

Welcome to MA 15400 Trigonometry Online

Fall 2025 for 16 Weeks



Instructor: Liz Davison
Office: Online (on Zoom)

How to Reach Me: E-mail: davieg03@pfw.edu ← preferred
Please use the following protocol when e-mailing me →

Phone Number: (239) 285-6828
Math Dept: (260) 481-6821
I normally respond within 24 hours (often sooner)
except on holidays and weekends.

- To make sure your email reaches me, include in the subject line your full name and course. For example: **Sy Snootles, MA 154 Online**
- University policy requires that you use your university e-mail address to email me to protect your privacy. Please do not use your private email address.
- Please keep the topic about the class.

Office Hours: Email me in advance to set up a time to meet on Zoom or in person.

Prerequisites: MA 15300 with C- or higher or placement by departmental exam. This course is primarily intended for students who have completed at least two years of high school algebra.

Course Website: Go to purdue.brightspace.com to access our course. Click on **Purdue Fort Wayne**, enter your PFW username and password, and click **Log in**. The suggested browsers are Chrome and Firefox. Explore and become familiar with the content and resources available in Brightspace.

Course Structure: Videos on Brightspace are best watched with pencil and paper in hand so you can work along with the class on the video. Assignments, quizzes, and tests are completed using e-Homework (commercially called Möbius).



TIP: Keep a special section in your notes or a binder to collect any questions as you watch the videos and work on e-Homework.

You will also connect with other students in the class through our online asynchronous discussion forum.

Materials: In addition to notebook plus binder for organizing your notes, please see these three items.

1. **e-Homework**, commercially called Möbius, is required for all your graded homework, which has automatically been linked to your Brightspace course so you are already registered and can access Möbius from day one of the course. The cost of Möbius has been added to your tuition statement by the Follett's Bookstore. If you took MA 15300 last semester for the first time, please email Follett's Bookstore (bookstor@pfw.edu) to request a \$27.50 refund so you do not pay for it twice.

IMPORTANT! Always enter Möbius through Brightspace! Otherwise the marriage between Möbius and Brightspace will separate and they will stop communicating with each other.



2. A **graphing calculator** is required for activities, assignments, quizzes and tests. The **TI-84 Plus** or **TI-84 CE Plus** are the *tools of choice*.
Note: You can rent one at Walb Student Union 225 (260-481-6586).
Click [HERE](#) for more information.



Yo! Optional!



Since all quizzes and tests are online, these free alternatives are also possible: [Wabbit Emu](#)
[Desmos](#)
[Geogebra](#)

If you know of other free options, please share this info with me.

3. The **text** *Functions Modeling Change, 6th Edition* by Connally, et al. is **optional** but recommended. Some students have shared they did fine without a text and learned everything from doing eHW.



TIP: You can also use the 5th Edition or even the 3rd. We do **NOT** use WileyPLUS. You might find it for cheap online at [Chegg](#), [Amazon](#), [eBay](#), betterworldbooks.com, and from [Wiley](#).

Recommended exercises out of the text will be given to deepen your understanding but not required.

Course Goals: This course emphasizes mathematical modeling of real-world problems using linear, exponential, and trigonometric functions. Topics also include vectors, parametric equations, conic sections, and complex numbers. Solutions to the problems are formulated, validated, and analyzed using mental, paper and pencil, algebraic, and technology-based techniques as appropriate. We will cover portions of Chapters 7-10 and Chapters 12-14. MA 15400 meets all [eight outcomes](#) (3.1 to 3.8) in *Area 3: Quantitative Reasoning* of the Indiana General Education Core. You can see the complete set of course goals listed on the [General Course Information](#) document.

Grading:

Prerequisite Skills Quiz.....	25 pts.	(3%)
Participation.....	25 pts.	(3%)
e-HW Assignments.....	100 pts.	(14%)
Top 4 Quizzes @ 25 pts each	100 pts.	(14%)
Test 1	100 pts.	(14%)
Test 2	100 pts.	(14%)
Test 3	100 pts.	(14%)
Comprehensive Final Exam	200 pts.	(25%)
Total Points Possible	750 pts.	

Grading Scale:

90% -100% (675 pts. or more)	A
80% - 89% (600 to 674.5 pts.)	B
70% -79% (525 to 599.5 pts.)	C
60% - 69% (450 to 524.5 pts.)	D
<60% (Below 450 pts.)	F

Prerequisite Skills Quiz: This quiz provides quick and early feedback to you on your proficiency with the skills needed for this course so you know if you have the skills needed, if you need to brush up, or if you need to take a refresher course. Study the eHW assignment *Math Background Needed for MA 15400* (and its worked-out solutions). There are *eHW Flash Cards* to practice as well as free Khan Academy resources [HERE](#).

Participation - Community Building: Post your self-introduction on Brightspace, submit the *Getting to Know You* survey, and post three C^3 (Contribute to the Class Community) discussion posts as directed in the Weekly Folders, each worth 5 points. Some ways to earn +1 Rhino bonus toward your participation score: attach a photo to your self-introduction on Brightspace or post substantively to the **Piazza Discussion Board** (ask a question, answer another student’s question, or positively contribute to the class community by sharing a tip, or [more](#).) You can also earn +1 Rhino bonus getting caught being awesome.

e-HW Assignments: Past students cite eHW as the key to their success. You have unlimited attempts until the due date and the highest score is taken. The average score of all your best eHW scores (@ 25 pts each) is converted to a percentage and taken out of 100 points. Please read the section on eHW in the [General Course Information](#) for help with how to use *eHW*. You are encouraged to complete the assignment **multiple times** (even after you have earned a perfect score). Research shows that students who do this retain the material better for the test.



TIP: You have **unlimited attempts** until the due date and the highest score is taken. The average score of all your best eHW scores is converted to a percentage and taken out of 100 points.



- **eHW** may be submitted but at a 10% late penalty, i.e. for late eHW, a score of 25 would appear in the Brightspace grade book as a score of 22.5. All late eHW closes at **11:59 PM, Sunday, Dec. 14**.



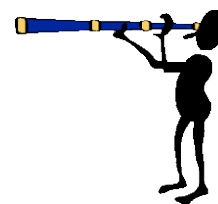
- **eHW Guarantee:** The question bank is well scrubbed; however, if you do find that your answer is correct and the system tells you otherwise (due to mathematics, not text entry) and you are the first to report it to the Course Coordinator, John LaMaster, lamaster@pfw.edu, then you will be awarded double points for that question.

Quizzes: To help make quizzes a learning experience, you can **drop all but the top four quizzes** (except the prerequisite quiz, which cannot be dropped). All quizzes are online through Möbius. Quizzes serve as “dress rehearsals” for the tests, so high performing students find they are worth their best effort even after earning four high scores. Since I take only the sum of the top four quizzes, there are no make-up quizzes.



TIP: See also the *Rhino Hot Quiz Award* on the last page to earn bonus points.

Tests: All tests are online through Möbius. Keep track of these dates in your personal calendar:
 Test 1 (*Tentatively Sections 7.1-7.3, Special Angles, 7.4-7.8*): Tues., Sept 23 - Sun., Oct. 5
 Test 2 (*Tentatively Sections 8.1-8.2, 9.1-9.4*): Thurs., Oct. 23 - Sun., Nov. 2
 Test 3 (*Tentatively Sections 10.1-10.2, 12.1-12.3, 13.1*): Tues. Nov. 18 - Sun., Nov. 30
 Comprehensive Final Exam
 (*Tentatively Sections 13.2-13.4, 14.1-14.3, 9.5, and all prior content*): Mon., Dec. 15 - Sat., Dec. 20



Student Support: I want you to be successful. Please reach out if you need help. Below is a directory of resources for specific issues. If technical difficulties affect your ability to complete assignments, please notify me as soon as possible.

For help with:	Contact:	Contact Information:
General Needs	See next column	See the Student Support Services Website
PFW account/password/ Brightspace Support	Information & Technology Services (ITS) Help Desk	Call: 260-481-6030 Email: helpdesk@pfw.edu See the ITS Website
Troubleshooting eHW	eHW Technical Support	Email: ehwtechsupport@pfw.edu
Graphing Calculator Rental	Student Government	Walb 225 or call: 260-481-6586 See the Calculator Rental Website
Using eHW (Möbius)	Check out the resource General Course Information in Brightspace first. Then see the Möbius Support Website for help.	
Tutoring	Online HERE and Face to Face tutoring in KT G19. See Brightspace under Student Support for hours	
Withdrawing from the class	Registrar	Directions are here and on the last page of this syllabus..
How to succeed in MA 15400	Students enrolled in a previous MA 15400 semester	💡 See the tips they wrote specifically to you!
If you don't know where else to turn for resources, then contact the CARE team	See their Website or call: 260-481-6601
Accommodations for students with disabilities (See below*)	Disability Access Center (DAC)	Walb 113, 260-481-6658, See their Website .

*For Students with Disabilities

If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of the Disability Access Center (Walb Union, Room 113, telephone number 260-481-6658) as soon as possible to work out the details. For more information, please visit the [Web site for Disability Access Center](#) (DAC).

Advice on Succeeding in MA 15400: Here is some timeless advice to take to heart so that you do not become overwhelmed: ***There's no substitute for daily preparation.*** In other words, work on this course every day, rather than saving it for the last minute before the deadline. Do not confuse the "due date" with the "do date". More tips are found [HERE](#).

Rhino Success

I believe in your success and want to support you to meet your goals.

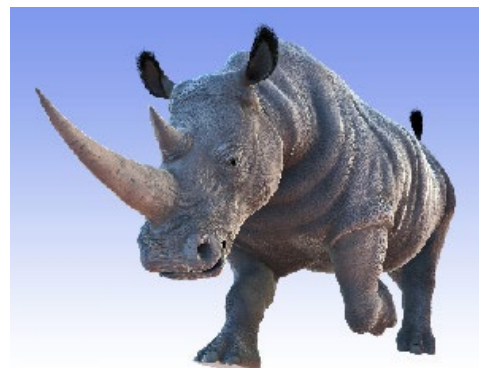
You can do it!

But it will require that you take charge of your learning, do the work required, and make the commitment to do what it takes to succeed.

If you want to succeed in life, be like the rhinoceros!

Wake up each morning and CHARGE straight ahead to accomplish your goals.

No obstacles get in the way of a 3-ton snorting rhinoceros charging at full speed!



Tentative Overall Course Schedule: The tentative course calendar below provides more details about deadlines and may be helpful to see the big picture. To keep track of all deadlines in this course you can use handy, clickable [Rhino Checklist](#), the calendar on Brightspace, or receive notifications using the Brightspace Pulse App to. Directions on acquiring Brightspace Pulse App are in the checklist in the **Start Here** module. If for any reason you are unable to complete a test during the specified dates for reasons beyond your control, please reach out to me for help. This schedule and assignments are subject to change. Any changes will be posted in Brightspace.

Topic	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat
Week 1 (Aug 25-29): Sections 7.1-7.2 Periodic Functions and the Sine & Cosine Functions	Aug 24	Aug 25	Aug 26	Aug 27	Aug 28	Aug 29 Self-Introduction due Getting to Know You Survey due eHW0: General Course Info due Syllabus Scavenger Hunt	Aug 30
Week 2 (Sept 2-5): Section 7.3 Radians & Arc Length	Aug. 31	Sept 1 Labor Day	Sept 2 eHW Math Background due Prerequisite Skills Quiz closes	Sept 3	Sept 4	Sept 5	Sept 6
Week 3 (Sept 9-12): Sections 7.4-7.5 Graphs of Sine and Cosine Functions	Sept 7	Sept 8 eHW 01 7.1-7.2 due eHW 02 7.3 due Quiz 1 closes	Sept 9	Sept 10	Sept 12	Sept 13	Sept 14
Week 4 (Sept 15-19): Sections 7.6-7.8 The Tangent Function and The Reciprocal Functions	Sept 14	Sept 15 eHW 03 Special Angles due eHW 04 7.4-7.5 due Quiz 2 closes	Sept 16	Sept 17	Sept 18	Sept 19	Sept 20
Week 5 (Sept. 22-26): Sections 7.7-7.8, 8.1 T and Inverse Functions and Right Triangle Trig	Sept 21	Sept 22 eHW 05 7.6-7.8 due Quiz 3 closes	Sept 23 Test 1 opens	Sept 24	Sept 25	Sept 26	Sept 27
Week 6 (Sept 29-Oct 3): Sections 8.1-8.2 Solving Triangles	Sept 28	Sept 29	Sept 30	Nov 1	Nov 2	Oct 3	Oct 4
Week 7 (Oct 6-10): Section 9.1-9.3 Analytical Trigonometry	Oct 5 T1 closes	Oct 6 eHW 06 8.1 due eHW 07 8.2 due Quiz 4 closes	Oct 7	Oct 8	Oct 9	Oct 10	Oct 11
Week 8 (Oct 13-17): Sections 9.3-9.4, 10.1-10.2 Polar Coordinates, Function Composition/Decomposition	Oct 12	Oct 13 eHW 08 9.1/9.2 due eHW 09 9.2/9.3 due Quiz 5 closes	Oct 14	Oct 15	Oct 16	Oct 17	Oct 18
Week 9 (Oct 22-24): Section 12.1 Inverses	Oct 19	Oct 20 Fall Break	Oct 21 Fall Break	Oct 22 eHW 10: 9.4 Quiz 6 closes	Oct 23 T2 opens	Oct 24	Oct 25
Week 10 (Oct 27-31): Sections 12.2 Vectors	Oct 26	Oct 27	Oct 28	Oct 29	Oct 30	Oct 31	Nov 1
Week 11 (Nov 3-7): Sections 12.3, 13.1 Applications of Vectors and Sequences	Nov 2 T2 closes	Nov 3 eHW 11: 10.1-10.2 due eHW 12 12.1-12.2 due Quiz 7 closes	Nov 4	Nov 5	Nov 6	Nov 7	Nov 8
Week 12 (Nov 10-14): Sections 13.3-13.4, 14.1 Series and Parametric Equations	Nov 9	Nov 10 eHW 13 12.3 due eHW 14 13.1 due Quiz 8 closes	Nov 11	Nov 12	Nov 13	Nov 14	Nov 15
Week 13 (Nov 17-21): Sections 14.2-14.3 Circles	Nov 16	Nov 17 eHW 16 13.3-13.4 due eHW 17 14.1 due Quiz 9 closes	Nov 18 T3 opens	Nov 19	Nov 20	Nov 21	Nov 22
Week 14 (Nov 24-25): Section 14.1 Ellipses and Hyperbolas	Nov 23	Nov 24	Nov 25	Nov 26 Thanksgiving Break	Nov 27 Thanksgiving Break	Nov 28 Thanksgiving Break	Nov 29
Week 15 (Dec 1-5): Section 14.4 Complex Numbers	Nov 30 T3 closes	Dec 1 eHW 18 14.2-14.3 due eHW 19 14.4 due Quiz 10 closes	Dec 2	Dec 3	Dec 4	Dec 5 eHW 20 9.5 due Quiz 11 closes	Dec 6
Final Exam Week (Dec 15-20)	Dec 14 All late eHW closes	Dec 15 Final Exam opens	Dec 16	Dec 17	Dec 18	Dec 19	Dec 20 Final Exam closes

All eHW, quizzes, tests, and the final exam are completed through Möbius. They close at 11:59 PM on the day indicated.

- You have unlimited attempts to complete your eHW Assignments until the deadline.
- To help accommodate any possible Internet outages, you will have 3 attempts for each quiz and each test.

You have 90 minutes to complete each quiz, taking the highest score. You have 180 minutes to complete each test, taking the highest score. The longer time limit is so you can take it unrushed. Please contact me as soon as possible if you have any issues that prevent you from completing your work. I encourage you to reach out to me.

Rhino Awards and Badges:

- **Rhino Hot Quiz Award:**

Earn a +2 Rhino Bonus on a test if you earn 90% or above (≥ 22.5) on each quiz over that test material, i.e.,

- Earn 90% or higher on Quiz 1, 2, & 3 for +2 Bonus on Test 1
- Earn 90% or higher on Quiz 4, 5, & 6 for +2 Bonus on Test 2
- Earn 90% or higher on Quiz 7, 8, & 9 for +2 Bonus on Test 3
- Earn 90% or higher on Quiz 10 & 11 for +2 Bonus on the Final Exam



- **Rhino Syllabus Award:**

Earn a +1 Rhino Bonus on the *Syllabus Scavenger Hunt* if it is a score of 100%.

- **Rhino Key Contributor Award:**

Earn a +1 Rhino Bonus to *Participation: Community Building* if you post at least once to the Piazza Discussion Board in a way that supports others' learning.



Catalog Description of the Course: Topics covered include the trigonometric functions, analytic geometry, laws of sines and cosines, vectors, dot product, conic sections, and rational functions.

Catalog Description of Student Learning Objectives:

1. Understand and be able to use trigonometric functions, inverse trigonometric functions, analytic geometry, laws of sines and cosines, vectors and the dot product to solve application problems.
 2. Learn about conic sections (ellipses, hyperbolas and parabolas) and rational functions.
- In addition to the above, see also the objectives listed [here](#).

General Education Course Learning Outcomes

Indiana College Core Area 3 Quantitative Reasoning Competencies

Interpretation and Representation

3.1. Interpret information that has been presented in *mathematical form**.

3.2. Represent information/data in *mathematical form** as appropriate

**mathematical form* = functions, equations, graphs, diagrams, tables, words, and geometric figures.

Mathematical Procedures

3.3. Demonstrate skill in carrying out mathematical (e.g. algebraic, geometric, logical, statistical) procedures flexibly, accurately, and efficiently to solve problems.

Critical Thinking

3.4. Analyze mathematical arguments, determining whether stated conclusions can be inferred.

Application / Analysis

3.5. Communicate which assumptions have been made in the solution process.

3.6. Analyze mathematical results in order to determine the reasonableness of the solution.

3.7. Cite the limitations of the process where applicable.

Communication

3.8. Clearly explain the representation, solution, and interpretation of the math problem.

Click [HERE](#) for more information about the Indiana College Core.

What is the best way to use Artificial Intelligence (AI) and eHW (Möbius) as a student in this class?

Use AI and eHW for systematic, regular practice with a targeted focus, the way professionals develop mastery in order to help you learn the content as opposed to just getting an answer to earn points.

The use of AI is recommended to:

- help you learn a difficult concept.
- tell you how a concept might be important for your career path.
- create example quiz questions. “In terms of difficulty, on a scale of mild, medium, or spicy, make it *<choose a level>*.”
- tell you the best ways to study for an exam.
- help you in these ways suggested by ChatGPT

Use caution. Large Language Models (LLM) can hallucinate as in these examples. A healthy distrust is appropriate. LLM’s may apply procedures you have not yet learned, omit steps altogether, or provide incorrect answers.

To coach AI, use these prompts to lower the chance you will get rubbish:

- Ask “Don’t give me solutions but just give me help along the way”. Utilize ChatGPT *Study Mode*.
- Say “Hey, slow down, check your results by using Python, and solve the problem step by step.”
- Whenever AI skips a step, it is more likely at that point that is hallucinating. Ask AI to tell you to fill in the missing steps. Tell them your grade level. “Drop down a notch, Einstein. Teach a first-year college student how to solve the problem step by step.” or “I haven’t learned that method yet. Tell me another way to solve it.”
- AI perceives emotion. It performs better if you say “It’s vital to me you get it correct and that it makes sense to me.”

At present, LLM’s might **not** do very well with:

- validating if your answer is correct or sharing how you can use other strategies to know if your answer is correct.
- critiquing if your solution is the best one possible or sharing if there is a more efficient or better approach.



TIP: In class you will see how to do this.

If you find yourself overwhelmed or in the wrong class, please make sure you officially process your withdrawal rather than simply stop attending.

See the withdrawal deadline at the top of this page.



To officially process a withdrawal, log in to **go.pfw.edu** and, on the Home Page on the first card titled **Student To-do List**, select **Student Common Dashboard** (the fourth item in the list). Then click on **Withdraw Form (after add/drop, until deadline)** and submit the form. This would only put a grade of W on your record instead of a grade of F. A grade of W does not affect your GPA. Future employers will not view a grade of W as a *mar* on your record, but, instead, as a *strategic recalibration*.