

**SYLLABUS**  
**Trigonometry – Fall 2007**

**COURSE No. :** MATH 121 **UNITS:** 3

**CLASS HOURS:** Monday, Wednesday, Friday: 11:00-11:50 a.m. **ROOM:** M331

**TEXT:** McKeague and Turner, *Trigonometry*, Brooks Cole, 2004 Fifth edition

**GRADING:** Letter Grade Only **PREREQUISITE:** Math 321 and Math 331

**INSTRUCTOR:** Mrs. Irene Wong (BS Pure Math, CSUEB; MS Applied Math, Cal Poly)

**OFFICE:** Science Complex Faculty Offices: *Room M303*

**OFFICE HOURS:** Mon/Wed: 10:30 – 11:00 am and 2:00 – 2:30 pm  
Tues/Thurs: 11:00 – 11:30 am and 2:30 – 3:00 pm  
Friday: 10:00-10:50 am

**MATH CENTER:** Tues/Thurs: 4:30 – 6:30

**PHONE:** 922-6966, Extension 3317

**EMAIL:** [iwong@hancockcollege.edu](mailto:iwong@hancockcollege.edu)

**WEB PAGE:** Assignment Sheet, this Syllabus, handouts, worksheets, worked problems and other resources and links are available on my personal web page at [www.irenewong.net](http://www.irenewong.net).

**ENTRANCE SKILLS FOR THE COURSE:** Add, subtract, multiply, divide and simplify rational expressions; add, subtract, multiply, divide and simplify radical expressions; solve nonlinear equations and inequalities; evaluate a function, define a function, domain and range; find the inverse of a function; graph linear and quadratic functions; solve systems of linear equations in two or three variables; solve word problems at the Intermediate Algebra level; use deductive reasoning to prove valid geometric statements; outline a basic procedure employing deductive logic; recognize a valid argument; translate a word problem into geometric language and use geometry to find the answer; state and apply geometric formulas.

**CATALOG DESCRIPTION OF THE COURSE:** The study of directed angles, degree/radian measures of angles, trigonometric functions of angles and of numbers, solutions of right and oblique triangles, identities, functions of composite angles, graphs, equations, inverse functions, vectors and complex numbers.

**SCHEDULE DESCRIPTION OF THE COURSE:** A study of the trigonometric functions of both real numbers and angles, intended for applications and preparation for calculus.

**COURSE GOALS:** To encourage and enable students to

1. develop an understanding of the basic concepts of trigonometry.
2. work with non-algebraic functions and equations.
3. develop procedures to assist in understanding and writing proofs involving non-algebraic functions.
4. learn concepts necessary to follow logical arguments.
5. develop communication skills necessary to presenting a logical argument.
6. take part in those forms of creative activity utilized in mathematics.

**INSTRUCTIONAL OBJECTIVES:** At the end of the course the student will demonstrate the ability to

1. find the trigonometric functions of an angle given in either degrees or radians (from memory or using a calculator).
2. determine the domain and range of functions like those studied in the course and their inverses and composites (if possible).
3. prove identities and make substitutions using those identities.
4. graph a function of the kind studied in the course using translation, amplitude, phase shifts.
5. solve triangles using sine and cosine laws.
6. solve trigonometric equations.
7. solve word problems using trigonometric concepts.
8. compute with complex numbers utilizing trigonometry.

**SUPPLIES:** You will need the text, 8.5x11 lined paper for homework, graph paper, a small ruler, a protractor, sharp pencils, and a *very large eraser*. Optional extra credit notebook (see details below). All homework assignments, quizzes and tests must be done in pencil, *not ink*. Work done in ink may not be submitted for a grade.

**ATTENDANCE:** You are expected to attend each class meeting. Excessive absences will very likely effect your grade. You may be dropped after six successive absences. If you decide to drop this class, you are responsible for officially withdrawing from the class. Failure to do so will result in a final grade of F. Please see me about excessive absences due to illness or work.

**EXAMS:** Each test will cover one or two chapters. The actual number of chapter tests is subject to change, but there will be no more than five. One make-up exam for a missed exam *may possibly* be given, but at the discretion of the instructor. If an exam is missed and not made-up then the possible final exam grade will increase by 100 points to 300 points.

**WEEKLY QUIZZES:** At least one quiz will be given each week. Whenever possible, quizzes will be announced in advance. The two lowest scores will be dropped, therefore there will be no make-up quizzes given for a missed quiz.

**HOMEWORK:** Homework due on Monday and/or Tuesday will be collected on Wednesday. Homework due on Wednesday and/or Thursday will be collected on Monday. No credit will be given for late homework. The total homework assignment grade will be equivalent to 100 points and will be used in the determination of your final grade. See GRADES.

**FINAL EXAM:** A **required**, comprehensive final exam will be given **Monday, December 17, from 10:30 am to 12:30 pm**. The final exam will be given in our regular classroom. No final exam will be given before Final Exam Week. **Not taking the final exam will result in a grade of F.**

**GRADES:** Final grade determination will be made after the final exam has been graded. Your final grade will depend on the following point distribution (total possible points to be adjusted if the number of exams changes):

Five Exams @100 points each	500 pts
Weekly Quizzes	100 pts
Critical Thinking Questions/Worksheets	100 pts
Daily Homework	100 pts
Final Comprehensive Exam (Required)	200 pts

90-100% of Total Possible Ppoints	A
80-89% “ “ “ “	B
65-79% “ “ “ “	C
50-64% “ “ “ “	D
0-49% “ “ “ “	F

**WHAT IS MATHEMATICS?** Mathematics is first and foremost a form of reasoning. In the context of reasoning analytically about particular types of quantitative and spatial phenomena, mathematics consists of thinking in a logical manner, formulating and testing conjectures, making sense of things, and forming and justifying judgments, inferences, and conclusions. We do mathematics when we recognize and describe patterns; construct physical and/or conceptual models of phenomena; create symbol systems to help us represent, manipulate, and reflect on ideas; and invent procedures to solve problems. (Michael T. Battista)

### **WHY STUDENTS OFTEN HAVE DIFFICULTY IN A MATH COURSE**

1. They are under prepared. Studying calculus is like building a house. First to be built is the foundation. The foundation must be a structure that will support the walls, roof and contents of the house. Algebra, geometry and trigonometry are the main building blocks of the foundation for the first semester of calculus. If your foundation (no pun intended) in these subjects is weak, then you may be underprepared for this course.
2. They do not try to *understand the concepts; they just memorize*. You must develop the ability to apply mathematical concepts to solve a problem.
3. They cannot see the forest because of the trees. You should see the “big” picture, the forest, *before* you scrutinize the trees, branches, and leaves.

### **HOW TO STUDY MATH**

- Take good notes. A notebook for a summary of your class notes is highly recommended for this class. See discussion on Page 2 of this syllabus.
- Review class notes after class.
- Read the text.
- Get a study buddy.
- Have a scheduled time to do your math homework (as soon after class as possible).
- Go the Math Center to do your homework and to get help.
- Check out the online resources that are on my web page. ([www.irenewong.net](http://www.irenewong.net))
- Generate new “algebra” synapses. (More about synapses in class. In the meantime, check out the “Making Connections-The Synapse” link on the resource page of my web site.)

### **THE LOGIC OF PROBLEM SOLVING**

- Read the entire problem to get a general idea.
- Read the problem again, this time answer the following three questions.
  1. What is given?
  2. What am I asked to find?
  3. How am I going to do it?
- Draw diagrams whenever possible.
- After you have solved the problem, check your solution. Get used to doing this. One day your job or someone’s life may depend on whether you got the correct answer.

### **HOW TO STUDY FOR AN EXAM**

- Do your homework.
- As you do your homework make note of concepts and procedures that were difficult for you.
- Ask your instructor, tutor, classmate and/or your study buddy for assistance if you cannot do a problem or you do not understand a concept.

- Redo problems that you missed on quizzes or homework.
- Get a good night's rest before the day of the exam.
- Be sure to chill out after the exam. Rest your brain cells. Don't think about math for a couple of hours.

## **CIVILITY IN THE CLASSROOM**

*It is sad that the time has come for the need to discuss civility in a syllabus. Each semester, rudeness and lack of consideration for others is becoming more and more prevalent in the classroom—so much so that in fairness to the majority of the students in the class it is necessary to address civility in the classroom at the beginning of the semester.*

Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, students are prohibited from engaging in any behavior that is a distraction in any way to others in the class. Inappropriate behavior in the classroom shall result, *minimally*, in a request to leave class. Examples of disruptive behavior are listed below.

- **All cell phones must be turned off before you enter the classroom. If your cell phone goes off in class (either ringer mode or vibration mode), you must immediately leave the classroom and you will not be allowed to return for the remainder of the day's class. No cell phone may be visible to me at anytime. You may not use your cell phone for text messaging.**
- **Laptops and headsets of any type will not be allowed in class. Using a laptop to take notes is a distraction to those around you and if you wish to listen to music (or whatever) rather than to the day's discussion, do not bother to come to class.**
- **Integrity is expected of everyone in Allan Hancock College classes. If there is *any* indication of collaboration on quizzes or tests *all* of the collaborators will forfeit any grade on the quiz or test in question. In other words, *do your own work* and do not let anyone copy your work.**
- **Please respect your fellow students and the instructor by refraining from carrying on a conversation while someone is speaking. If you have a question, raise your hand and ask the instructor. Do not be rude to your fellow classmates or, to me.**
- **Please take care of *personal business* before you enter the classroom. Walking in and out of the room after the class has started is disruptive and annoying behavior. Please note that no one is allowed to leave the classroom for any reason during a test unless permission is requested, and granted.**

To end on a positive note, I hope this semester will be a productive one for all of us. I will do as much as I possibly can to help each of you achieve the COURSE GOALS that were listed at the beginning of this syllabus. Please see me *as soon as you need extra help*, or visit the Math Center which is in room **K20** (upstairs in the Business Building). I highly recommend that you try to do some of your homework assignments in the Math Center. You can get one-on-one help from student tutors, math instructors and from other calculus students who study in the Center. I will be in there during the hours that are listed on the first page of this syllabus.