

SYLLABUS for MATH 1405-1M (344395)

PRECALCULUS TRIGONOMETRY

3 credit hours, Fall 2021

Class Time: MWF from 12:00 to 12:50 pm in SM 104.

Instructor: Mr. Neil Waite

Office: SM 128

Email: neil.waite@nwc.edu (or use Moodle)

Office Phone: 307-754-6141

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Office Hours Zoom Meeting ID: 961 7599 4321

Password: Office

OFFICE HOURS: Monday to Friday from 9:00 am to 10:50 am

I am willing to visit with any of you face-to-face in my office (or through Zoom). In particular, we can talk through specific problems together. Sometimes a short visit can prevent a lot of frustration and you may find that you are not as lost as you think you are. **There will be also be a link you can use to join my Zoom office hours in our Moodle course shell.** I can also be available at other times, just let me know and we will arrange a time

Text: Good news: your textbook for this class is available for free online, in web view and PDF format! You can also purchase a print version, if you prefer, OpenStax on Amazon.com.

If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Precalculus from OpenStax, ISBN 1938168348, www.openstax.org/details/precalculus

Student Portal: You may access a variety of information (such as Moodle) by logging into the student portal at <https://my.nwc.edu>. On Moodle, you can ask/answer homework questions and I will post your grades, class notes, and other information.

Class Workbooks: Each student will have the opportunity to obtain a course workbook at the beginning of the course free of charge. These workbooks contain the examples that we will be working through in the classroom discussions. You do not need to return these booklets and they are intended to be written in. Most students find these workbooks helpful (and they save me a lot of extra writing and from getting sidetracked in the course). I will post a copy of the class notes from the in-class lectures on Moodle.

Catalog Course Description: Students will use the functional approach to trigonometry and gain a basic understanding of computations, applications, identities, inverse functions, and the analytic geometry of trigonometric functions. Credit cannot be earned in both MATH 1405 and MATH 1450. Prerequisite: A grade of “C-” or better in MATH 1400 or placement at math level 4 within one year prior to enrollment. (3 hrs lec)

This course fulfills the Quantitative Reasoning General Education Outcome

This course also fulfills some of the **math specialization** outcomes. In particular, students will

- Model motion using vectors (part of #4).
- Create and analyze mathematical models (#5).

The above outcomes will be evaluated via tests and homework assignments.

Student Learning Outcomes: Upon successful completion of this course, students will:

- Be proficient in working in radian and degree mode.
- Explore the unit circle and right triangle trigonometric definitions of trigonometry.
- Examine the graphs of trigonometric functions
- Investigate inverse trigonometric functions
- Apply trigonometry in various applications
- Explore how to use trigonometric identities
- Apply the law of sines and cosines
- Experience an introduction to vectors

Students will show mastery of these topics by being able to solve homework and test questions.

HOMEWORK (15% OF TOTAL GRADE): We will be using “Rover” by OpenStax to complete the homework for this class. There is a fee of \$22 to use Rover for this course. This is very economical when compared to most textbooks or online homework sites. Each section that we cover will have a homework assignment using Rover. There will be a link on our Moodle Course Page that you will need to click on to enter Rover the first time. After that, you should be able to bookmark the site. The due dates for each assignment will be listed on Rover and I can adjust then as needed. If you start getting behind on the homework, please chat with me, as you don’t want to get too far behind on the homework. If you have a **legitimate** reason for getting behind, please visit with me as I can extend the homework deadlines for you. I will drop your two lowest homework scores. In general, students who do their homework do better on their tests. **Please plan on setting aside a set block of time during which you can work on this class (the recommend formula is 2 hours outside of class for every 1 hour in class).**

Tests: I plan to have 5 unit tests (65% of total grade). The tests will always be announced in advance. Please let me know, (in advance if possible in person or via email, phone, voice mail, or text) if you have a legitimate reason for missing a test. A late penalty (10% per school day late) may be assessed if you take the test late. I do not give test retakes. **The FINAL EXAM (20% of total grade) will cover topics throughout the semester and will be given on Friday, December 17, from 7:30 to 9:20 am.**

Grades: It is anticipated that points will be accumulated as follows:

- **Homework (two lowest scores dropped) (15%)**
- **Unit Tests (65%)**
- **Final Exam (20%)**
- Total (100%)**

Grades will be assigned as indicated in the table below (**x is your final percent**). At the end of the semester, I may slightly adjust this scale. However, if I do so, it will only raise your grade and not lower it.

	B+ $88 \leq x < 90$	C+ $78 \leq x < 80$	D+ $68 \leq x < 70$
A $x \geq 92$	B $82 \leq x < 88$	C $70 \leq x < 78$	D $60 \leq x < 68$
A- $90 \leq x < 92$	B- $80 \leq x < 82$		F $x < 60$

Technology: Some of the problems throughout the semester (in class and on your homework) involve graphing calculators. I do not require a graphing calculator but it would be helpful to have one (especially if you will be taking additional math courses later on). Calculators are not allowed on some of the tests. **PHONES, TABLETS, OR OTHER SIMILAR ELECTRONIC DEVICES WILL NOT BE ALLOWED ON ANY OF THE TESTS.** Some tests may be split into two parts (calculator and no calculator). The library may have some graphing calculators available for checkout. Students who do not have a graphing calculator may consider trying one of the many apps available for electronic devices for use on their homework. **Students should learn to use technology as a tool but not as a crutch.**

TIME: Please plan on spending sufficient time on this course. For almost all students, a large amount of time is required. Trigonometry has some wonderful ideas and concepts in it, but most folks have to visit (and revisit) the concepts multiple times before mastery is achieved. If you don't get a concept the first time you see it. Hang in there, and try again. In other words, I am asking for a commitment. If you commit to spend the time needed on this course, your chances of success are high and I will do what I can to help you be successful.

FREE HELP: Free peer tutoring is available. For more information visit the tutoring center on the second floor of the Hinckley Library or online at <http://nwc.edu/tutoring/>. This link also has information about online tutoring through NetTutor.

OTHER CLASS POLICIES:

1. **There is a high correlation between poor attendance and poor grades in my classes.** Skipping class (even virtual classes) may not save you any time. In fact, it may do just the opposite (especially if you have to retake the course).
2. Discussion and questions are encouraged during class. Please don't be afraid to say, "I don't get it," or "Why did you do that?" If you ask a question, others in the class may have the same question and will be glad that you spoke up.
3. For most people, **time and effort** are required before mastery is achieved in mathematics. The saying "If you don't have time to do something right the first time, will you have time to do it right a second time?" is applicable here.
4. Study groups are not required, but are encouraged. Feel free to work together on homework.
5. It is advisable to keep a record of your scores to prevent any errors on your grade on my part.
6. Students are expected to maintain **CIVILITY AND RESPECT** within the classroom as detailed in the NWC Student Handbook Academic Code of Conduct. Abuses of this policy may result in removal from the class.
7. **ACADEMIC INTEGRITY:** Unless specified by the instructor, you will be expected to do your own work on tests. The student handbook outlines how violations of this policy may be handled
8. **Excused absences:** Students who miss class while officially representing the college are directly responsible for seeing that all assignments, tests, and exams are made up promptly. Such authorized absences merely give the individual who missed the class an opportunity to make up the work and in no way excuse the student from work required by the instructor.

*Additional information can be obtained by clicking on the link below which will take you to the **NORTHWEST COLLEGE UNIVERSAL SYLLABUS INFORMATION**. This document contains information about NWC's ADA statement, nondiscrimination notice, diversity statement, withdrawal procedure and schedule, academic dishonesty statement, final exam schedule, student resources and contact information (student success program, tutoring center, children's learning and care center, Hinkley library, project succeed/trio, net-tutor), and emergency procedures guide*

<https://nwc.edu/academics/syllabi/universal-syllabus-information>

I reserve the right to make changes to this syllabus to correct errors or to make minor class adjustments.

Math 1405 Schedule for Fall 2021

Due to unforeseen circumstances, this schedule may change.

	DAY	DATE	SECTION	TOPIC
1	Wed.	9/1	Introduction	<i>(Intro Rover HW due 9/7)</i>
2	Fri.	9/3	1.1	Functions and Function Notation <i>(due 9/8)</i>
	Mon.	9/6	No Class	Labor Day Holiday
3	Wed.	9/8	1.2	Domain and Range <i>(due 9/10)</i> <i>Last day to add full semester classes</i>
4	Fri.	9/10	1.5	Transformation of Functions <i>(due 9/13)</i>
5	Mon.	9/13	1.4/1.7	Composition and Inverse Functions <i>(due 9/15)</i>
6	Wed.	9/15	Finish Material Review	<i>Last day to drop class</i>
7	Fri.	9/17	Test #1	Chapter 1, (No Calculators)
8	Mon.	9/20	5.1	Angles <i>(due 9/24)</i>
9	Wed.	9/22	5.2	Unit Circle: Sine and Cosine Functions <i>(due 9/29)</i>
10	Fri.	9/24	5.3	The Other Trigonometric Functions <i>(due 10/4)</i>
11	Mon.	9/27	5.4	Right Triangle Trigonometry <i>(due 10/6)</i>
12	Wed.	9/29	Finish Material	
13	Fri.	10/1	Finish Material	
14	Mon.	10/4	Finish Material	
15	Wed.	10/6	Review	
16	Fri.	10/8	Test #2	Chapter 5 (Part 1: No Calculators, Part 2: Calculators OK)
17	Mon.	10/11	6.1	Graphs of Sine and Cosine Functions <i>(due 10/15)</i>
18	Wed.	10/13	6.2	Graphs of the Other Trigonometric Functions <i>(due 10/20)</i>
19	Fri.	10/15	6.3	Inverse Trigonometric Functions <i>(due 10/27)</i>
20	Mon.	10/18	Finish Material	
21	Wed.	10/20	Finish Material	
	Fri.	10/22	No Class	Fall Recess

	DAY	DATE	SECTION	TOPIC
22	Mon.	10/25	Finish Material	
23	Wed.	10/27	Review	
24	Fri.	10/29	Test #3	(6.1 to 6.3) (Part 1: No Calculators, Part 2: Calculators OK)
25	Mon.	11/1	7.1	Solving Trigonometric Equations with Identities <i>(due 11/5)</i>
26	Wed.	11/3	7.2	Sum and Difference Identities <i>(due 11/9)</i>
27	Fri.	11/5	7.3	Double-Angle, Half-Angle, & Reduction Formulas <i>(due 11/12)</i>
28	Mon.	11/8	7.5	Solving Trigonometric Equations <i>(due 11/17)</i>
	Tue.	11/9		ADVISING DAY...No Day Classes
29	Wed.	11/10	Finish Material	
30	Fri.	11/12	Finish Material	
31	Mon.	11/15	Finish Material	
32	Wed.	11/17	Review	
33	Fri.	11/19	Test #4	(7.1, 7.2, 7.3, 7.5) Calculators Allowed. You may use a copy of the Trigonometric Identities.
34	Mon.	11/22	8.1	Non-Right Triangles: The Law of Sines <i>(due 12/1)</i>
	Wed.	11/24	No Class	Thanksgiving Break
	Fri.	11/26	No Class	Thanksgiving Break
35	Mon.	11/29	8.2	Non-Right Triangles: The Law of Cosines <i>(due 12/6)</i>
36	Wed.	12/1	8.8	Vectors <i>(due 12/13)</i>
37	Fri.	12/3	8.8	Vectors
38	Mon.	12/6	Finish Material	
39	Wed.	12/8	Finish Material	
40	Fri.	12/10	Review	
41	Mon.	12/13	Review	Last Day of Normal Classes
	Wed.	12/14	**	Last day to withdraw from class
42	Fri.	12/17	Final Exam	7:30 to 9:20 am Comprehensive Final Part 1: No Calculators, Part 2: Calculators OK