrt{3}$.

(know the values of the other trig. functions at these angles and know the values of all trig functions at complementary and supplementary angles of the angles above)

Chain Rules

$$(f(g(x)))' = f'(g(x))g'(x)$$