

SYLLABUS

Mathematics 141 AB Plane Trigonometry

Dr. G. Bart
Summer 2006

Course Description: Definition of trigonometric functions, graphs of trigonometric functions and their inverses. Applications to triangles, laws of sines and cosines, trigonometric identities, equations, vectors, and verbal problems. Complex numbers in trigonometric form and De Moivre's Theorem. Calculators will be used. Writing Across the Curriculum (WAC) assignments will be required as appropriate to the topics.

Prerequisite: Concurrent enrollment or C or better in Math 140 or Placement Test or consent of Department Chairperson.

Meeting Time: Mon. & Wed., 9:00 am - 11:50 pm in Rm. 3833 and, occasionally, 3186.

Required Text etc.: **Analytic Trigonometry with Applications, 8th Ed., by Barnett, Zigler, and Byleen, John Wiley & Sons, Inc., 2003.** *Other supplies needed:* A pocket scientific calculator having all functions. You are expected to know how to use your calculator. If you don't know how to use your calculator, then learn how to use it during the first weeks of class. Please, carry it and your text with you to class, *always!* You will be asked to use them in class. Use of a graphing calculator is strongly encouraged and allowed but is not required.

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Interactive Course Links Website: <http://faculty.ccc.edu/tr-scimath/>
Textbook Website: <http://www.wiley.com/college/barnett>

Office Hours: MW 11:50-12:25 pm

Math 141 AB Summer 2006 Schedule

Week	Date (Mon)	Lesson	Chapter (pages)	Date (Wed)	Lesson	Chapter (pages)
1	5-Jun	Registration	No class; GET BOOK!	7-Jun	1	Intro. & Appendix C (5)
2	12-Jun	2	1 (35)	14-Jun	3	2 (19) Q1 Ch 1
3	19-Jun	4	2 (53) & Append. B (12)	21-Jun	5	3 (37) Q2 Ch 2
4	26-Jun	6	3 (35)	28-Jun	7	4 (37) Q3 Ch 3
5	3-Jul	8	4 (11)	5-Jul	9	Midterm Exam Ch 1-3
6	10-Jul	10	5 (24) Q4 Ch 4	12-Jul	11	5 (13)
7	17-Jul	12	6 (27) Q5 Ch 5	19-Jul	13	6 (32) & 7 (13)
8	24-Jul	14	Review & Q6 Ch 6 & 7	26-Jul	15	Review & Final Exam

Pages are rough approximations. Lesson coverage will spill over the days.

ADDITIONAL COURSE INFORMATION
Mathematics 141 Plane Trigonometry - DR. BART

ASSIGNMENTS & HOMEWORK

A standing assignment is to read the current textual material before coming to class, as stated in the course outline and as handed out in class. Additional assignments may be given out at appropriate times. All homework is to be done at home after you have studied the chapter. Doing homework problems will enormously increase your chances of success in this class. It typically will consist of doing weekly problems. If you miss a class you will need to request, any handouts or homework assignments you missed. If homework problems are to serve their purpose, you should do them alone. Bring them to the next session so that we may discuss any points you don't understand. The weekly assignment provides a check of how well you are studying.

Because you will encounter a large number of definitions in this course that will probably be new to you, I suggest that you keep good notes or at least a vocabulary list of the new words you encounter and their meanings. The notes will be an aid in reviewing for exams. It is important not to get behind on memorizing the meaning of words and concepts new to you. Otherwise, the end of the course will overwhelm you.

EXAMS

There will be six quizzes at the end of six of the sessions plus summative midterm and final exams. The problems on the quizzes and exams will be similar to homework and other problems solved in class. Most, but not all, of the questions on the quizzes and longer exams will be multiple choice. Sometimes extra credit opportunities will be available. Of the six quizzes, the one with the lowest score will be dropped. The quizzes and the exams will be weighted in the computation of the final score as follows:

5 quizzes.....	50%
Midterm exam.....	20%
Final exam.....	30%

GRADING

Grades will be determined by the following system. For performance reference the individual activities can be graded on a raw score percentage scale.

F = less than 45%
D = 45 - 54%
C = 55 - 64%
B = 65 - 74%
A = 75% or above

ATTENDANCE

A student with more than 3 absences and a current test average below D will be given an automatic F. **No make-ups will be allowed for missed quizzes!** In the event that you miss any quiz, a grade of zero will be entered for it. A make-up test for a missed major exam may be allowed, **depending upon a very serious excuse and a promptly made appointment** with the teacher.

NOTE

Students who would like to have their final grade mailed to them in advance of the official Truman notification may include a stamped, self-addressed envelope when turning in the final exam. No grade information will be given out over the telephone or by email because of privacy concerns. Official midterm and final grades are not mailed. They may be seen online at <http://my.ccc.edu>.

Math 141AB Homework Assignments- Summer 2006

Text: Analytic Trigonometry with Applications, 8th Ed., by Barnett, Zigler, & Byleen, John Wiley & Sons, Inc., 2003.

Section	Page	Recommended Problems	Topic
Chapter 1: Right Triangle Ratios			
1.1	10	1, 3, 5, 9, 10, 11, 15, 19, 23, 25, 27, 39, 41, 45, 47, 49, 51, 53, 55, 57.	Angles, Degrees, and Arc
1.2	18	3,5,13,15, 23.	Similar Triangles
1.3	29	1 - 12 all, 13 - 27 odd, 31, 37, 41, 45, 53, 57, 61.	Trigonometric Ratios and Right Triangles
1.4	35	1, 3, 7, 13, 15, 19, 25, 31, 33.	Right Triangle Applications
Review	44	1, 2, 9, 13, 15, 21, 23, 27, 31, 35, 36.	Chapter 1 Review
Chapter 2: Trigonometric Functions			
2.1	59	1 - 29 odd, 37, 43, 45, 59, 61, 62, 67, 77, 83.	Degrees and Radians
2.2	67	1, 7 - 23 odd.	Linear and Angular Velocity
2.3	77	1 - 73 odd, 73, 86, 89.	Trigonometric Functions
2.4	91	Will not be covered.	Additional Applications
2.5	102	1 - 59 odd, 65.	Exact Value for Special Angles and Real Numbers
2.6	113	1- 23 odd, 53 - 63 odd, 67 - 73 odd.	Circular Functions
Review	122	1, 5, 7, 8, 14, 15, 17, 19, 21, 27, 35 - 41 odd, 48, 49, 53, 55.	Chapter 2 Review
Chapter 3: Graphing Trigonometric Functions			
3.1	141	1, 2, 5, 7, 9, 11, 12, 15 - 20 all, 21, 23, 25, 27.	Basic Graphs
3.2	152	1 - 15 odd, 23 - 33 odd, 51, 57, 59.	Graphing $y = k + A \sin Bx$ and $y = k + A \cos Bx$
3.3	165	3, 5, 7, 11, 15, 17, 19, 41, 41, 43.	Graphing $y = k + A \sin(Bx + C)$ and $y = k + A \cos(Bx + C)$
3.4	181	1, 3, 5, 10, 15.	Additional Application
3.5	190	3, 5, 13, 15, 23, 24.	Graphing Combined Forms
3.6	201	1 - 4 all, 5, 7, 9, 19, 21.	Tangent, Cotangent, Secant, and Cosecant Functions Revisited
Review	207	7, 9, 14, 15, 21, 22, 27, 29, 33.	Chapter 3 Review
Summary Review	211	5, 7, 18, 19, 23, 24, 27, 32, 35, 44, 47, 52.	Cumulative Review Chapter 1-3
Chapter 4: Identities			
4.1	223	3, 4, 5 - 27 odd, 31 - 39 odd.	Fundamental Identities and Their Use
4.2	232	1 - 33 odd, 37 - 59 odd, 71.	Verifying Trigonometric Identities
4.3	241	1, 5, 11 - 23 odd, 24, 25 - 31 odd, 32, 34, 35, 36, 38, 39, 40, 43, 49.	Sum, Difference, and Cofunction Identities
4.4	250	1, 3, 5, 6, 7, 9, 13 - 21 all, 23 - 27 all, 29 - 37 odd, 41, 49, 53, 55 - 59 all, 70, 71.	Double-Angle and Half- Angle Identities
4.5	260	1, 2, 5 - 27 odd.	Product-Sum and Sum-Product Identities
Review	267	3 - 11 odd, 17, 19, 27 - 37 odd, 43, 51, 69.	Chapter 4 Review
Section	Page	Recommended Problems	Topic

Chapter 5: Inverse Trigonometric Function, Trigonometric Equations and Inequalities

5.1	287	1 - 21 odd, 27, 41, 43, 45, 57, 61, 63, 71, 73.	Inverse Sine, Cos, and Tan Functions
5.2	295	1 - 11 odd, 17, 19, 23, 31, 33, 39, 43, 57, 59.	Inverse Cot, Sec, and Cosec Functions
5.3	301	3, 5, 7, 15, 17, 18, 21 - 31 odd, 39.	Trigonometric Equations
5.4	308	1, 3, 9, 11, 12, 17, 29.	Trigonometric Equations and Inequalities
Review	313	1, 3, 5, 11, 15, 19, 21, 27, 39, 43, 49, 61, 69.	Chapter 5 Review
Summary Review	316	5, 11, 15, 18, 27, 29, 35, 37, 39, 41, 44, 45, 55, 57, 80, 86.	Cumulative Review Chapters 1-5

Chapter 6: Additional topics - Triangles and Vectors

6.1	332	3, 5, 7, 11, 13, 15, 17, 23, 35, 37, 47.	Law of Sines
6.2	342	1 - 11 odd, 15, 23, 27, 29, 37, 39, 41, 51.	Law of Cosines
6.3	350	1 - 13 odd.	Area of Triangles
6.4	357	1 - 7 odd, 13, 15, 19, 23.	Vectors: Geometrically Defined
6.5	369	1 - 7 odd, 10, 12, 9 - 33 odd.	Vectors: Algebraically Defined
6.6	379	1 - 19 odd.	The Dot Product
Review	388	5, 7, 21, 28, 29, 45, 49, 50.	Chapter 6 Review

Chapter 7: Polar Coordinates; Complex Numbers

7.1 - 7.2	401 & 412	1 - 25 odd.	Polar Coordinates & Sketching Polar Equations
7.3	421	1 - 27 every other odd, 25, 27.	Complex Numbers in Rectangular & Polar Forms
7.4	427	1 - 11 odd.	De Moivre's Theorem
Review	433	On your own.	Chapter 7 Review
Summary Review	434	On your own.	Cumulative Review Chapters 1-7

Note: The sequence of covering topics and the assignments may be adjusted at the discretion of the instructor.

5/31/06