

MAC1147 - Precalculus With Trigonometry

Spring 2025 Syllabus

The information in this syllabus is preliminary and subject to change before the term begins.

Contact Information

The course home page is located in [Canvas](#).

The Inbox in Canvas is the preferred method for communication for the class.

Coordinator

Name: Patrick Carmichael Office: LIT313

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Office Hours: Thursday 9:35-11:30 Zoom, Friday 12:50-1:40 LIT 313

Teaching Assistants

TBA

Introduction

Course Description and Objectives

In this course you will gain understanding of algebraic functions, coordinate geometry, exponential and logarithmic functions, and trigonometry.

This **fast-paced course** is designed as a review to prepare you for calculus. If you prefer, you can take it over two semesters by taking MAC1140 Precalculus Algebra and then taking MAC1114 Trigonometry. You have until the end of the drop/add period to change your schedule.

Learning Outcomes

The following outcomes will be assessed using the course assignments: homework, quizzes, and exams.

- **Content:** You will demonstrate competence in the terminology, concepts, theories, and methodologies used within the discipline. After completing this course students will be able to employ strategies in solving problems involving algebraic functions, exponential and logarithmic functions, and trigonometric functions. The homework, quizzes, and exams will assess your content outcome.
- **Communication:** You will communicate knowledge, ideas, and reasoning clearly and effectively in written and oral forms appropriate to the discipline. Throughout this course you will formulate and solve mathematical models using algebraic functions, exponential and logarithmic functions, and trigonometric functions. The exams will assess your communication outcome.
- **Critical Thinking:** You will analyze information carefully and logically from multiple perspectives, using discipline-specific methods, and develop reasoned solutions to problems. In this course, you will reason in abstract mathematical systems and apply mathematical models using algebraic functions, exponential and logarithmic functions, and trigonometric functions. The homework, quizzes, and exams will assess your critical thinking outcome.

Prerequisite, Course Sequence, and Credit

This course covers 4 credit hours of [General Education Mathematics](#) (M) requirements. A minimum score of 61% on the ALEKS exam or prior MAC1147 credit (or higher) is required. This course assumes prior knowledge of intermediate algebra (Algebra 2) and trigonometry and the ability to do arithmetic without a calculator. This course is designed for students who intend to take MAC2311. If your goal is to take MAC2233, then you should consider talking to your advisor about taking MAC1140 instead of this course since there is no trigonometry requirement for MAC2233.

If you are taking this course for general education credit or the pure math portion of the Math requirement, but you do not need precalculus for your major or as preparation for calculus, you should consider taking MGF 1106, MGF 1107, or MAC1105. For more information on math courses and math advisors go to the [Math Department website](#). A minimum grade of C (not C-) in MAC1147 satisfies four hours of the general education requirement and also satisfies the pure math portion of the state Writing/Math requirement. Note: You can receive at most four credits for taking both MAC1147, and MAC1140 or MAC1114, and at most five credit hours for taking MAC1147, MAC1140, and MAC1114. After you successfully complete this course (C or better) you can advance to MAC2311 Calculus 1, or into MAC2233 Survey of Calculus.

Required Materials

The course text will be available for free in Canvas. There is no textbook purchase required.

- [Precalculus 2e](#), by Abramson et al. Published by OpenStax
- Supplemental notes by Carmichael

E-Learning and Canvas

[Canvas](#) is the central website for our class. Log in with your Gatorlink credentials. All class announcements, assignments, lecture outlines, and other information will be posted there. You are responsible for verifying that your grades are accurate.

Your grades for assignments will also be posted on Canvas. I am always happy to discuss the content of an assignment, but grade issues must be dealt with in a timely manner. **You have one week after a score has been posted to contact your instructor/TA if you believe there has been a grading or a recording error.**

Lectures

Lecture days are indicated on the calendar. Live lectures will be streamed, and prerecorded lectures are available in Canvas.

If you are feeling sick, stay home. Attending class is not worth endangering your or your classmates' health.

Calculator Policy

No calculators or other electronic devices will be allowed on exams.

A calculator will sometimes be needed to complete homework questions. [Desmos](#) is a good online calculator.

Discussion Session

Your TA will hold a discussion session each week during the time indicated on your schedule. This is a time for you to ask questions, do problems, and see examples from your TA. Attendance in discussion is mandatory and will count towards your grade. In order to receive credit, you must be present for at least 90% of class time. For a 50-minute class, this means you can be at most 5 minutes late and still qualify for credit.

People Who Can Help

- **Your Teaching Assistant (TA)** in the mathematics department. Your TA will hold office hours each week. You are encouraged to come and ask questions!
- **Professor Carmichael** during office hours.
- **Other MAC1147 TAs** (See Canvas for office hours)
- Academic Resources offers free online tutoring on weekdays. Go to the [Academic Resources Website](#) to find the hours. You can also request free one-on-one tutoring.
- Math department TAs hold drop-in hours in Little Hall every weekday. You can check the [Tutoring Website](#) for details.
- For help resolving technical issues (computer problems, Gatorlink, etc.) contact the [UF Computing Help Desk](#) online, or by phone 352-392-HELP.
- Your well-being is important to the University of Florida. The [U Matter, We Care](#) initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Success

Success in MAC1147 comes from your effort and attitude. Keeping up with the material is critical. Research indicates that it is more effective to do a small amount of math every day rather than a large amount in a single day. Studies have also shown that the most important factor for success in math is class attendance and participation. Students who come to class succeed much more often than those who do not.

That said, most of the learning you will do in this course will come from the work you do. Mathematics is not a spectator sport. Watching someone solve a problem is very different from being able to solve it yourself. In order to succeed you must be willing to put in the time and effort to answer questions independently.

Course Elements

Homework

Each lecture has a corresponding homework assignment, which will usually be due two days after the lecture. Finishing these assignments is the most important activity you can do to succeed in the class. The homework will solidify the concepts introduced in the lecture and prepare you for quizzes and exams. These assignments will assess your critical thinking and communication of the lecture content.

Quizzes

There will be a quiz each week, usually on Monday. It will cover lectures from the previous week. Quizzes are designed to be done multiple times and will present different questions for each attempt. The best of your attempts is the one that will count towards your grade. You should treat the quizzes as practice for the exams. These assignments will assess your critical thinking and communication of the lecture content.

Exams

There will be four midterm exams as well as a cumulative final exam. Exams will be done in-person and will assess your critical thinking and communication of the lecture content.

- Exams will be taken in the evening on the dates indicated on the course schedule.
- You are responsible for material covered in the lectures, including example problems from lectures, all assigned homework problems, and all review material.
- You should bring to each test **only** a picture ID and a pen or pencil.
- No calculator or other electronic device is allowed.
- Failure to abide by exam rules will result in a failing grade for the course.

Extra Credit

There are two ways to earn extra credit in this class. Each can earn you a bonus of up to 1% on your course grade.

- Participating in homework discussion boards on Canvas by asking or answering a question in a coherent manner.
- Participating in the live practice questions during lecture. These will only be available only during class time.

Grading

Course Grade Breakdown

Item	Grade %	Comments
Homework	14%	Lowest two scores dropped
Quizzes	14%	Lowest two scores dropped
Discussion Attendance	7%	Up to two absences dropped
Exams	50%	Four midterm exams. Lowest score dropped.
Final Exam	15%	Cumulative final exam.
Extra Credit	Up to 2%	

Note: Some scores may not be added to Canvas until the end of the semester.

Your course letter grade is based on the overall percentage you earn according to the items above. Final percent scores will **not** be rounded.

A	90%	B-	77%	D+	64%
A-	87%	C+	74%	D	60%
B+	84%	C	70%	D-	57%
B	80%	C-	67%	E	Below 57%

Note that a grade of C- does **not** give General Education credit. A grade of C or better is required to advance to the next course.

For information on dropping courses and withdrawals go to [this website](#)

For information about UF grades and grading policies go to [this website](#)

Make-up Policies

All makeup work must be completed before the final exam.

- **Exams** - If you have a conflict due to a UF sponsored event or an assembly exam in another course with a higher course number, you must bring documentation of it to the course coordinator at least one week (otherwise 5% penalty) before the exam to sign up for the make-up, which will be given soon after the test date or at the end of the semester.

If you miss for any other valid reason you must notify the course coordinator within a week of the exam (otherwise 5% penalty). I cannot make a full list of valid reasons to miss an exam, but a valid reason is something that is unavoidable, not an activity you can choose to partake in or not. Makeups will only be allowed if appropriate documentation is provided.

- **Final Exam** - There is a 10% penalty for missing the final due to negligence.
- **Class conflict** - University policy states that an assembly exam takes precedence over an evening class and the evening class instructor must provide make-up work and cannot penalize students who miss because of an assembly exam.
- **Discussion attendance** – You may miss up to two discussion meetings without penalty. These are not free passes to skip class. They are intended to account for things like illness/injury and other schedule conflicts. Absences beyond two can only be excused if at least two previous absences were also excused. You must notify and send documentation to the course coordinator within one week of an absence, or it cannot be excused. If an absence is excused, you will not receive credit, but it will not count against you in the gradebook.
- **Homework/Quiz** – At the beginning of the semester you are assigned 20 Late Passes. You may use a Late Pass to extend a homework or quiz deadline by 24 hours. You may extend a deadline up to two days at a cost of two Late Passes. No assignments may be completed after the final exam.
- **Extra Credit** - No makeups.
- **Absences and Make-up Work** - Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at [this website](#).

Incomplete/Concerns/Complaints

- **Incomplete** - A grade of I (incomplete) will be considered only if you meet the [Math Department criteria](#). If you meet the criteria you must contact your coordinator before finals week to be considered for an I. An I only allows you to make up your incomplete work, not redo your work.
- **Concerns/Complaints** - If you have concerns/complaints about the course you may voice your concerns to the course coordinator, the Mathematics Department Associate Chair, and then the [University Ombuds](#).

Instructor Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via [GatorEvals](#). Guidance on how to give feedback in a professional and respectful manner is available at [this website](#). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [this website](#). Summaries of course evaluation results are available to students on the [public results website](#).

Additional Information

Academic Honesty

UF students are bound by The Honor Pledge which states “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the 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.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the [UF Conduct Code website](#) for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Courtesy In Communication

In all communication with your instructor, teaching assistants, and classmates you are expected to be respectful and follow proper [netiquette](#).

Privacy and Data Security

This courses uses the MyOpenMath software for assignments. MyOpenMath does not sell or transmit personal data and deletes all student information after an appropriate amount of time.

Students With Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section.

Schedule

- Jan 13 - Lecture 1 Introduction
Introduction (10 pages)
Lecture 1 Homework, Syllabus Quiz
- Jan 15 - Lecture 2 Exponents and Radicals
Exponents and Radicals (15 pages)
Lecture 2 Homework
- Jan 17 - Lecture 3 Polynomial Expressions
Polynomial Expressions (20 pages)
Lecture 3 Homework
- Jan 21 - Quiz 1
- Jan 22 - Lecture 4 Rectangular Coordinates
Rectangular Coordinates (19 pages)
Lecture 4 Homework
- Jan 24 - Lecture 5 Functions
Functions (17 pages)
Lecture 5 Homework
- Jan 27 - Lecture 6 Graphs of Functions
Graphs of Functions (26 pages)
Lecture 6 Homework, Quiz 2
- Jan 29 - Lecture 7 Combinations of Functions
Combinations of Functions (9 pages)
Lecture 7 Homework
- Jan 31 - Lecture 8 Basic Functions/Transformations
Basic Functions & Transformations (19 pages)
Lecture 8 Homework
- Feb 3 - Lecture 9 Inverse Functions
Inverse Functions (20 pages)
Lecture 9 Homework, Quiz 3
- Feb 5 - Lecture 10 Linear Functions
[Precalculus 2.1](#)
[Precalculus 2.2](#)
[Precalculus 2.3](#)
Lecture 10 Homework
- Feb 6 8:30 PM **Exam 1**
- Feb 7 - Lecture 11 Quadratic Functions
[Precalculus 3.2](#)
Lecture 11 Homework
- Feb 10 - Lecture 12 Polynomial Functions
[Precalculus 3.3](#)
[Precalculus 3.4](#)
[Precalculus 3.5](#)
Lecture 12 Homework, Quiz 4
- Feb 12 - Lecture 13 Complex Numbers
[Precalculus 3.1](#)
Lecture 13 Homework
- Feb 14 - Lecture 14 Rational Roots
[Precalculus 3.6](#)
Lecture 14 Homework
- Feb 17 - Lecture 15 Rational Expressions
[College Algebra 1.6](#)
Lecture 15 Homework, Quiz 5
- Feb 19 - Lecture 16 Rational Functions
[Precalculus 3.7](#)
Lecture 16 Homework
- Feb 21 - Lecture 17 Linear Inequalities
[College Algebra 2.7](#)
Lecture 17 Homework
- Feb 24 - Lecture 18 Nonlinear Inequalities
Nonlinear Inequalities (14 pages)
Lecture 18 Homework, Quiz 6
- Feb 26 - Lecture 19 Systems of Equations
[Precalculus 9.1](#)
[Precalculus 9.3](#)
Lecture 19 Homework
- Feb 27 - Quiz 7

- Feb 28 - Lecture 20 Exponential Functions
[Precalculus 4.1](#)
[Precalculus 4.2](#)
 Lecture 20 Homework
- Mar 3 - Lecture 21 More Exponential Functions
[Precalculus 4.1](#)
[Precalculus 4.2](#)
 Lecture 21 Homework
- Mar 3 8:30 PM **Exam 2**
- Mar 5 - Lecture 22 Logarithmic Functions
[Precalculus 4.3](#)
[Precalculus 4.4](#)
 Lecture 22 Homework
- Mar 7 - Lecture 23 Properties of Logarithms
[Precalculus 4.5](#)
 Lecture 23 Homework
- Mar 10 - Lecture 24 Exponential/Log Equations
[Precalculus 4.6](#)
 Lecture 24 Homework, Quiz 8
- Mar 12 - Lecture 25 Exponential/Log Modeling
[Precalculus 4.7](#)
 Lecture 25 Homework
- Mar 14 - Lecture 26 Angles
[Precalculus 5.1](#)
 Lecture 26 Homework
- Mar 24 - Lecture 27 Unit Circle/Trig Functions
[Precalculus 5.2](#)
[Precalculus 5.3](#)
 Lecture 27 Homework, Quiz 9
- Mar 26 - Lecture 28 Right Angle Trigonometry
[Precalculus 5.4](#)
 Lecture 28 Homework
- Mar 26 8:30 PM **Exam 3**
- Mar 28 - Lecture 29 Graphs of Sine/Cosine
[Precalculus 6.1](#)
 Lecture 29 Homework
- Mar 31 - Lecture 30 Graphs of Other Trig Functions
[Precalculus 6.2](#)
 Lecture 30 Homework, Quiz 10
- Apr 2 - Lecture 31 Inverse Trig Functions
[Precalculus 6.3](#)
 Lecture 31 Homework
- Apr 4 - Lecture 32 Applications and Models
[Precalculus 6.1](#)
 Lecture 32 Homework
- Apr 7 - Lecture 33 Using Fundamental Identities
[Precalculus 7.1](#)
 Lecture 33 Homework, Quiz 11
- Apr 9 - Lecture 34 Solving Trig Equations
[Precalculus 7.5](#)
 Lecture 34 Homework
- Apr 11 - Lecture 35 Laws of Sines/Cosines
[Precalculus 8.1](#)
[Precalculus 8.2](#)
 Lecture 35 Homework, Quiz 12
- Apr 14 - Lecture 36 Sum/Difference Formulas
[Precalculus 7.2](#)
 Lecture 36 Homework
- Apr 16 - Lecture 37 Double/Half Angle Formulas
[Precalculus 7.3](#)
 Lecture 37 Homework
- Apr 17 8:30 PM **Exam 4**
- Apr 18 - Lecture 38 Euler's Formula
- Apr 21 - Final Exam Review, Quiz 13
- Apr 26 5:30 PM **Final Exam**