MA 15400 Trigonometry Course Syllabus (Fall 2026)

Course Title: Trigonometry

Course Number: MA 15400

Instructor Name:

Instructor Email:

Office Hours:

Office Location:

Course Description:

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

Course Prerequisites:

MA 15300 with a grade of C- or higher or placement by departmental exam or permission of the instructor.

Course Access:

We will use Google Classroom to access any assignments for the class. Please explore Google Classroom and become familiar with the system.

Course Goals:

- Highlight the link of mathematics to the real world.
- Develop a wide base of mathematical knowledge, including
  - basic skills and concepts,
  - a functional view of mathematics, including graphical, algebraic, numerical, and contextual viewpoints
  - properties and applications of some of the basic families of functions
  - geometric visualization,
  - problem solving, predicting, critical thinking, and generalizing
- Incorporate the use of general academic skills such as
  - communicating mathematics concepts,
  - understanding and using technology, and
  - working collaboratively.

Indiana College Core Area 3 Quantitative Reasoning Competencies

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.
3.3. Demonstrate skill in carrying out mathematical (e.g. algebraic, geometric, logical, statistical) procedures flexibly, accurately, and efficiently to solve problems.
3.4. Analyze mathematical arguments, determining whether stated conclusions can be inferred.
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.

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 Indiana Academic Mathematics Standards for Precalculus Trigonometry listed here.

Learning Resources & Texts

- **Required Textbook:** Demana, F. D., Waits, B. K., Foley, G. D., Kennedy, D., Bock, D. E. (2019). Precalculus: Graphical, numerical, algebraic (10th ed.) Pearson Education Inc.
- **Additional Resources:** TI-84 Plus or TI-84 Plus CE Graphing Calculator

Assignments

Each nine-week grade will be determined by homework, quizzes, and tests. Homework will account for 20% of your nine weeks grade. Quizzes will account for 35% of your nine weeks grade. Tests will account for 45% of your nine weeks grade. The two nine-weeks grades will each account for 40% of the semester grade. The semester exam will account for 20% of the semester grade.

Grading Scale:

A	93-100%	C	73-76.9%
A-	90-92.9%	C-	70-72.9%
B+	87-89.9%	D+	67-69.9%
B	83-86.9%	D	63-66.9%
B-	80-82.9%	D-	60-62.9%
C+	77-79.9%	F	0-59.9%

Course Evaluation:

Students will be provided a link, which will lead them to a form created and managed by the Collegiate Connection office, all data collected is anonymous and will be shared with instructors and their departments at the end of the school year.

Academic Misconduct / Plagiarism / AI:

Academic Misconduct, including plagiarism (using other people's ideas/words and not giving them credit thus implying the work is your own original work) or using your own work from a previous course without the express permission of the instructor, is taken very seriously at any learning institution. It is taken very seriously in this class. Please be aware of what behaviors constitute academic misconduct (See Bulletin, Code of Students Rights, Responsibilities and Conduct Part II. A.) If caught cheating or plagiarizing, a student may receive no credit on the assignment and may result in an F for the course. Any instances of academic dishonesty will be reported to the Office of Student Conduct and Care and your Department Chair and may result in expulsion from the University. Additional potential consequences can be found under: potential consequences (See Bulletin, Code of Students Rights, Responsibilities and Conduct, Part III. A.: i.e., failure of the assignment, failure of the course and/or dismissal from the university) of such behavior.

MA 15400 assumes that work submitted by students—all process work, drafts, low-stakes writing, final versions, and all other submissions—will be produced by the students themselves, working individually or in groups. This means that the following would be considered violations of academic integrity: a student has another person/entity/artificial intelligence (e.g., ChatGPT) do the writing of any substantive portion of an assignment for them.

Course Schedule

Final Exam: May 27, 28, or 29