

Professor: David McClendon (2046 ASC, phone x2574 (231-591-2574 off campus), hours M 1-2, W 1-2, W 3-4 or by appointment, email: mccclend20ferris.edu)

Lectures: Section 4 meets MWF 11:00-11:50 AM in STR 120.

Section 5 meets MWF 12:00-12:50 PM in STR 212.

Prerequisite: Math 115 (or equivalent) with a grade of C- or better; or a sufficient score on a standardized test or placement exam.

Web: <http://mccclendonmath.com/120.html> contains the lecture notes, old exams, and other information.

Required materials: You need three things for this course:

- The textbook *Trigonometry*, 10th edition, by Lial, Hornsby, Schneider and Daniels, ISBN 0-321-67177-5. You do not need to bring your textbook to class.
- My lecture notes, which can be obtained from my web page (as a pdf) or at the first day of class (they will be handed out). Bring the lecture notes every day, as they contain the examples we use in class.
- A calculator that has [SIN], [COS] and [TAN] buttons on it. It does not matter if it is a graphics calculator. You should bring your calculator to class. **You may not use your cell phone as a calculator on quizzes or exams.**

Other recommended materials: I recommend a three-ring binder to hold the lecture notes and other handouts. I also recommend bringing a couple of colored pens or pencils to class each day, as some of the pictures we will draw to explain concepts are much more easily understandable when drawn in color. A protractor, ruler and/or scissors may also be helpful.

Course material: Angles; trigonometric functions; solutions of triangles; manipulation of trig expressions using identities.

Learning outcomes: After completing Math 120, it is my hope and expectation that students will be able to:

1. solve abstract and practical problems involving angle measures, angle measurements, circular arc length, areas of circles, sectors and triangles, linear velocity and angular velocity;
2. evaluate trigonometric functions (by hand at special angles; otherwise with a calculator);
3. solve triangles;
4. sketch and interpret the graphs of trigonometric functions (including shifts of sine and cosine graphs); and
5. verify trigonometric identities and use them to manipulate expressions and solve problems.

Grading policy: Class participation/in-class activities: 10%. Quiz average: 10%. First midterm exam: 15%. Second and third midterm exams: 20% each. Final exam: 25%. Grades will be curved at the end of the semester, but an average of 90% guarantees you at least an A-, an average of 80% guarantees you at least a B-, etc.

Attendance policy: I have no formal attendance policy. That said, **nothing** is more correlated with strong performance in my classes than attendance in lectures.

Recommended Homework: The attached course calendar contains a list of problems from the textbook which I strongly recommend that you do (even though it will not be collected). Extensive practice with homework problems is the best preparation for quizzes and exams.

Quizzes: There will be fourteen quizzes on the dates listed on the course calendar (I reserve the right to change these dates if necessary). These are ≤ 10 minutes long and *always cover the material that has been covered in class since the previous quiz or exam*. Whether or not a calculator is permitted depends on the quiz content. The lowest four quizzes are dropped; the other ten are averaged to give your quiz average. Makeup quizzes are not given under any circumstances (you have to use one of your four drops).

Midterms: There are three midterms, on **Wednesday, September 13**, **Friday, October 13** and **Wednesday, November 15**. Each test is divided into two parts, where on one part you may not use a calculator and on the other part you will need a calculator. You may not use notes, the book, or other study aids on the exams. Midterms are not directly cumulative, but mathematics is “inherently cumulative”.

You may make up an exam that you miss (whether your absence is excused or not) but the makeup exams are considerably more difficult. If you miss an exam, contact the professor; you are to make up the exam at the *earliest possible time*.

Final exam: The final exam is cumulative, and like the midterms, has a part where you cannot use a calculator and a part where you need a calculator.

Getting help: The best place to receive help is my office. In class, I will not have time to take many homework questions, and I will not be able to present all perspectives on a topic. In office hours, I am able to discuss the material at a much more friendly pace and offer some alternate viewpoints that may help you understand the material better.

If you cannot make my scheduled office hours, you can come talk to me anytime my office door is open. Also, I am more than happy to make an appointment to discuss the material with you. Send me an email.

Additionally, the Math Club holds weekly tutoring sessions in FLITE (times and locations of these will be announced later) and the Academic Support Center offers free tutoring as well (search for “Academic Support Center” on the Ferris website).

Students with disabilities who require reasonable accommodations to fully participate in course activities or meet course requirements should register with the Educational Counseling and Disability Services office (x3057, ecds@ferris.edu). While ECDS will send me a letter outlining the accommodations to make for you, I would appreciate it if you could contact me immediately for assistance with any necessary classroom accommodations.

Academic dishonesty: Papers will be monitored for “magic answers”. Issues with academic dishonesty are taken very seriously, will almost always result in an F for the class, and will be referred to the Office of Student Conduct.

DATE	QUIZ / EXAM	SECTION(S)		TOPIC AND RECOMMENDED HOMEWORK PROBLEMS
		TEXT BOOK	LECTURE NOTES	
M 8.28			1.1-1.2	Algebra and solving equations Homework Set A: 1-2
W 8.30		App. C	1.3-1.4	Coordinate plane and functions Homework Set A: 3-6 Homework Set B
F 9.1	Q1	1.1	2.1-2.2	Angles §1.1: 1,5,13,14,15,19,21,23,24,77,79,81,83,87,89,91,93,95
M 9.4				<i>No class - Labor Day</i>
W 9.6		3.1	2.2-2.3	Radian measure and applications §1.1: 107,109,111,113,115,117,118,119,121,128,129,130 §3.1: 1,3,5,7,9,11,13,15,19,29,21,29,31,33,37,39,45,47,51,57, 61,63,87
F 9.8	Q2	3.2, 1.2	2.3-2.4	Angular and linear velocity; angle relationships §3.2: 3,5,9,11,15,29,31,32,35,43,45,51,55,57,59,63,64,66,67,71 §1.2: 3,5,9,11,13,25,28,29,30,31,33
M 9.11	Q3		2.4	Angles in polygons Homework Set C
W 9.13	E1			EXAM 1: covers 1.1-1.2, 3.1-3.4
F 9.15		2.1	3.1	Introducing sine and cosine §2.1 (only compute sin and cos): 1-4, 11-19
M 9.18	Q4	1.3	3.1	Definition of sine and cosine §1.3 (only compute sin and cos) 1,3,5,7,11,13,15,19,57,58,63, 64 §2.1: 57,60 §3.3: (only compute sin and cos) 1,2,3,4,5,6,15
W 9.20		2.3, 3.3	3.2	More on sine and cosine §2.3: 17,18,20,25,26,31,32,39,41,47-54 §3.3: 22,23,24,25,26,43,44,56,57,73,74,75
F 9.22	Q5		3.2	Basic trig identities
M 9.25			3.3	Sines and cosines of special angles
W 9.27	Q6	2.4	3.4	Solving right triangles §2.4: 9,11,13,15,21,27,29,31,41,42,43,48,50,52,53,54
F 9.29		7.1	3.5	Law of Sines §7.1: 3,4,7,11,17,32,33,34
M 10.2	Q7	7.2	3.5	Law of Sines (ambiguous case) §7.2: 11,13,15,17,19,21,23,27,29,35
W 10.4		7.3	3.6	Law of Cosines §7.3: 9,11,13,15,17,21,31,35,40,45,53,59
F 10.6				Review of solving triangles §7.1: 15,25,31 §7.2: 12,18,25,28 §7.3: 19,23,39

DATE	QUIZ / EXAM	SECTION(S)		TOPIC AND RECOMMENDED HOMEWORK PROBLEMS
		TEXT BOOK	LECTURE NOTES	
M 10.9	Q8	7.1, 7.3	3.7	Area formulas for triangles §7.1: 39,41,43,45,47,49 §7.3: 65,69,70
W 10.11				Review for Exam 2
F 10.13	E2			EXAM 2: covers 1.3, 2.1-2.4, 3.3, 7.1-7.3 (only sines and cosines; no tan/sec/cot/csc)
M 10.16		1.3, 3.3	4.1	General definitions of the trig functions §1.3 (all six trig functions): 1,3,9,11,17,59,61,62,66,72,73,74 §3.3 (all six trig functions): 1,3,5,55,69,70
W 10.18		1.4	4.1	Signs of the trig functions §1.4: 1,2,3,5,19,21,31,33,35,45,47,48,61,63,71 §3.3: 77,79 §5.1: 1,3,5,7,9,13,31,35,37
F 10.20	Q9		4.2	Ranges of the trig functions; basic trig identities
M 10.23			4.2	Finding all trig functions if given one
W 10.25	Q10	2.2	4.3	Trig functions of special angles §2.2: 11,13,15,17,21,23,27,38,41,43 §3.3: 7,9,11,13,15,17,19
F 10.27			4.3	More on the trig functions of special angles
M 10.30	Q11		4.4	Solving diagrams with trig expressions Homework Set D
W 11.1				Review of the trig functions
F 11.3	Q12	7.4	5.1	Introduction to vectors §7.4: 5,7,9,11,19,21,25,27,33,34,35,37,41,43,45,59,61,63,71, 73,77,79,83,85,87,89
M 11.6	Q13		5.2	Vector operations
W 11.8		7.4	5.2	Applications of vectors §7.4: 49,52 §7.5: 1,2,7,8,9,15,17
F 11.10		7.5	5.2	Dot products
M 11.13	Q14			Review for Exam 3
W 11.15	E3			EXAM 3: covers Chapters 1 and 2 and Sections 7.4-7.5
F 11.17		5.1-5.2	6.1	Verifying trig identities §5.1: 39-48, 59,61,63,65,67,71,73,77,79,83 §5.2: 1,2,3,7,23,25,27,29,30,31,33,35,37
M 11.20		5.3-5.4	6.2	Sum and difference identities §5.3: 7,10,57,59 §5.4: 9,11,13,15,51,53,54
W 11.22				<i>No class - Thanksgiving break</i>
F 11.24				<i>No class - Thanksgiving break</i>

DATE	QUIZ / EXAM	SECTION(S)		TOPIC AND RECOMMENDED HOMEWORK PROBLEMS
		TEXT BOOK	LECTURE NOTES	
M 11.27	Q15	5.5-5.6	6.2	Double and half-angle identities §5.5: 7,9,13,15,19,21,23,27,29
W 11.29		5.5-5.6	6.2	More with trig identities
F 12.1			7.1	The graphs of $y = \sin x$ and $y = \cos x$
M 12.4		4.1-4.2	7.1	Shifted graphs of sine and cosine (with shifts) §4.1: 1-12,13,14,17,18,21,23,27,28,30,31
W 12.6	Q16	4.2-4.4	7.2	Graphs of tan, cot, sec, csc §4.2: 25,26,27,33,35,45,47,53,55 §4.3: 2-6 §4.4: 1-4
F 12.8				Review for Final
				FINAL EXAM: covers the entire semester 11 AM section: R 12.14 at 10:00-11:40 AM in STR 120 12 PM section: M 12.11 at 12-1:40 PM in STR 212