# FALL 2022 SYLLABUS: Math 170: Analytic Trigonometry– Section: 9781:

# 3 Hours Lecture, 3 Units (Semester from 08/22/2022 – 12/17/2022)

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| Instructor: | Charles Koether | Office Hours and Location: |
| Days/Time: | Tues. & Thurs.: 6:00 to 7:15 PM | Tues: 5:30pm to 6:00pm |
| Location: | H - 114 | H - 114 |
| Email: | charles.koether@gcccd.edu |  |

**\*Final Exam: Tuesday, December 13, 2022: 6:45-8:45pm**

**CATALOG (C0URSE) DESCRIPTION:**

 MATH 170 covers skills and concepts of Trigonometry that are developed as we explore several topics: various definitions of the trigonometric functions, application problems involving triangles, trigonometric identities, inverse trigonometric functions, trigonometric equations, the Law of Sine, Law of Cosine and vectors., and an applied trigonometry project.

 \*See detailed course description in the Cuyamaca College Catalog.

# COURSE OBJECTIVES:

Students will be able to:

1. Identify special triangles and their related angle and side measures.
2. Evaluate the trigonometric function of an angle in degree and radian measure.
3. Manipulate and simplify a trigonometric expression.
4. Solve trigonometric equations, triangles, and applications.
5. Graph the basic trigonometric functions and apply changes in period, phase, and amplitude to generate new graphs.
6. Evaluate and graph inverse trigonometric functions.
7. Prove trigonometric identities.
8. Calculate vector sum, vector products, dot products, vector magnitudes, and vector angles.
9. Analyze physical problems and create trigonometric relationships involving triangles, the coordinate system, and the unit circle, or vectors.

# STUDENT LEARNING OUTCOMES:

# Upon successful completion of this course, students will be able to:

# Use analytical, numerical, and graphical methods to solve trigonometric problems.

# Solve multi-disciplinary application problems and interpret the results in context.

# COURSE MATERIALS:

The following items are required for the course:

1. Textbook: FREE (Online)

 *Algebra and Trigonometry* by Jay Abramson, Open Stax

<https://openstax.org/details/books/algebra-and-trigonometry>

You can choose to buy the book from this website or JUST download it to your computer.

1. Graphing calculator like the TI-83 or TI-84 for Trigonometry.

\* Homework assignments are from Knewton Alta through CANVAS.

3. 8 ½ x 11 loose leaf paper

1. Graph paper- 1/4 rule
2. Geometric Tools- Compass, Ruler, Protractor,

30-60-90 Triangle, 45-45-90 Triangle

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# COURSE SUPPORT:

#  There is an online tutorial program, and free, individual / group tutoring in the STEM CENTER.

# COURSE WORK:

Completing the course successfully involves satisfactory performance on tests, quizzes, homework, group work, and projects.

Tests: Each test is **50 minutes** and worth 100 points. The comprehensive final is 200 points. You **CANNOT** make-up a missed test without notifying me in advance, either by email or via a student colleague.

All quizzes and tests are in class. The homework quizzes are given regularly and cover questions from the homework. Some quizzes cover formulas and memorization facts. Additional points in the Homework/Quizzes category can be earned from group activities and projects. Please try to involve every group member in the outcome. Refer to Knewton Alta for daily assignments. Online due dates are subject to change. Changes are announced in class. You are responsible for all changes.

**ATTENDANCE:**

I expect you to attend every class and remain for the entire class. I consider **over six hours** missed as “excessive,” and you could be dropped from the class as a result. Three late shows count as one absence. Why the stress on attendance?

1. Mathematical content is progressive.
2. New concepts depend on concepts learned in previous lessons.
3. Mathematics requires a disciplined thinking process.

Discipline in attendance will encourage the development of this thinking process.

1. In class activities are an important part of class. **NO** make-up for group activities.
2. If you miss class, you lose the opportunity to earn points toward your grade.
3. Test make-up is possible, but please try to be present the day of the test.

# GRADING PROCESS:

Points are earned for successfully completing tests, quizzes, homework, group work, and projects. Grades are determined on a percentage of the total points. The total points are subject to change. An “A” means excellent. A “B” means very good. A “C” means good. A “D” means less than satisfactory. An “F” means failure to master most of the concepts.

Knewton Alta Homework: 20% of the total grade

Project: 10% of the total grade

Attendance: 10% of the total grade

Tests, Quizzes, and Final 60% of the total grade

 \*Tests could include essay questions.

**IMPORTANT DATES:**

Add/Drop Period (full semester classes): 08/22-09/04

Last day to drop semester length classes and to qualify 09/04

for a refund without a “W” grade:

 Last day to apply for Pass/No Pass: 09/23

 Last day to drop semester length classes with a “W” grade: 11/13

 Veteran’s Day (Holiday) 11/11

 Thanksgiving Break (Holiday): 11/24-11/26

 Final Examination: Tuesday: 12/13: 6:45p.m.-8.45p.m.

\*For a full list of Fall Semester 2022 Dates, refer to the GCCCD 2022-2023 Academic Calendar.

**ACADEMIC DISHONESTY:** If you are caught cheating or plagiarizing, you will earn a 0 on that assignment/test. If it happens a second time, you will earn a ‘0’ on that assignment, and I will report it. As a result, this could result in sanctions that include removal from the class.

**TIPS FOR SUCCESS:**

This list gives you a few things to do or keep in mind so that you can achieve as much as possible in this class.

* Math - It’s all in your head.
* The Chain Reaction: Hard work --> Experience --> Confidence --> Fulfillment/Enjoyment.
* Every time: Come to class on time, and stay the whole time.
* Read the new material (OPEN STAX) **BEFORE** it is presented in class.
* Learning is **YOUR** responsibility.
* Ask questions.
* Make friends, and do homework in groups.
* Have fun
* Remember - **YOU CAN DO IT!** 

# \*STEM Achievement Center: H Building, First Floor:

To support your efforts to succeed in this class, it is highly recommended that you utilize the free tutoring services available in the STEM Center or Academic Resource Center (ARC). It is a resource center that provides individual assistance in Science, Technology, Engineering, and Mathematics. Tutors are available to answer your homework questions. You will also have access to graphing calculators, textbooks, instructional videos, and computer tutorial programs.

Please contact Samantha Lee at samantha.lee@gcccd.edu for further information, or (619) 660-4396.

**Disabled Students Programs and Services (DSPS):**

This service for eligible students assists students with disabilities by assessing, determining, and providing the appropriate academic accommodations to help students achieve their educational goals.

Students should go to WebAdvisor in order to complete the mandatory online orientation, to schedule the English and Math placement exams, and select the courses.

**DSPS Main Office High Tech Center (HTC)**

One Stop Center, Room A-113 Room C-114 (near library)

900 Rancho San Diego Parkway (619) 660-4299

El Cajon, CA. 92019-4369

Phone: (619) 660-4239

\*The above information is from the Cuyamaca College website: <https://www.cuyamaca.edu/>

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| **WEEK** | **DAY** | **DATE** | **SECTIONS COVERED** | **COMMENTS** |
|  |  |  |  |  |
| **1** | **Tuesday** | **8/23** | **Sketching,****Ratios and****Proportions** |  |
|  | **Thursday** | **8/25** | **Chapter 7.1** |  |
| **2** | **Tuesday** | **8/30** | **7.2** |  |
|  | **Thursday** | **9/01** | **7.3** |  |
| **3** | **Tuesday** | **9/06** | **7.4** |  |
|  | **Thursday** | **9/08** | **7.4 continued** |  |
| **4** | **Tuesday** | **9/13** | **Test****Chapter 7** |  |
|  | **Thursday** | **9/15** | **8.1** |  |
| **5** | **Tuesday** | **9/20** | **8.2** |  |
|  | **Thursday** | **9/22** | **8.3** |  |
| **6** | **Tuesday** | **9/27** | **Review Chap. 7 & 8** |  |
|  | **Thursday** | **9/29** | **Review con’t.** |  |
| **7** | **Tuesday** | **10/04** | **Test****Chapter 8** |  |
|  | **Thursday** | **10/06** | **9.1** |  |
| **8** | **Tuesday** | **10/11** | **9.2** |  |
|  | **Thursday** | **10/13** | **9.3** |  |
| **9** | **Tuesday** | **10/18** | **9.3 continued** |  |
|  | **Thursday** | **10/20** | **9.4** |  |
| **10** | **Tuesday** | **10/25** | **9.5** |  |
|  | **Thursday** | **10/27** | **Review** |  |
| **11** | **Tuesday** | **11/01** | **Test****Chapter 9** |  |
|  | **Thursday** | **11/03** | **10.1** |  |
| **12** | **Tuesday** | **11/08** | **10.1** |  |
|  | **Thursday** | **11/10** | **10.2** |  |
| **13** | **Tuesday** | **11/15** | **10.3** |  |
|  | **Thursday** | **11/17** | **10.4** |  |
| **14** | **Tuesday** | **11/22** | **10.5** |  |
|  | **Thursday** | **11/24** | **Holiday** | **Thanksgiving** |
| **15** | **Tuesday** | **11/29** | **Review** |  |
|  | **Thursday** | **12/01** | **Test Chapter 10** |  |
| **16** | **Tuesday** | **12/06** | **Review for Final** |  |
|  | **Thursday** | **12/08** | **Review for Final con’t.**  |  |
| **17** | **Tuesday** | **12/13** | **FINAL** | **6:45p.m.- 8:45p.m.** |