

**Trigonometry — Fall Semester 2012**  
**Syllabus**  
Math 1613.06 TR 12:30 — 1:45 MSCS 422

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**Course Description**

As the name suggests, the point of this class is for you to learn about trigonometry (literally “triangle measuring”). This is an ancient mathematical subject (it was already being studied more than 2000 years ago) that continues to have many direct applications, as well as forming part of the basis for higher mathematical subjects like calculus and differential equations. The textbook is the 10<sup>th</sup> edition of “Analytic Trigonometry with Applications” by R. Barnett *et al.* The class will cover much of the book. You can find a detailed list of the sections that we shall discuss on the course schedule. You should read over each section before it is covered in class. There are several reasons for this: for example, it makes it easier to retain the material from the lectures, and it helps to focus classroom discussion. I will not always be able to cover everything in each section in class but, unless I tell you otherwise, you are still responsible for learning all the material in the sections that we discuss.

The background subjects for studying trigonometry are algebra and geometry. This means that you are going to have to remember and use algebra and geometry knowledge from earlier mathematics classes. If you are rusty on either of these subjects then you should begin trying to remind yourself about them now. There will be some review in class, but it will probably not be sufficient to teach you the subjects if you did not learn them properly the first time or have forgotten them.

**Grades**

Your grade in this class will be based on your performance on three preliminary exams, a final exam, in-class quizzes, and homework quizzes. You may also earn an attendance bonus. The weights of each of these categories are as follows:

EXAM 1	18%
EXAM 2	18%
EXAM 3	18%
FINAL EXAM	25%
QUIZZES	21%

ATTENDANCE BONUS UP TO 5%

The dates of the preliminary exams are shown on the course schedule, along with the chapters of the textbook that each exam covers. The final exam will be comprehensive. It will be held in AGH 361 on

Tuesday, December 11 from 4:00 — 5:50. There will be eleven quizzes in this class, five in-class quizzes and six homework quizzes. The dates are shown on the course schedule. The subjects covered by the quizzes are as follows:

Quiz 1	Background material (algebra, geometry, and calculator use)
Quiz 2	§1.3 (Trigonometric ratios and right triangles)
Quiz 3	§1.4 (Right triangle applications)
Quiz 4	§2.3 (Trigonometric functions: unit circle approach) and reference angles
Quiz 5	§3.2 (Graphing $y=k+A \sin(Bx)$ and $y=k+A \cos(Bx)$ )
Quiz 6	§3.3 (Graphing $y=k+A \sin(Bx+C)$ and $y=k+A \cos(Bx+C)$ )
Quiz 7	§4.2 (Verifying trigonometric identities)
Quiz 8	§4.3 (Sum, difference, and cofunction identities)
Quiz 9	§5.1 (Inverse sine, cosine, and tangent functions)
Quiz 10	§5.3 (Trigonometric equations: an algebraic approach)
Quiz 11	§§6.1&6.2 (Law of Sines and Law of Cosines)

The quiz score will be based on the best eight quizzes (the lowest three quiz scores will be dropped).

Class attendance is one of the strongest predictors of success (meaning a grade of C or better) in mathematics classes. Attendance will be taken every class period, beginning on Monday, August 27 and ending on Friday, November 30. If you miss no more than three class periods during this time then you will receive a 5% attendance bonus. This will be reduced by 1% for each absence beyond the third, to a minimum of 0% for eight or more absences. You must arrive on time and be present for the entire class period to be counted as present. Students with excused absences will be counted as present.

A total score of at least 90% will ensure an 'A', a score of at least 80% will ensure at least a 'B', a score of at least 70% will ensure at least a 'C', and a score of at least 60% will ensure at least a 'D'.

### **Calculators**

You will require at least a scientific calculator for this class. It should be able to evaluate the trigonometric functions (sine, cosine, tangent) of angles expressed in degrees or in radians and evaluate the inverse trigonometric functions ( $\arcsin$  or  $\sin^{-1}$  and so on). A more sophisticated calculator is permissible, but not necessary. The Mathematics Department has graphing calculators available for check out to students who are enrolled in mathematics courses. Note that you will not be permitted to use any device that can establish a connection to a cellular or wireless network during in-class quizzes and exams. This means, for example, that you cannot use a cellphone calculator app or a tablet computer at these times.

### **Missed Work**

The Mathematics Department suggests a policy on missed work, which I shall be following in this class. Here it is in full:

(A) Every student shall be offered reasonable accommodation in the event that he or she

misses a major assessment activity for a valid and documented reason.

(B) Appropriate documentation shall be provided by the student in a timely fashion to support his or her request for accommodation.

(C) Major assessment activities are those such that a zero on that activity could reasonably be foreseen to impact the student's grade substantially; this category includes, but is not limited to, exams.

(D) Valid reasons include official University activities, activities associated with military service, illness, family emergencies, mandatory court appearances, and any other events of comparable gravity.

(E) Reasonable accommodation means that the student will be given the opportunity to earn a grade on the assessment activity that is based on criteria as similar as possible to those used to grade his or her classmates. This opportunity should normally be made available in a timely fashion.

What all this means is that if you have to miss a quiz or exam for a *serious* reason, *and you are able to provide acceptable documentation verifying that reason*, then you will be allowed to make up the missed work. If you have a scheduled University activity (like a field trip or sporting event) then it is normally best to do this beforehand. I try to be flexible and fair, so if you encounter an unusual circumstance then it is worth at least asking about make-up work, although I might say no.

### **D2L and E-Mail**

I use OSU's online classroom (D2L) to post important information about the class. I suggest that you add a little basic information to your D2L profile, particularly if you are interested in studying with other students in the class. I use email to contact individual students and the class as a whole. This means that you must check your OSU email regularly. If you prefer to use another email address then you should arrange to have your OSU email forwarded to that address.

### **The MLSC**

The MLSC ("Mathematics Learning Success Center") is currently located on the fourth floor of the Classroom Building (CLB). The Information Desk is in CLB 420. You can find the MLSC home page at the URL <http://www.math.okstate.edu/mlrc/>. This center offers free tutoring services for classes up to Linear Algebra.

### **Miscellaneous Information**

You should read the syllabus attachment for Fall 2012, which I shall post on D2L. This is a document that outlines some of the general academic policies of the University, as well as listing important dates.

You are subject to the University's policy on academic integrity. Information about this policy may be reached from the Division of Academic Affairs web page at <http://academicaffairs.okstate.edu/>.

Trigonometry- Fall 2012 Schedule

	Tuesday	Thursday
Week 1	08/21 §§1.1, 1.2	08/23 HW Quiz 1 due, §§1.2, 1.3
Week 2	08/28 §§1.3,1.4	08/30 Quiz 2 in class, §§1.4
Week 3	09/04 §§2.1 Quiz 3 in class	09/06 § 2.3
Week 4	09/11 §§2.3, 2.5	09/13 §§2.5, 7.1 HW Quiz 4 due
Week 5	09/18 §7.1	09/20 §3.1 Review for Exam 1
Week 6	09/25 Review for Exam 1 <b>Exam 1</b> (Chapters 1 & 2, §7.1)	09/27 §§3.1, 3.2
Week 7	10/02 §§3.3 Quiz 5 in class	10/04 §4.1
Week 8	10/09 §§4.2 HW Quiz 6 due	10/11 §4.2, 4.3
Week 9	10/16 §§4.3 Quiz 7 in class	10/18 §§4.4
Week 10	10/23 §4.4 HW Quiz 8 due, Review for Exam 2	10/25 Review for Exam 2 <b>Exam 2</b>
Week 11	10/30 §5.1	11/01 §5.3
Week 12	11/06 §§5.3, 6.1 Quiz 9 in class	11/08 §§6.1
Week 13	11/13 §§6.2 HW Quiz 10 due	11/15 §6.3
Week 14	11/20 §6.4	11/22 University Holiday
Week 15	11/27 §6.4, 6.5 HW Quiz 11 due, Review for Exam 3	11/29 Review for Exam 3 <b>Exam 3</b> (Chapters 5 & 6)
Week 16 Pre-Finals Week	12/04 §6.5, Review for Final Exam	12/06 Review for Final Exam
Week 17	<b>12/11 FINAL EXAM</b> <b>AGH 361 4:00-5:50 pm</b>	