

Professor: David McClendon (2046 ASC, phone x2574 (231-591-2574 off campus), hours 1-2 MW, 12-1 TR or by appointment, email: mcclend2@ferris.edu)

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

Section 6 meets TR 4:30-5:45 PM in STR 137.

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.

Materials you need: Three items:

- **Required:** My lecture notes, which can be obtained from my web page (as a pdf) or as a course pack at the bookstore. Bring the lecture notes every day, as they contain the examples we use in class.
- **Required:** 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.**
- **Strongly Recommended:** The textbook *Trigonometry*, 8th edition, by McKeague & Turner (ISBN 978-1305652224). The online version or an earlier edition is a perfectly good substitute.

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: Attached to this syllabus is a list of problems from the McKague 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 attached 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 midterm exams, on the dates listed on the attached course calendar. 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 (ASC 1017, x3543, asc@ferris.edu) offers free tutoring as well.

To schedule an appointment with a tutor, you can use the online scheduling tool Tutor-Trac (located within the “Academic Support” link on MyFSU).

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 (STR 313, 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.

WEEK	TOPICS WE SHOULD FINISH (Sections from my notes)	CORRESPONDING HOMEWORK PROBLEMS (Sections from the textbook)
Week 1: 8.27-8.31	1.1: Algebra review	A.1: 9,10,11,13,16,19,27
	1.2: Review of equations	A.1: 79,81,83,87,89 Homework Set A (on my web page)
	1.3: The coordinate plane	1.2: 9,11,12,17
	1.4: Intro to functions	Homework Set B (on my web page) A.3: 15,16,17,19,21,35,37,38,43,45,47,49,50
	2.1: Intro to trigonometry	None
Week 2: 9.4-9.7 (No class on M)	2.2: Angles	1.1: 9,11,12,13,23,24,25,26
	2.3: Radian measure	3.2: 13ab,14ab,15ab,17ab,19ab,20ab,24,45ab,46ab, 47ab,48ab,50ab,51ab,53,55 3.4: 5,7,9,13,15,17,21,31,33,37,43,45,51,57,60,61 3.5: 5,7,11,17,21,23,25,29,31,39,41,45,51,63,64,65
Week 3: 9.10-9.14	2.4: Angle relationships	Homework Set C (on my web page) A.2: 9,10,11,12,25,26 1.2: 61,63,65,69,70,71
	EXAM 1	covers 1.1-2.4 in my lecture notes
Week 4: 9.17-9.21	3.1: Intro to sine and cosine	2.1: (only compute sines and cosines) 5,9,11,14,15, 17,25,26,29,32 2.2: 33,34,35,36
	3.2: More on sine and cosine	1.3: (only find sines and cosines) 5,6,9,11,14,17,19, 21,25,26,28,29,35,43,45,71,72,75,76 2.2: 55,56,59,79 3.2: 57,58,65,66 3.3: 7,13,14,71,72
Week 5: 9.24-9.28	3.3: Special angles	3.3: (only find sines and cosines) 8,19,20,21,22,23, 24,25,26 1.3: (only find sines and cosines) 23,24,25,27,29,30
	3.4: Solving right triangles	2.3: 9,11,15,19,21,33,49,51,53 2.4: 17,19,21,23,33,34,38
Week 6: 10.1-10.5	3.5: Law of Sines	7.1: 15,17,18,21,22,31,39 7.3: 11,12,13,14,19,20,22
	3.6: Law of Cosines	7.2: 11,19,21,22,24,25,31,39,43,45
Week 7: 10.8-10.12	3.7: Area of a triangle	7.4: 11,13,19,23,24,25
	EXAM 2	covers 3.1-3.7 in my lecture notes

WEEK	TOPICS WE SHOULD FINISH (Sections from my notes)	CORRESPONDING HOMEWORK PROBLEMS (Sections from the textbook)
Week 8: 10.15-10.19	4.1: Trig functions	1.3: (find all six trig functions) 5,7,9,12,13,17 1.4: 13,14,15,19,21 2.2: 33,37,38,39,40,41,42,43,55,57,59,61,63,65 3.1: 33,35,37,38,39
	4.2: More on trig functions	1.3: 43,44,45,47,51,52,53,54,55,59,63,65 1.4: 39,45,49,55,57
Week 9: 10.22-10.26	4.3: Special angles	3.1: 17,19,21,22,23,25,26,27,39,30,31,32 2.1: 35,36,37,39,43,44,53,54,55,56,57,59,61,62, 63,64 3.2: 45c,47c,48c,49c,57,58,59,61,62,63,65,67
Week 10: 10.29-11.2	4.4: Solving trig diagrams	Homework Set D (on my web page)
	5.1: Intro to vectors	None
Week 11: 11.5-11.9	5.2: Vector operations	7.5: 11,13,27,29,30,35,39,41,45,47,55,57,59,61,69 7.6: (Note: the vector " $ai + bj$ " means $\langle a, b \rangle$) 9, 10,11,23,25,27,29
Week 12: 11.12-11.16	6.1: Verifying trig identities	1.5: 13,14,15,17,21,25 5.1: 15,20,21,39,47,51
	EXAM 3	covers 3.1-5.2 in my lecture notes
Week 13: 11.19-11.20 (No class on WRF)	6.2: Sum/difference identities	5.2: 9,10,11,13,14,43,44,47
Week 14: 11.26-11.30	6.3: More trig identities	5.3: 7,11,15,17,18,19,35,36,39,40 5.4: 23,24,27,28,31,37
Week 15: 12.3-12.7	7.1: Sinusoidal graphs	4.2: 27,29,30,31,35,37,45,47 4.3: 9,11,13,25,27,30,31,41,53
	7.2: Other trig graphs	4.1: 19,20,21,22,23,24
FINAL EXAM (cumulative)	Section 5 (MWF 12:00 PM): M 12.10 at 12:00-1:40 PM in STR 212 Section 6 (TR 4:30 PM): R 12.13 at 4-5:40 PM in STR 137	

DATE	SECTION 5 (MWF 12)	SECTION 6 (TR 4:30)
M 8.27 T 8.28 W 8.29 R 8.30 F 8.31	Quiz 1	Quiz 1
M 9.3 T 9.4 W 9.5 R 9.6 F 9.7	(No class) Quiz 2	Quiz 2
M 9.10 T 9.11 W 9.12 R 9.13 F 9.14	Quiz 3 EXAM 1	Quiz 3 EXAM 1
M 9.17 T 9.18 W 9.19 R 9.20 F 9.21	Quiz 4	Quiz 4
M 9.24 T 9.25 W 9.26 R 9.27 F 9.28	Quiz 5	Quiz 5
M 10.1 T 10.2 W 10.3 R 10.4 F 10.5	Quiz 6	Quiz 6
M 10.8 T 10.9 W 10.10 R 10.11 F 10.12	Quiz 7 EXAM 2	Quiz 7 EXAM 2
M 10.15 T 10.16 W 10.17 R 10.18 F 10.19	Quiz 8	Quiz 8

DATE	SECTION 5 (MWF 12)	SECTION 6 (TR 4:30)
M 10.22 T 10.23 W 10.24 R 10.25 F 10.26	Quiz 9	Quiz 9
M 10.29 T 10.30 W 10.31 R 11.1 F 11.2	Quiz 10	Quiz 10
M 11.5 T 11.6 W 11.7 R 11.8 F 11.9	Quiz 11 Quiz 12	Quiz 11 Quiz 12
M 11.12 T 11.13 W 11.14 R 11.15 F 11.16	EXAM 3	EXAM 3
M 11.19 T 11.20 W 11.21 R 11.22 F 11.23	(No class) (No class)	(No class) (No class)
M 11.26 T 11.27 W 11.28 R 11.29 F 11.30	Quiz 13	Quiz 13
M 12.3 T 12.4 W 12.5 R 12.6 F 12.7	Quiz 14	Quiz 14
M 12.10 T 12.11 W 12.12 R 12.13 F 12.14	FINAL	FINAL