MATH 1149
Trigonometry
Summer 2018

Lecturer: Niko Schonsheck
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Office hours: Math Tower 320, MWF 11:30-12:30 (and by appt)
Lecture: WF 1:30-2:40; Bolz 422

Recitation Instructor: Dhir Patel
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Office hours: Math Tower 200, TuTh 3:30-5:00 (and by appt)
Recitation: TuTh 1:30-2:40; Smith 2180

Course Overview: Trigonometry is, in essence, the study of triangles. More specifically, we will study the relationship between the sides of a triangle and its interior angles. The main tools we have to do this are so-called trigonometric functions; thus, much of the course will be devoted to understanding these functions and their properties. Depending on your degree program, this course can also be used to satisfy the Quantitative and Logical Skills category of the General Education Requirement. The prerequisite for this course is a C- or better in Math 1148, or permission of the department.

Objectives: The design and material of this course aim to achieve the two following goals:

- To investigate and understand the fundamental tools of trigonometry and how they are applied to solve real world problems. Moreover, emphasis will be placed on the aspects of trigonometry that are used heavily in other mathematics courses – most notably Calculus I and II.
- To learn how to "think mathematically." That is, we will focus on learning how to think *critically*, *abstractly*, *creatively*, and *logically*, in order to apply tools and techniques learned in lecture and recitation to similar, but different, problems.

In many ways, the second objective is far more important. This course is designed so that you will be able to adopt a mathematical perspective when trying to understand – and ultimately solve – complex and difficult questions both inside and outside of a classroom setting. Towards this end, your grade will be based on the following.

Grading Policy: To learn how to play the piano, it is not sufficient to only watch your instructor play. You yourself must practice (and often struggle with) fundamentals, scales, and eventually more complicated pieces of music. Similarly, the *only* way to learn mathematics is to *do* mathematics. With this in mind, a **significant** portion of your grade will come from **written homework.** The rest will be based on two midterm examinations and a final exam.

The course will be graded out of a total of **450 points**.

- **Six** homework assignments, each worth **30 points** will make up **180** of these points, or **40**% of your final grade.
- **Two** midterm examinations, each worth **75 points** will make up **150** of these points, so are (together) worth $\sim$ **33**% of your final grade.
- A (regularly scheduled) **final exam** will account for the remaining **120 points**, or $\sim$ **27**% of your final grade.

Also, there will be opportunities to earn **bonus points:** If you turn in revisions (correcting all mistakes) of your midterms within **one week** of getting them back, you can receive up to 6 points on each exam (maximum score of 75/75). Moreover, if you (before or on the last day of class) turn in a final study guide/extra problems worked out/flashcards, etc. you can receive up to 6 bonus points. This totals 18 points, or **4**%, of your final grade, meaning it can bump you from, e.g. a B+ to an A- so you are STRONGLY ENCOURAGED to take advantage of this.

We will have the following grading scale:

A : 93% **A-** : 90% **B+** : 87% **B** : 83% **B-** : 80% **C+** : 77% **C** : 73% **C-** : 70% **D+** : 67% **D** : 60%

Homework Policy: We will have six written homework assignments during the 8-week session. They are due at the *beginning* of class on the dates indicated on the course calendar. (Late homework will be accepted only under extreme, documented circumstances and it is the responsibility of the student to contact the lecturer if such a situation arises.) You are allowed, and encouraged, to work together and see the lecturer and recitation instructor during office hours to complete these assignments. You must, though, turn in your own write-up. Moreover, because written homework will be such a substantial portion of your grade, we will have *strict* standards that you *must* meet. If you fail to meet *any* of the following requirements, 4 points will be deducted from that assignment.

- Homework should be written *neatly* and be *clearly legible* (or typed). Write in *complete sentences* whenever possible.
- Homework should be *stapled* and your name and the assignment number should appear at the top of the first page. Any residue from tearing paper from a spiral notebook should be removed.
- Each problem number should be *clearly indicated* and it should be *abundantly clear* what work goes with what problem. (There should not be arrows pointing all over your paper.) Your solutions should be organized and have a logical flow. Circle your final answer when applicable.

A total of six problems, each worth four points, from each homework will be graded (24 points) based on the rubric below. The remaining 6 points (for a total of 30) will come from making a genuine attempt on all problems (-2 for each problem not attempted, minimum score 0/6).

4: A complete and correct solution, with APPROPRIATE EXPLANATIONS and justifications, possibly with minor cosmetic errors.
3: A mostly correct solution, with one or two mistakes that impact the final answer or somewhat incomplete explanations.
2: Displays a misunderstanding of one or more of the key concepts of the question. Explanations and justifications are confused or simply not true.
1: A severe misunderstanding of the question, what it is asking for, with minimal explanation or justification.
0: No attempt was made to answer the question, or an attempt was made, but no logical solution follows.

Complete solutions to each assignment will be posted on Carmen after the due date.

Exam Information and Dates: These are the exam dates for this course. The two midterms will be given outside of class at the dates and times below and the final exam will be at our university-scheduled exam time.

Midterm 1: June 26, 6:00-7:00 p.m., EA 0170

Midterm 2: July 19, 6:00-7:00 p.m., EA 0170

Final Exam: August 1, 2:00-3:45 p.m., Bolz 422

Make-up exams can be given for a legitimate excuse such as having a documented work or class conflict, or documented illnesses. If you need a make-up exam you should contact the lecturer ASAP. Except in case of emergency, all needed make-up exams should be arranged between you and the lecturer at least a week before the scheduled exam. Lastly, students should not make travel arrangements that conflict with the final exam. Such a conflict is not a valid excuse for missing a regularly scheduled exam.

Carmen (Canvas): This is a web-based course tool that allows you to view your grades, course materials, and announcements. You can access Carmen Canvas by visiting http://carmen.osu.edu. You will need your OSU ID and password (the same ID and password used to access the Registrar's website).

Course Textbook: For this course, we will use: *College Algebra & Trigonometry*, 1st edition, by Miller and Gerken, published by McGraw-Hill (ISBN: 9781259976612). You DO NOT need to purchase the Connect Math online access code since we will be doing hand-written homework.

Calculator: One aspect of this course includes understanding how to computationally solve problems; thus a graphing calculator is a required component. It is recommended that you use a TI-83, TI-83 plus, or TI-84. PLEASE BE AWARE, however, that TI-89, TI-92, and other calculators with a Computer Algebra System Capability are NOT permitted during exams or quizzes.

Disability Service Statement: Students with disabilities that have been certified by Student Life Disabilities Services (SLDS) will be appropriately accommodated and should inform the instructor as soon as possible of their needs. SLDS contact information: slds@osu.edu; 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

Academic Misconduct Statement: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed, illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7). For additional information, see the Code of Student Conduct at http://studentlife.osu.edu/csc/