Trigonometry (QL)

MATH1060 351

Course Description

This course includes trigonometric functions and their graphs developed using circular and triangular methods including inverses; polar coordinates; and an introduction to vectors.

Pre-Requisite: ENGL 0990 w C/grade or better or appropriate placement score; AND within the last year MATH 1050 w/C grade or better or appropriate placement score.
Semester: All

This course includes trigonometric functions and their graphs developed using circular and triangular methods including inverses; polar coordinates; and an introduction to vectors.

Required Text or Materials

Title: Textbook OER Math 1060 – Trigonometry, 2nd Edition, Salt Lake Community College & University of Utah Links to the text, including individual sections, are within the Canvas course.

For more information on textbook accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Grading Scale

Grading

The following breakdown of weights will be used in the calculation of the course grade:

- Midterm Examinations: 45% of the course grade
- Final Examination: 25% of the course grade

- Quizzes, homework, projects, participation: 30% of the course grade.

Grades are assigned based on the following:

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Minimum %	93	90	87	83	80	77	73	70	67	63	60	0

It is an SLCC Math Department rule that students attaining a score of less than 60% on the final exam shall receive a grade no higher than “D” for the course.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Any Questions? (optional)	Discussion	0
	Exam 1 Corrections (This must be submitted in order to take Exam 1 credit back quiz)	Assignment	1
	Exam 2 Corrections (This must be submitted in order to take Exam 2 credit back quiz)	Assignment	1
	Exam 3 Corrections (This must be submitted in order to take Exam 3 credit back quiz)	Assignment	1

Due Date	Assignment Name	Assignment Type	Points
	Module 1 Homework Questions Forum (Optional)	Discussion	0
	Module 2 Homework Questions Forum (Optional)	Discussion	0
	Module 3 Homework Questions Forum (Optional)	Discussion	0
	Module 4 Homework Questions Forum (Optional)	Discussion	0
	Module 5 Homework Questions Forum (Optional)	Discussion	0
	Module 6 Homework Questions Forum (Optional)	Discussion	0
	Module 7 Homework Questions Forum (Optional)	Discussion	0
	Module 8 Homework Questions Forum (Optional)	Discussion	0
	Module 9 Homework Questions Forum	Discussion	0
	Practice Problems for Lessons 1 through 26	Quiz	0
	Practice Problems for Lessons 1 through 9	Quiz	0

Due Date	Assignment Name	Assignment Type	Points
	Practice Problems for Lessons 10 through 17	Quiz	0
	Practice Problems for Lessons 18 through 26	Quiz	0
	Roll Call Attendance	Assignment	100
	Submit Optional Homework 5 Identities	Assignment	0
8/22	Homework 1 Degree and Radian Measures of Angles	Assignment	20
8/23	Orientation: Introductions	Discussion	10
8/25	Quiz 1 Degree and Radian Measure of Angles	Assignment	50
8/27	Homework 2 Right Triangle Trigonometry	Assignment	21
8/29	Homework 3 The Unit Circle	Assignment	18
9/1	Quiz 2 Right Triangle Trigonometry	Assignment	50
9/1	Quiz 3 The Unit Circle	Assignment	50
9/3	Homework 4 The Six Trigonometric Functions	Assignment	21
9/5	Homework 5 Trigonometric Identities	Assignment	10

Due Date	Assignment Name	Assignment Type	Points
9/5	Homework 6 Beyond the Unit Circle	Assignment	10
9/8	Quiz 4 The Six Trigonometric Functions	Assignment	50
9/8	Quiz 5 Trigonometric Identities	Assignment	40
9/8	Quiz 6 Beyond the Unit Circle	Assignment	40
9/8	Submit Module 1 Lecture Notes	Assignment	25
9/10	Homework 7 Graphs of the Sine and Cosine Functions	Assignment	20
9/12	Homework 8 Graphs of the Other Trigonometric Functions	Assignment	19
9/15	Quiz 7 Graphs of the Sine and Cosine Functions	Assignment	50
9/15	Quiz 8 Graphs of the Other Trigonometric Functions	Assignment	50
9/17	Homework 9 Applications of Radian Measure	Assignment	11
9/17	Quiz 9 Applications of Radian Measure	Assignment	50

Due Date	Assignment Name	Assignment Type	Points
9/19	Exam 1	Assignment	100
9/19	Submit Module 2 Lecture Notes	Assignment	25
9/26	Homework 10 Using Trigonometric Identities	Assignment	22
9/26	Exam 1 Credit Back	Assignment	0
9/29	Quiz 10 Using Trigonometric Identities	Assignment	50
10/1	Homework 11 Multiple Angle Identities	Assignment	17
10/3	Homework 12 Inverse Sine and Cosine Functions	Assignment	26
10/6	Quiz 11 Multiple Angle Identities	Assignment	50
10/6	Quiz 12 Inverse Sine and Cosine Functions	Assignment	50
10/6	Submit Module 3 Lecture Notes	Assignment	25
10/8	Homework 13 The Other Inverse Trigonometric Functions	Assignment	24

Due Date	Assignment Name	Assignment Type	Points
10/10	Homework 14 Inverse Trigonometric Functions and Trigonometric Equations	Assignment	26
10/13	Quiz 13 The Other Inverse Trigonometric Functions	Assignment	50
10/13	Quiz 14 Inverse Trigonometric Functions and Trigonometric Equations	Assignment	50
10/15	Homework 15 Solving General Trigonometric Equations	Assignment	15
10/20	Quiz 15 Solving General Trigonometric Equations	Assignment	50
10/20	Submit Module 4 Lecture Notes	Assignment	25
10/22	Homework 16 The Law of Sines	Assignment	17
10/24	Homework 17 The Law of Cosines	Assignment	15
10/27	Quiz 16 Law of Sines	Assignment	40
10/27	Quiz 17 the Law of Cosines	Assignment	50

Due Date	Assignment Name	Assignment Type	Points
10/29	Exam 2	Assignment	100
10/29	Submit Module 5 Lecture Notes	Assignment	25
11/5	Homework 18 Polar Coordinates and Equations	Assignment	22
11/5	Exam 2 Credit Back	Assignment	0
11/7	Homework 19 Graphing Polar Equations	Assignment	6
11/10	Quiz 18 Polar Coordinates and Equations	Assignment	50
11/10	Quiz 19 Graphing Polar Equations	Assignment	40
11/12	Homework 20 Polar Representations of Complex Numbers	Assignment	8
11/14	Homework 21 Complex Products, Powers, Quotients, and Roots	Assignment	10
11/17	Quiz 20 Polar Representations of Complex Numbers	Assignment	50
11/17	Quiz 21 Complex Products, Powers, Quotients, and Roots	Assignment	40

Due Date	Assignment Name	Assignment Type	Points
11/17	Submit Module 6 Lecture Notes	Assignment	25
11/19	Homework 22 Vector Properties and Operations	Assignment	18
11/19	Homework 23 The Unit Vector and Vector Applications	Assignment	11
11/21	Homework 24 The Dot Product	Assignment	10
11/24	Quiz 22 Vector Properties and Operations	Assignment	50
11/24	Quiz 23 The Unit Vector and Vector Applications	Assignment	50
11/24	Quiz 24 The Dot Product	Assignment	40
11/24	Submit Module 7 Lecture Notes	Assignment	25
11/26	Homework 25 Sketching Curves Described by Parametric Equations	Assignment	15
11/26	Signature Assignment	Assignment	55
12/1	Quiz 25 Sketching Curves Described by Parametric Equations	Assignment	50

Due Date	Assignment Name	Assignment Type	Points
12/1	Quiz 26 Parametric Descriptions for Oriented Curves	Assignment	50
12/1	Homework 26 Parametric Descriptions for Oriented Curves	Assignment	13
12/3	Exam 3	Assignment	100
12/3	Submit Module 8 Lecture Notes	Assignment	25
12/5	Exam 3 Credit Back	Assignment	0
12/6	ePortfolio	Assignment	10
12/6	Jing Extra Credit Video 39=3% extra credit for the course	Assignment	0
12/11	Final Exam	Assignment	100
12/13	Policy: Difference Between Lowest Exam and Final	Assignment	0
12/13	Policy: Below 60% on Final	Assignment	0

Communication Plan

Example language:

- I will respond to email within [insert your timeline]. I will offer feedback on major assignments within [insert your timeline]. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.

- In this course I will be posting interactive announcements which will offer specific opportunities for class questions and extra credit every other week.
- Additionally, I will be participating in the discussion forums with you to share my perspective within the discipline and to offer some nuances of interpretation that may not be present in your textbook.
- Lastly, we'll be holding small group Q & A sessions, where we can learn from our peers (and faculty) on some of the more difficult units within the course.

Course Prerequisites

ENGL 0990 with a C grade or better, or an appropriate placement score AND within the last year MATH 1050 with a C grade or better, or an appropriate placement score.

Brief Description of Assignments/Exams

Homework

Your homework will be submitted online unless your instructor advises differently. The assignments will be available through your Canvas course site. Homework due dates are posted on the class schedule. You will be allowed unlimited attempts at each homework assignment, up to the due date. If your instructor has chosen to assign written homework from the textbook, your instructor will provide you with details.

These exercises are the required minimum for you to demonstrate the learning objectives of the course and the mastery of the course concepts. You are encouraged to work more exercises than those assigned. Regular practice is essential in learning mathematics. You should be prepared to spend at least two hours studying outside of the class for each hour you spend in class or watching video lectures. Many students find that much more time is required in order to perform as well as they desire on exams.

Quizzes

Quizzes will be submitted online unless your instructor advises differently. Quizzes will be available through your Canvas course site. Quiz due dates are posted on the class schedule. You will be allowed three attempts at each quiz, up to the due date.

Late Assignment policy

Your instructor will allow you to resubmit written assignments and projects for additional credit. Even if you received no credit due to a lack of submission, you can still submit the work for credit. It might take you a few attempts to finally master the subject matter, and your instructor will give you appropriate credit for your work.

However, all exams must be taken during their testing windows, as per the course calendar. If an extreme circumstance causes you to miss your testing window, get into communication with your instructor ASAP to discuss options.

Participation

Instructors will assign 5% of your course grade to participation in class during class meetings. Participation will be tracked using the Submit Lecture Notes assignments. If you miss a day, make sure you watch the recorded Zoom lesson so you can still learn the material and fill out the lecture notes for participation. Lecture notes will be due at the end of each module.

In the case of an “Emergency Day” as mandated by the school or by the government of Utah, class will be held digitally through Zoom at the normal meeting time. Attendance will still be expected as usual, though in the case that you cannot attend for various reasons, the Zoom class will be recorded and will be made available to students shortly after the class has concluded. For additional assistance, students are encouraged to use the digital Textbook, available on the Home Page of the Canvas course, as well as the Lesson Videos provided by the University of Utah, available in the Modules tab of the Canvas course. Please check your email for a message from your instructor in the event of an Emergency Day for more information.

Midterm Exams

Regular Exams: There will be three regular exams on the dates indicated below, and a comprehensive final exam. No notes, note cards, texts, any collaboration, internet devices, which includes cell phones, or external aid of any kind are permitted on any exam. Scratch paper and a standard scientific calculator are allowed, e.g., a TI30, but no graphing, no programmable, and no calculators capable of algebraic manipulation are permitted; A PORTION OF THE EXAM MUST BE COMPLETED WITHOUT THE USE

OF A CALCULATOR. See the calculator policy below. No midterm exams will be dropped. The regular exams are:

Exam 1: via Testing Center appointment

Exam 2: via Testing Center appointment

Exam 3: via Testing Center appointment

Final Exam: In regular classroom.

NOTE: All exams, regular exams and the final exam, must be taken in-person, no exceptions. This includes all in-person and hybrid classes, of course, where students typically take exams in-person and in the assigned classroom of their course (final exams could be assigned elsewhere). Note that in-person testing also includes all online and broadcast classes. Students in these classes will test in-person, on Redwood campus at the new Testing Center, located in the basement of the Markosian Library.

Math 1060's Testing Disclaimer: Any student not willing or not able to comply with in-person testing in their classroom, or at Redwood campus' Testing Center, should not register, or remain registered, for Math 1060. Students should make arrangements early with employers, etc. to be free during scheduled exams. Missing an exam for work is not excused as students are aware of the exam dates the first day of classes. No exam will be dropped in this course.

Final Exam

There is a mandatory, departmental, comprehensive, final exam. Its format will be paper, and pen-or-pencil, with 16 – 20 mandatory, show-your-work problems, no multiple choices. Students will show/write their work for each problem and all final exams will be graded by their instructors reading the work shown; partial credit is possible for relevant, partial, correct work.

No note cards, notes, texts, collaboration, internet devices, programming/graphing calculators, or external aid of any kind are allowed. Scratch paper and a standard scientific, non-graphing calculator are allowed, e.g., a TI30.

A PORTION OF THE FINAL EXAM MUST BE COMPLETED WITHOUT THE USE OF A CALCULATOR. You must complete part one portion of the final exam without using a

calculator. For full credit, you must show all appropriate work and clearly indicate your answers. After you have finished Part One, your instructor/proctor will give you the remaining part of the exam. Students are not allowed to have Part One back after submitting it.

Final exams can only be taken once a semester. There are no final exam retakes and no final exam corrections of any kind. The final will be a comprehensive examination emphasizing topics listed under the course objectives. The final exam will be closed book and will be taken at the time and on the day noted in the SLCC final exam schedule for the semester.

Final Exam: Final Exam: In regular classroom.

The final exam will account for 25% of your grade. It is an SLCC Math Department rule that students attaining a score of less than 60% on the final exam shall receive a grade no higher than “D” for the course.

Your instructor has a Final Exam Replacement Policy that will allow you to raise up the lowest exam grade to match the grade you receive for the final exam. This policy does not come into effect if you perform worse on the final than on your lowest exam. This policy is not automatically applied. It will take a few days after the final to see it on your grade.

Keys for Success (how to succeed in the course)

Attendance and Participation

Class attendance and canvas participation are required. Regular attendance and canvas participation are essential to achieve satisfactory results. It is the student's responsibility to be aware of all announcements made in class and canvas, material covered, test dates and assignment due dates.

Contingency Remote Workday/Learning Plan

Under Utah legislation, the governor can now call a "Remote Workday" given certain circumstances. These remote workdays can be due to inclement weather, pollution, or natural disasters.

1. Each math instructor (full or parttime) will check-in/communicate with the Math AD, say, with an email that acknowledges the remote workday and their relative plan for it.

2. The AD will verify whether any class will still meet on a campus if something happened at that campus, etc.

3. Each instructor will make a Canvas class announcement/communicate with students, informing them of the remote learning day and what their relative plan is for the day's class. Announcements will include pertinent info for the remote day and/or any adjustments to the next class:

What are the assigned readings, video lectures to watch, practice problems to work?

Is the instructor holding a Zoom meeting in lieu of the in-person class? The Zoom meeting must be optional and should be conducted at the same time as the regularly scheduled class, if possible. Moving to livestream modality is only an option, not required of the instructor or students. The Zoom meeting could simply be to answer student questions.

Any test that was scheduled on a remote learning day will be postponed, either to the next class or possibly later scheduled through the Testing Center. Instructors will let students know that the exam has been postponed in their Canvas announcement.

Math Department Website

The SLCC Math homepage is located at http://www.slcc.edu/math/. It contains FAQs, policies, final exam information, and tips for student success.

Math 1060 Workshops

Math 1060 workshops are offered for extra help through our STEM Learning Resources in collaboration with the Mathematics Department to provide interactive support and opportunities outside of the classroom for students to ask questions and work through concepts with an instructor, other students, and/or tutors; visit https://www.slcc.edu/stem/workshops.aspx.

To get the most out of our workshops, students should bring problems, questions, concepts to work through, and expect to engage with other students who are taking Math 1060.

General Education Information

General Education Statement

This course fulfills the **Quantitative Literacy (QL)** requirement for the General Education Program at Salt Lake Community College. It is designed not only to teach the information and skills required by the discipline, but also to develop vital workplace skills and to teach strategies and skills that can be used for life-long learning. General Education courses teach basic skills as well as broaden a student's knowledge of a wide range of subjects. Education is much more than the acquisition of facts; it is being able to use information in meaningful ways in order to enrich one's life. While the subject of each course is important and useful, we become truly educated through making connections of such varied information with the different methods of organizing human experience that are practiced by different disciplines. Therefore, this course, when combined with other General Education courses, will enable you to develop broader perspectives and deeper understandings of your community and the world, as well as challenge previously held assumptions about the world and its inhabitants.

Each student in General Education courses at SLCC maintains a General Education ePortfolio. Instructors in every Gen Ed course will ask you to put at least one assignment from the course into your ePortfolio, and accompany it with reflective writing. It is a requirement in this class for you to add to your ePortfolio one of the projects, as well as a reflection. Your ePortfolio will allow you to include your educational goals, describe your extracurricular activities, and post your resume. When you finish your time at SLCC, your ePortfolio will then be a multi-media showcase of your educational experience. For detailed information visit http://www.slcc.edu/gened/eportfolio. Make sure to check out the Student Support Site.

Calculator Policy

Calculators are used to demonstrate concepts and facilitate problems. They are not a substitute for learning the concepts. Students should graph basic trigonometric functions without the use of a calculator. Questions on exams will test basic facts that must be memorized, as well as how to use a calculator to help answer questions with intensive

arithmetic steps or for approximations in applied problems. Calculator use may be restricted on some exams or portions of exams.

Scientific calculators with no more than a basic numeric store and recall memory are allowed on exams. The following are prohibited on exams: graphing, programmable, or calculators capable of symbolic manipulation, including the TI89, TI92, TI-Nspire, HP 48SX, HP 48GX, as well as other models and brands, computers, cell phones, and any other communication device that can connect to the Internet.

Course Student Learning Outcomes

- Understand important trigonometric concepts.
- Have the necessary knowledge and skills to succeed in a calculus course.
- Acquire skills necessary for expressing concepts, ideas, and problem-solving techniques using correct mathematical notation and language.
- Organize, present and explain solutions to problems involving real-world applications, both individually and through group work.
- Gain knowledge of mathematical theory and develop skills in logical thinking, leading to understanding of mathematical proofs.

College Wide Student Learning Outcomes

- Students acquire substantive knowledge in their intended major
- Students communicate effectively
- Students develop quantitative literacies necessary for their chosen field of study
- Students develop computer and information literacy
- Students think critically and creatively

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

You can access the document by clicking on the following link: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, please visit the Institutional Syllabus under the Tutoring and Learning Support tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, please visit the Institutional Syllabus under the Advising and Counseling Support Services tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar

Additional Policies

Student Code of Conduct

Student Code of Conduct Statement: The student is expected to follow the SLCC Student Code of Conduct at https://www.slcc.edu/policies/policies/student_affairs/8.1.050.aspx

SLCC Student Code of Conduct.