Trigonometry and Analytic Geometry

Section 02, CRN 80897, Tuesday & Thursday, 8:25 – 9:40am, UC-424

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Prerequisites. The prerequisite for Math 1112 is Math 1111 with a grade of C or better. Basic computer skills, such as file management and using email, are expected and will not be taught. Please visit the HUB if help is needed using a computer or if you have a hardware or software issue: http://www.clayton.edu/hub.

Course Description. Math 1112 is a three semester credit hour course that is a study of trigonometry including angle measurement, solving triangles, fundamental trigonometric identities, solving trigonometric equations, and an introduction to trigonometric functions of real numbers and their graphs. Additional topics include matrices, vectors, parametric equations, and the conic sections and their graphs. A grade of C or better in Math 1112 is a prerequisite for subsequent math courses at Clayton State University.

Course Materials. The following materials are required and should be brought to every class meeting:

- **Textbook**: The textbook is *Algebra and Trigonometry* from OpenStax College. The textbook can be downloaded for free at https://openstax.org/details/algebra-and-trigonometry. Click on the link for "Student Resources" to download the print edition of the textbook and the solutions manual. Students may also access the web version of the text at http://cnx.org/contents/13ac107a-f15f-49d2-97e8-60ab2e3b519c. Students who would like a printed version (hard-copy) of the textbook may print the textbook themselves or purchase it from the LochShop (http://www.clayton.edu/auxservices/the-loch-shop) or from Amazon (http://www.amazon.com/). The textbook has many examples and explanations which are surprisingly helpful when read in conjunction with the in-class discussions. It is to your benefit to read the relevant sections of the textbook in advance of the corresponding in-class discussion.

- **WeBWorK**: WeBWorK is a free homework management system. All homework and/or quiz assignments will be completed online using WeBWorK: https://webwork.clayton.edu/webwork2/M1112-02-FA16/ Please use your CSU credentials to login (the same ones you use for the SWAN/DUCK/D2L).

- **Computer**: Students will use their computers during class and on exams as directed by the instructor. Students should have ready access to a computer that meets faculty-approved hardware and software requirements. More information about these requirements can be found on the ITP Choice page (http://www.clayton.edu/hub/itpchoice). It is the student’s responsibility to have a working computer. Students having computer issues should inform their instructor and visit the Hub’s Help Center for support.

- **Math Software and Technology**: This course uses free software called Graph. Follow the directions provided on the Graph website (http://www.padowan.dk) under the Download tab.
Windows user should choose “Release” and Mac users should choose “Graph on Mac.” Mac users may prefer to install Windows on their machines—please visit the Hub Help Center for help with this. In class, the instructor will use the “Accessories Calculator” on the computer as needed. Students may also use this calculator or any non-algebraic, non-graphing calculator on homework, quizzes, or tests. You should have your calculator approved by the instructor before using it! Use of software or technology that is not approved by the instructor will constitute Academic Dishonesty.

Course Content. The following sections will be covered in the course:
- Sections 7.1-7.4: The Unit Circle (Sine and Cosine Functions)
- Sections 8.1-8.3: Periodic Functions
- Sections 9.1-9.5: Trigonometric Identities and Equations
- Sections 10.1-10.8: Further Applications of Trigonometry
- Sections 11.5 & 11.6: Systems of Equations and Inequalities
- Sections 12.1-12.3: Analytic Geometry

Course Learning Outcomes. After successful completion of the course the student will be able to
- Identify the inherent restrictions on the domain of a trigonometric function and find the range of a trigonometric function.
- Understand the interconnectedness of various modes of defining a function (numeric, graphical, generalized) and be able to analyze functions from numeric, graphical, and symbolic points of view; shift among them when appropriate; and justify this through inductive or deductive reasoning.
- Shift among verbal, numeric, graphical, and symbolic forms as required for particular situations.
- Solve multi-step problems using inductive, deductive, and symbolic reasoning.
- Use appropriate technology in the evaluation, analysis, and synthesis of mathematical information.

General Education Outcomes.
- Communication: Students will gain a knowledge base of basic mathematics. Students will communicate their ideas orally in class discussions and in written form on examinations.
- Critical Thinking: Students will apply their knowledge to solve mathematical problems. Students will determine the mathematical question, apply appropriate concepts, and provide evidence of a logical progression of thoughts in order to draw conclusions and solve mathematical problems.

Grading Policy. The final course letter grade for this course will be determined by the following grading scale: A >= 90% > B >= 80% > C >= 70% > D >= 60 > F.
- Homework: Homework will account for 100 out of 550 total course points and will be completed in WeBWorK. The Homework Average will be computed as the average of a student’s homework grades. Reading the sections of the textbook that correspond to a homework assignment is considered part of the homework assignment. Students are strongly encouraged to work on homework assignments as the material is being discussed in class and to seek help from the instructor during office hours if help is needed with homework. Students must complete each homework set by the assigned due date.
- Tests: There will be three tests, each worth 100 out of 550 total course points. Tests will be given during class on the dates provided in the course Pacing Guide. Students who miss a test will receive a grade of zero (0) on that test. Students may be allowed to take a test earlier than
the scheduled date if permission is requested via email at least one week prior to the test, but no “make-up” or late tests will be allowed.

- **Final Exam.** The comprehensive Final Exam is worth 150 out of 550 total course points. The Final Exam will be administered on **Tuesday, December 6, from 8:00am to 10:00am**, in our usual classroom. Students who do not take the Final Exam will receive a grade of F in the course. Students may be allowed to take the Final Exam earlier than the scheduled date if permission is requested via email at least one week prior to the Final Exam.

- **Midterm Grades.** The midterm grade for the course will be issued via the DUCK by **Tuesday, October 4**. The midterm grade will reflect about 30% of the overall course grade. Based on this grade, the student may choose to withdraw from the course by **Friday, October 7** and receive a W. Any student who wishes to pursue this option must fill out an official withdrawal form, available in the Office of the Registrar, no later than the date designated on the official Academic Calendar ([http://www.clayton.edu/calendar](http://www.clayton.edu/calendar)) for the semester in question. Withdrawal information can be found on the Registrar’s website: [http://www.clayton.edu/registrar](http://www.clayton.edu/registrar).

- **Bonus Points.** Students with two or fewer unexcused absences will be allowed to replace their lowest grade on Test #1, #2, or #3 with the percentage grade on the Final Exam. Grades of zero (0) on a missed test cannot be replaced with the grade on the Final Exam.

Course Policies.

- **Attendance.** Attendance is mandatory for all scheduled class meetings. Attendance will be taken daily, usually at the beginning of class. Unless prior approval has been obtained, students who arrive after class starts or before class ends will be issued an unexcused absence. In the event of an unexpected instructor absence or university closure, students should check their email for further instructions.

- **Excused Absences.** The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for absence. The student should make every effort to inform the instructor via email before the student misses a class. In such cases where this is not possible, the student will have one week to provide verifiable documentation and request an excused absence.

- **Electronic Messages.** The instructor’s email address is ChristopherRaridan@clayton.edu. Use only your CSU email account when corresponding with your instructor. Email from another account will not be answered. Students should check their CSU email accounts often, at least once a day. Do not send time-sensitive information via email; instead, speak with the instructor directly. A delivered email does not relieve a student of the responsibility of informing the instructor in person about some concern. Voice mail or email messages to the instructor are usually returned within two business days (that is, not counting weekends or holidays).

- **Email Etiquette.** Any email sent to the instructor should include in the subject heading the student’s first and last name as well as the course and section number. Failure to do so may result in a delayed response (or no response at all) to an email. Remember to act professionally when sending email to the instructor.

- **Technology Etiquette.** Do not connect to the Internet during class unless instructed to do so by your instructor. The computer is to be used only for the Graph program and/or to access the Accessories Calculator and should be muted at all times. Any earbuds or headphones should be put away and out of the sight of the instructor during class. Students are required to mute or silence their cellphones. Cellphones should be put away and out of sight of the instructor. Failure to abide by these rules will constitute Academic Dishonesty.
Student Resources.

- **The Instructor.** The student’s primary resource is their instructor. The instructor holds regular office hours, which are listed on this syllabus, outside the instructor’s office, and on the instructor’s website.

- **Appointments.** Students should make an appointment via email to meet with the instructor, even during office hours. This will ensure that the instructor does not already have someone else scheduled. Typical office appointments are for 15 minutes so students should arrive at the appointment prepared to ask questions.

- **Center for Academic Success.** The Center for Academic Success (CAS) is located in Edgewater Hall, Suite 276. Students can obtain tutoring from peer-tutors, either through drop-in sessions or one-on-one appointments, at the CAS. A complete description of CAS services can be found on their website: [http://www.clayton.edu/cas](http://www.clayton.edu/cas).

- **Disability Resource Center.** Students with disabilities who require accommodations need to register with the Disability Resource Center (DRC) in order to obtain these accommodations. The DRC is located in Edgewater Hall, Suite 255. Students registered with DRC who are seeking accommodations for this course should make an appointment with the instructor early in the semester to discuss specific accommodations. In particular, the instructor must be given a copy of the accommodations letter provided by the DRC. The DRC staff can be contacted by phone at (678) 466-5445 or via email at DisabilityResourceCenter@clayton.edu.

- **Operation Study.** The faculty and staff of Clayton State University expect and support high motivation and academic achievement. Look for Operation Study activities and programs that are designed to enhance your academic success.

- **Counseling and Career Services.** Students may obtain help with education, career, and personal concerns from a staff of professional counselors and career advisors. For information about Counseling Services, please visit [http://www.clayton.edu/counseling](http://www.clayton.edu/counseling), and for information about Career Services, please visit [http://www.clayton.edu/career](http://www.clayton.edu/career).

University Policies. A complete list of university policies can be found in the current Academic Catalog by visiting [http://www.clayton.edu/publications](http://www.clayton.edu/publications).

- **Student Conduct.** For the health, safety, and general well-being of all students, faculty, and staff, student must abide by the policies set forth in the Clayton State University Handbook ([www.clayton.edu/Portals/46/docs/student-handbook.pdf](http://www.clayton.edu/Portals/46/docs/student-handbook.pdf)) and the Basic Undergraduate Student Responsibilities as listed in the current Clayton State University Academic Catalog ([www.clayton.edu/Portals/5/BasicUndergraduateStudentResponsibilities.pdf](http://www.clayton.edu/Portals/5/BasicUndergraduateStudentResponsibilities.pdf)).

- **Academic Dishonesty.** Any type of activity that is considered dishonest by reasonable standards may constitute academic misconduct. The most common forms of academic misconduct are cheating and plagiarism. All instances of academic dishonesty will be reported to the Office of Student Conduct. Should the student be found guilty of any academic misconduct, a final letter grade of F will be assigned for the course.

- **Disruptive Behavior.** Behavior which disrupts the teaching-learning process will not be tolerated. Conditions attributed to physical or psychological disabilities are not considered as a legitimate excuse for disruptive behavior. A student who fails to respond to reasonable faculty direction regarding disruptive behavior will be asked to leave the classroom and may be dismissed from the course. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF (withdrawal-failing) regardless of
the student’s current standing in the course. Examples of disruptive behavior and the appeal procedure are provided at the Disruptive Classroom Behavior Web Page: http://www.clayton.edu/portals/5/disruptiveclassroombehavior.pdf.

- **“No Show.”** Any paid student who has failed to attend class by the deadline posted in the official Academic Calendar (http://www.clayton.edu/calendar) for the term will be identified as a “no show.” Please review the No Show Policy: http://www.clayton.edu/registrar/No-Show-Policy.

Other Information.

- **Changes to the Syllabus.** The instructor reserves the right to add or delete topics from this course and to adjust due dates as needed. Students will be informed of changes via email or during class.

- **Academic Calendar.** The current Academic Calendar (http://www.clayton.edu/calendar) provides general information concerning university deadlines and holidays.

- **Teacher Education:** The mission of the Teacher Education unit is to prepare professional educators who engage in reflective practice and who are competent, caring, committed, collaborative, culturally responsive, and prepared to teach diverse learners in an ever-changing society. The content of this course syllabus correlates to education standards established by national and state education governing agencies, accrediting agencies, and learned society or professional education associations. For more information about teacher education, including the complete Clayton State University Teacher Education Conceptual Framework and educational correlation matrices, please visit http://www.clayton.edu/arts-sciences/Teacher-Ed.