Precalculus

Fall 2023 | MATH-2412

Welcome to Precalculus!!

Are you ready to explore the integrated algebra, trigonometry, and analytic geometry skills used in Calculus? As your instructor, I am looking forward to providing you the opportunity to acquire and practice the math skills needed to be successful in Calculus.

Email: sharris@southplainscollege.edu

Phone: (806) 716-2665

Office: Mathematics and Engineering 120A

Levelland (M120A) Office Hours: TR 11:00 am - noon; TR 1:00 pm - 2:30 pm
Lubbock Downtown Center (B001) Office Hours: W 4:30 pm - 5:30 pm
Virtual Office Hours: M 6:00 pm - 7:00 pm; T 7:00 pm - 8:00 pm;
R 4:00 pm -5:00 pm; F 10:00 am - 11:00 am

1. Demonstrate and apply knowledge of properties of functions.

2. Recognize and apply algebraic and transcendental functions and solve related equations.

3. Apply graphing techniques to algebraic and transcendental functions.

4. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.

5. Prove trigonometric identities.

6. Solve right and oblique triangles.

7. Other topics for calculus readiness

$(7 + 4\sqrt{5})$
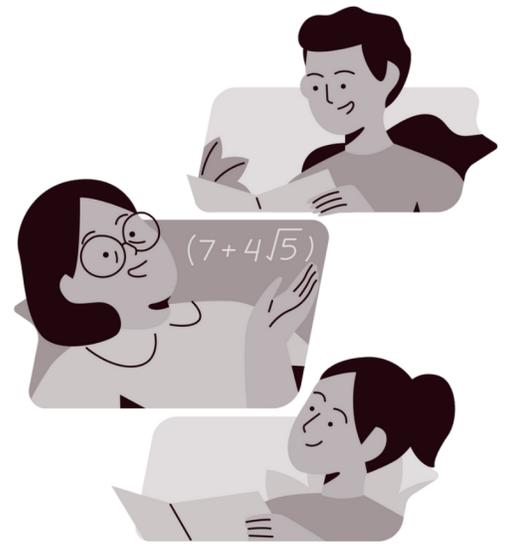
Download/Print Notes
Each section has notes embedded in Blackboard in the Course Content for each week.

Watch Every Video
Each section has lecture videos embedded in Blackboard in the Course Content for each week.

Submit Assignments
Turn in all assignments on time. Early submissions are welcome! Late assignments will not be accepted.

## Work Practice Problems
Each lecture embedded in Blackboard has Practice Problems for you to work.

Work Every In-Class Example
Each lecture embedded in Blackboard has In-Class Examples for you to work.

What to Expect from a Flipped Classroom
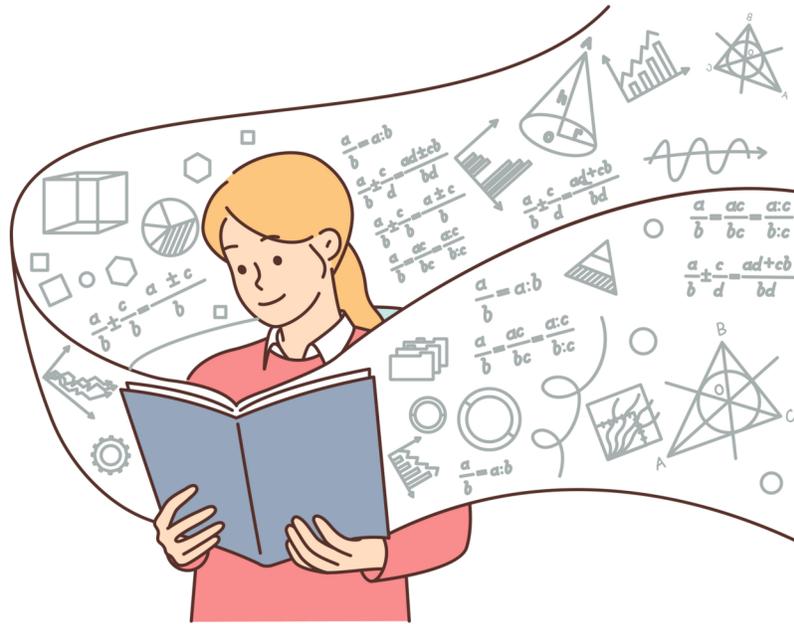
Before arriving for the class meeting, make certain you have

1. worked through the notes and videos for that week's lessons
2. completed some of the assigned exercises
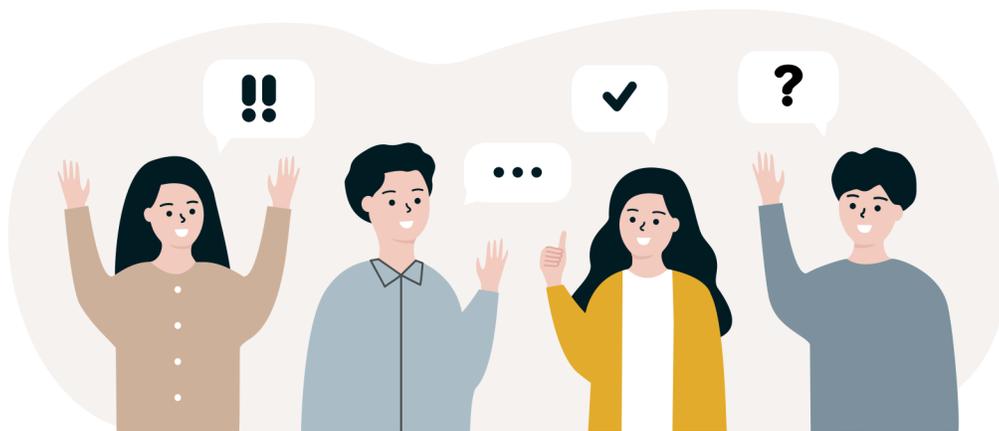
Upon arriving at the class meeting, we will

1. answer questions over exercises;
2. work through exercises;
3. submit assignments and quizzes.

Writing Utensil
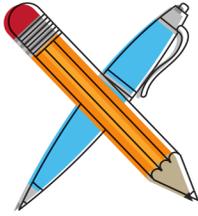
8.5 inch x 11 inch paper

Scientific Calculator (No Graphing)
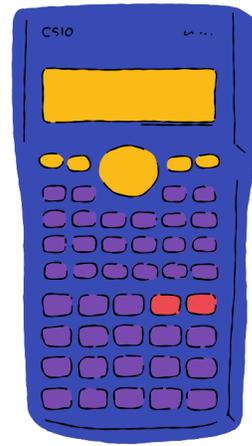
Good Internet Connection

Web Camera
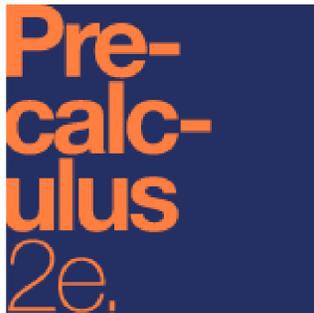
Precalculus, 2nd ed.
OpenStax
ISBN 9781951693398

Precalculus, 8th ed.
Ron Larson
ISBN 9781439045770
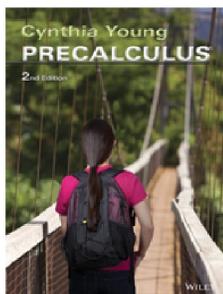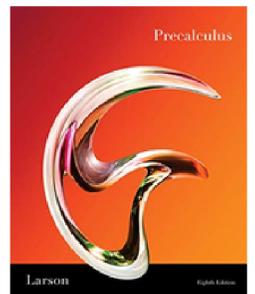
Precalculus, 2nd ed.
Cynthia Young
ISBN 9780470904138

Assignments & Grading

All assignments and exams will be graded on a point system. Points will be accumulated during the course.

1 Memory Quizzes
(10 assignments, 0.5 points each)
Write the answer only from memory, do not write the question shown. Submit in class. The assignment will be graded as correct or incorrect.

2 Mastery Assessments
(10 assignments, 1 point each)
Free response assessment that you can use your notes and practice problems. Upload work weekly on Gradescope.

3 Assignment Wrappers
(20 assignments, 0.25 points each)
Answer questions on Blackboard to review your mistakes and learn from them. The assignment will be graded by completion.

4 Unit Exams
(6 assignments, 10 points each)
Free response assessment that you can not use your notes or practice problems. No make-up exams will be given. Upload work on Gradescope.

5 Final Exam
(1 assignment, 20 points)
Free response assessment that you can not use your notes or practice problems. If you do not attempt you earn an F for the class.

Final Exam
20

Memory Quizzes
5

Mastery Assessments
10

Assignment Wrappers
5

Unit Exams
60
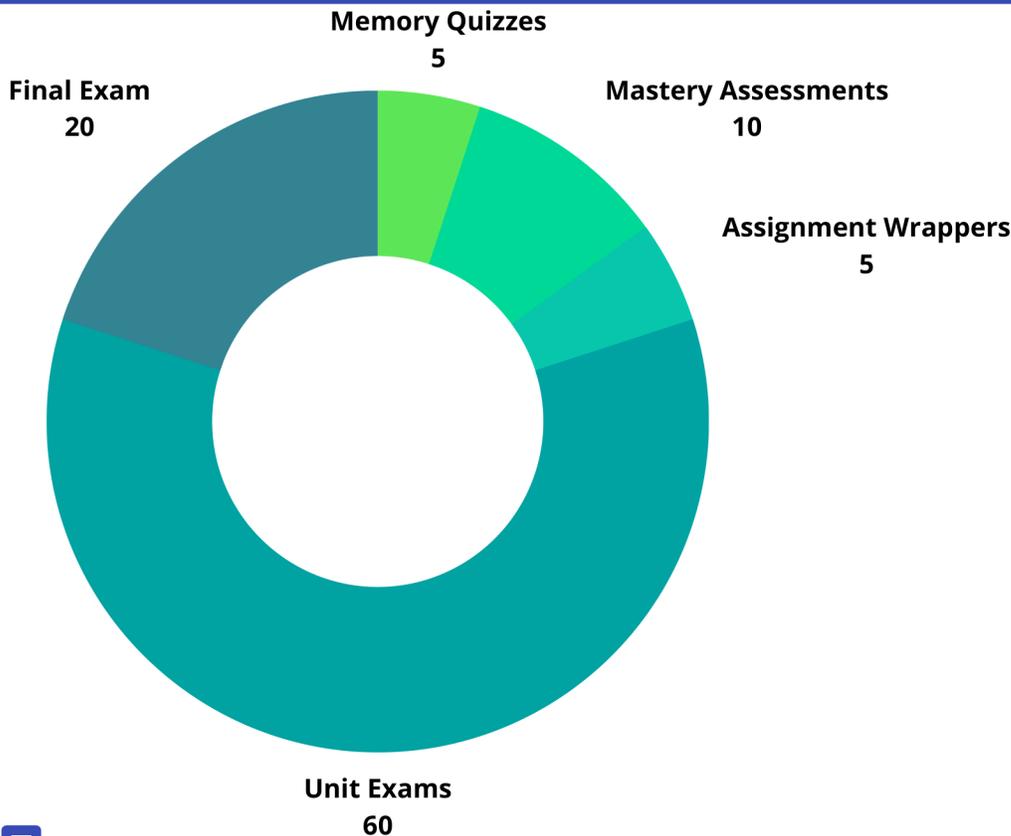
Your final grade will be based on the total points accumulated out of 100 points.

Extra Credit

Extra Credit points: you can earn up to 7 extra credit points through a variety of ways: completing the extra Memory Quizzes, Mastery Assessments, Assignment Wrappers, and Extra Credit Opportunities.

Participation

✓ You Are Responsible

If you miss class or fall behind for any reason, you are responsible to obtain the notes and catch up. I cannot repeat material or change the schedule for the entire class.

✓ Emergencies Happen

While emergencies happen, they need to serious enough to merit a late submission and they need to be verifiable to be excused. If you cannot show documentation of your emergency and/or if deemed not serious enough, your late submission will not be accepted.

✓ Communication is Key

If you have an emergency, you need to let me know by email or phone *immediately*. Letting me know the following day or later makes it difficult for me to discern and assess your situation. Therefore, making it harder to help and work with you.

✓ There is (Some) Flexibility

All students can earn the extra credit points. If you should miss an assignment deadline those extra credit points can "replace" the missed points.

Integrity

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension. (SPC General Catalog)

Academic Integrity (Plagiarism and Cheating Policy)

"Complete honesty is required of the student in the presentation of any and all phases of course work. This idea applies to quizzes of whatever length as well to final examinations, to daily reports, and to term papers." (SPC General Catalog)

Consequences for Cheating

Plagiarism and cheating are not tolerated in this course. Under the policies of South Plains College, punishment for cheating may include no credit (failing) on the assignment, quiz, exam, or the course.

What is considered cheating?

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion
2. Discovering the content of an examination before it is given
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment
4. Entering an office or building to obtain an unfair advantage
5. Taking an examination for another
6. Altering grade records
7. Copying another's work during an examination or on a homework assignment
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's
9. Taking pictures of a test, test answers, or someone else's paper.

Web & Email

I regularly update Blackboard with announcements, assignments, and resources related to class. It is your responsibility to check Blackboard everyday. Any last minute changes will be posted on Blackboard as an announcement.

Emails Should Include

- Your first and last name
- Your class name and section
- Your questions and/or comments in the body of the email (not subject line)

I Will

- Check my email regularly during weekdays before 7:00 pm
- Do my best to respond within 24 hours

I Will Not

- Always respond immediately on weekends or holidays

I am always **happy** to meet with you for **academic advising**, **help** on assignments, or just to **chat**. My office hours are listed on the first page of this syllabus, or you can schedule an appointment for **undivided attention**.

Appointments

But....please ALWAYS keep your appointments

SCAN ME

Respect

JUST A LITTLE BIT
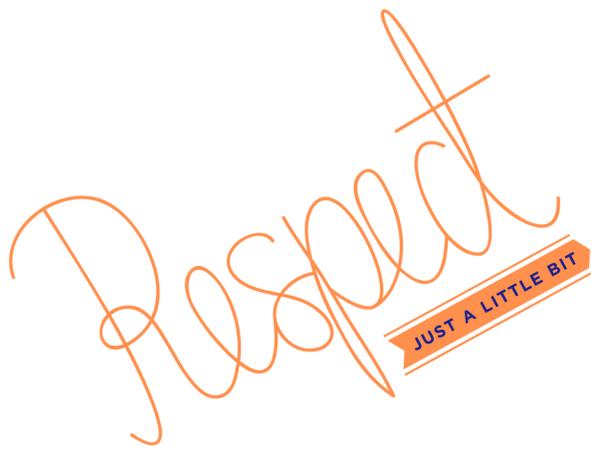
This is a classroom built on respect and a safe learning environment. Failure to be respectful may cause one of three penalties, depending on the seriousness of the offense: asked to leave the class for the day; an appointment with the Dean of Students; or expulsion from the course.

Do's

- Be Engaged
- Be Polite
- Be on Time
- Be Prepared
- Be Ready to Learn

Don'ts

- Name call, Marginalize, or Stereotype
- Participate Drunk or Under the Influence
- Be Distracted
- Use Inappropriate Language

How to be Successful in this Class

While unforeseen events do happen that can make college life and achievement difficult, generally speaking success is a **choice**. In order to help yourself succeed:

- Avoid distractions (cell phone, social media, games, television, or open tabs and windows on your device) when watching and working through lecture videos
- Use the resources (notes, extra videos on Blackboard, free tutoring through the college, each other, and myself) available to you
- Don't hesitate to ask for help and always communicate
- Be sure to complete the assigned work
- Read the feedback given to you on graded work to improve your skills
- Save all of your notes and work

Turn off devices not needed for learning
Use your resources
Help each other
Communicate with me
Complete the assigned work
Read your feedback and learn from your mistakes
Save your notes and files

Resources

FREE TUTORING

Tutors are available to SPC students for FREE!
We can help you on any campus in person or online

Call 806-716-2538 or email tutoring@southplainscollege.edu for more info.

WALK IN OR MAKE AN APPOINTMENT!

Library

Textbooks on Reserve

Technology Checkout
- Chromebooks/Laptops
- Hot Spots

Study Areas

Health & Wellness Center

Counseling

Health Clinic

Disability Services

Question: How much math do I have to take?
Answer: How much money do you want to make?

## Best Jobs Requiring an Associate's Degree

	Business Math	Intermediate Algebra				Liberal Arts Math	Tech Math	Statistics or College Algebra		College Algebra			
Medical Records and Health Information Technician	$32,000												
Paralegals and Legal Assistants		$45,000											
Physical Therapy Assistant		$45,500											
Occupational Therapist Assistant		$52,000											
Radiological Technologist		$56,500											
Respiratory Therapist		$56,000											
Veterinary Technologist Technician						$28,000							
Environmental Engineering Technicians							$42,500						
Civil Engineering Technician							$48,500						
Registered Nurse								$65,000					
Dental Hygienist								$68,000					
Radiation Therapists								$74,500					
Computer Occupation										$80,000			
Medical Lab Technician										$57,000			
Electrical Engineering Technician										$57,000			
Diagnostic Medical Sonographers										$65,000			

Source: *Best Jobs for the 21st Century*, Sixth Edition © JIST Works 2012
Graph: © Academic Success Press Inc. 2013

Best Jobs Requiring a Bachelor's Degree

	Liberal Arts Special Topics In Math	Statistics		College Algebra	Business Calculus			Calculus II	Differential Equations
Multimedia Artists									
Writers/Authors	$57,000								
Film Editor	$55,000								
Music Arranger	$51,000								
Graphic Designer	$44,000								
Social Worker		$40,000							
Elementary Education		$51,000							
Kindergarten Teacher		$47,000							
Probation Officers		$51,000							
Dietitians and Nutritionists			$55,000						
Medical and Clinical Lab Tech			$59,000						
Accountants				$66,000					
Personal Financial Advisor					$69,000				
Market Research Analysts					$68,000				
Financial Analyst					$78,000				
Construction Manager					$85,000				
Network Administrators								$69,000	
Computer Systems Analyst								$82,000	
Engineer									$89,000
Software Developer, System Software									$92,000

Source: *Best Jobs for the 21st Century*, Sixth Edition © JIST Works 2012
Graph: © Academic Success Press Inc. 2013

Students will improve the following mathematical practices.

1. Students will make sense of problems and persist while solving them.

2. Students will engage in productive struggle with mathematics problems.

3. Students will productively collaborate with others.

4. Students will communicate through mathematical writing.

Course Policy Regarding Positive Discourse

Students are not allowed to comment negatively about themselves or their mathematical ability, at any time, for any reason. Here are example statements that are banned, along with acceptable replacement phrases.

• I can't do this **instead, use:** I am still learning how to do this.
• That was stupid **instead, use:** That was a productive mistake.
• This is impossible **instead, use:** Something is interesting and subtle in this problem.
• I'm an idiot **instead, use:** This will take careful thought.
• I'll never understand this **instead, use:** This might take me a long time and a lot of work to figure out.
• This is terrible **instead, use:** I think I've done something incorrectly. Let me check it again.

The banned phrases represent having a fixed view of your own intelligence, which does not reflect the reality that you are all capable of dynamic, continued learning. The suggested replacement phrases support and represent a realistic perspective regarding your abilities and your capacity for improvement.

SOUTH PLAINS COLLEGE
MATHEMATICS, ENGINEERING & COMPUTER SCIENCE

Fall 2023 MATH-2412 Tentative Calendar

Week	Day	Date	Topic	Mastery Assessment Due	Exam Due
1	Monday	28 August	• Class Introduction • Algebra Review • Angles • Non-Acute Angles	Sunday, 3 September by 23:30 (11:30 pm) **Use Proctorio**	Monday, 11 September by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	29 August			
	Wednesday	*30 August*			
	Thursday	31 August			
	Friday	1 September			
2	Monday	4 September	**No Class – Labor Day**		
	Tuesday	5 September	• Functions and Function Notation • Linear Functions • Quadratic Functions • Polynomial Functions • *Review for Exam 1*	Sunday, 10 September by 23:30 (11:30 pm) **Use Proctorio**	Monday, 11 September by 23:30 (11:30 pm) **Use Proctorio**
	Wednesday	*6 September*			
	Thursday	7 September			
	Friday	8 September			
3	**Monday**	**11 September**	• Radical Functions • Rational Functions • Trigonometric Functions • Non-Standard Position Angles	Sunday, 17 September by 23:30 (11:30 pm) **Use Proctorio**	Monday, 25 September by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	12 September			
	Wednesday	*13 September*			
	Thursday	14 September			
	Friday	15 September			
4	Monday	18 September	• Trigonometric Function Graphs • Exponential Functions • Logarithmic Functions • *Review for Exam 2*	Sunday, 24 September by 23:30 (11:30 pm) **Use Proctorio**	Monday, 25 September by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	19 September			
	Wednesday	*20 September*			
	Thursday	21 September			
	Friday	22 September			

SOUTH PLAINS COLLEGE
MATHEMATICS, ENGINEERING & COMPUTER SCIENCE

Week	Day	Date	Topic	Mastery Assessment Due	Exam Due
5	**Monday**	**25 September**	• Properties of Logarithmic Functions • Fundamental Identities • Sum and Difference Identities • Double-Angle Identities	Sunday, 1 October by 23:30 (11:30 pm) **Use Proctorio**	Monday, 9 October by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	26 September			
	Wednesday	*27 September*			
	Thursday	28 September			
	Friday	29 September			
6	Monday	2 October	• Half-Angle and Power-Reducing Identities • Sum-to-Product and Product-to-Sum Identities • Combining Functions • Inverse Functions • *Review for Exam 3*	Sunday, 8 October by 23:30 (11:30 pm) **Use Proctorio**	Monday, 9 October by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	3 October			
	Wednesday	*4 October*			
	Thursday	5 October			
	Friday	6 October			
7	**Monday**	**9 October**	• Transformations • Binomial Expansion • Rates of Change	Sunday, 15 October by 23:30 (11:30 pm) **Use Proctorio**	Monday, 23 October by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	10 October			
	Wednesday	*11 October*			
	Thursday	12 October			
	Friday	13 October			
8	Monday	16 October	• Symbolic Algebraic Manipulation • Verifying Trigonometric Identities • *Review for Exam 4*	Sunday, 22 October by 23:30 (11:30 pm) **Use Proctorio**	Monday, 23 October by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	17 October			
	Wednesday	*18 October*			
	Thursday	19 October			
	Friday	20 October			

Week	Day	Date	Topic	Mastery Assessment Due	Exam Due
9	**Monday**	**23 October**	• Other Types of Equations • Exponential and Logarithmic Equations • Roots of Polynomial Functions	Sunday, 29 October by 23:30 (11:30 pm) **Use Proctorio**	Monday, 6 November by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	24 October			
	Wednesday	*25 October*			
	Thursday	26 October			
	Friday	27 October			
10	Monday	30 October	• Systems of Equations • Inequalities in One Variable • Partial Fractions • *Review for Exam 5*	Sunday, 5 November by 23:30 (11:30 pm) **Use Proctorio**	Monday, 6 November by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	31 October			
	Wednesday	*1 November*			
	Thursday	2 November			
	Friday	3 November			
11	**Monday**	**6 November**	• Sequences and Series • Geometric Sequences and Series	Sunday, 12 November by 23:30 (11:30 pm) **Use Proctorio**	Monday, 27 November by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	7 November			
	Wednesday	*8 November*			
	Thursday	9 November			
	Friday	10 November			
12	Monday	13 November	• Parabolae • Ellipses • Circles • Hyperbolae	Sunday, 19 November by 23:30 (11:30 pm) **Use Proctorio**	Monday, 27 November by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	14 November			
	Wednesday	*15 November*			
	Thursday	16 November			
	Friday	17 November			

Week	Day	Date	Topic	Mastery Assessment Due	Exam Due
13	Monday	20 November	• Plane Curves and Parametric Equations • Vectors and Dot Product • Polar Plane • *Review for Exam 6*	Sunday, 26 November by 23:30 (11:30 pm) **Use Proctorio**	Monday, 27 November by 23:30 (11:30 pm) **Use Proctorio**
	Tuesday	21 November			
	Wednesday	***22 November***	**No Class – Thanksgiving Break**		
	Thursday	23 November			
	Friday	24 November			
14	**Monday**	**27 November**	• Using a Calculator • Solving Right Triangles • Law of Sines • Law of Cosines	Sunday, 3 December by 23:30 (11:30 pm) **Use Proctorio**	Wednesday, 13 December at 17:00 (5:00 pm) **in Classroom**
	Tuesday	28 November			
	Wednesday	***29 November***			
	Thursday	30 November			
	Friday	1 December			
15	Monday	4 December	• Triangle Applications • Radian Applications • Vector Applications • Complex Plane and Forms of Complex Numbers	Sunday, 10 December by 23:30 (11:30 pm) **Use Proctorio**	Wednesday, 13 December at 17:00 (5:00 pm) **in Classroom**
	Tuesday	5 December			
	Wednesday	***6 December***			
	Thursday	7 December			
	Friday	8 December			
16	Monday	11 December	*Review for Final Exam*		Wednesday, 13 December at 17:00 (5:00 pm)
	Tuesday	12 December	*Review for Final Exam*		Wednesday, 13 December at 17:00 (5:00 pm)
	Wednesday	13 December	**Final Exam** **at 17:00 (5:00 pm) in the Classroom**		
	Friday	15 December	**Semester Over** **Fall Graduation**		

Last day to drop a class: Thursday, 30 November 2023, by 15:00 (3:00 pm)
Remember, use the Gradescope app to submit your written work on Mastery Assessments and Exams while still being recorded in Proctorio. Do not "submit" the exam in Proctorio/Blackboard until after your work is submitted in Gradescope.