Course Name and Number  
Math113, Trigonometry  

Credits: 3 credits  

Credit Hours  
The 3 credit hours are met by two 75-minute meetings and a minimum of five hours of out of class student work per week for 15 weeks.  

Course Designations and Attributes  
Level: Elementary, L&S Credit Type: C  

Meeting Time and Location  
Lecture 1 TR 2:30-3:45 online  
Lecture 2 TR 1:00-2:15 online  
Lecture 3 TR 11:00-12:15 in B102 Van Vleck  

INSTRUCTOR  
Lecturer Eugenia Malitsky  

Instructor Availability  
Office hours and location: online via BBCollaborate Ultra  
Lecture 1 Tue 2:30-3:45  
Lecture 2 Tue 1:00-2:15  
Lecture 3 Tue 4:00-5:15  

Instructor Email  
Email: malitsky@math.wisc.edu  

Requisites  
Math112 or placement into Math113. Closed to students with credit for Math114.  

OFFICIAL COURSE DESCRIPTION  
This course covers  
A. Topics in geometry: angles and their units of measurement, solving right and oblique triangles, including the Law of Sine and the Law of Cosine, area of a triangle;  
B. Trigonometric functions and their graphs, trigonometric equations and identities;  
C. Applications in physics, navigation, engineering, etc.  

LEARNING OUTCOMES  
We expect that after taking the course a student:  
● Can do various problems involving angles (e.g. problems with vertical and corresponding angles), angles in a triangle, and similar triangles.  
● Knows how to use Distance Formula. Can write equation of a circle with given center and radius.  
● Knows the definitions, domains, ranges, and properties of trigonometric functions.  
● Knows how to use trigonometry to solve right triangles.
Knows the definition of the unit circle. Knows the definition of radian measure, and the motivation behind it. Can convert from degrees to radians, and from radians to degrees. Understands the relationship between circular functions and trigonometric functions of an angle in degrees and radians. Knows how to compute the length of an arc and the area of a sector in a circle.

- Can solve circular motion problems.
- Knows graphs of key trigonometric functions. Knows how to use symmetry, x- and y-intercepts, asymptotes, function transformations, the concepts of amplitude, period, and phase shift to graph a trigonometric function.
- Can solve simple harmonic motion problems.
- Comfortable working with trigonometric identities. Understands what it means to verify an identity. Knows how to use trigonometric identities, factoring formulas and other basic techniques to simplify an expression or to verify an identity. We do not require memorizing trigonometric identities, and provide a table of trigonometric identities on the third midterm and final exams.

- Knows definitions of one-to-one and inverse functions. Can determine whether the given function is one-to-one from its graph (i.e. Horizontal Line test). Understands that an inverse of an increasing (decreasing) function is also an increasing (decreasing) function. Understands that the graphs of inverse functions are symmetrical about the line y = x.

- Understands the concept of a restricted domain. Knows definitions, domains, ranges, and graphs of inverse trigonometric functions. Can write a composition of a trigonometric function and an inverse trigonometric function as an algebraic expression.

- Knows factoring formulas and other basic techniques for solving algebraic equations. Can apply them to solve trigonometric equations.


- Knows how trigonometry is used in various applications in science and engineering, for example, in navigation and surveying of land

**Textbook and Software**
Lial: Trigonometry, 11th edition
The eText is accesible via the Canvas course site

Lecture videos are accesible via the Canvas course site

**GRADING**
Three Midterms – 33.3% each, the lowest dropped
Final – 33.3%

**EXAMS**
All exams are online.
Midterm Exams: Midterm I is on October 1st, Midterm II is on October 27th, and Midterm III is on November 19th.
The final exam is on Saturday December 12, 3:50PM-4:45PM.

By signing up for this course you are agreeing to take the final exam at the scheduled time by the University.

HOMEWORK
Homework: There are weekly homework assignments. Homework is not collected.

RULES, RIGHTS & RESPONSIBILITIES
● See the Guide’s to Rules, Rights and Responsibilities.

ACADEMIC INTEGRITY
By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison’s community of scholars in which everyone’s academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to https://conduct.students.wisc.edu/academic-integrity/.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES
McBurney Disability Resource Center syllabus statement: “The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student’s educational record, is confidential and protected under FERPA.” http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php

DIVERSITY & INCLUSION
Institutional statement on diversity: “Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.
The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” https://diversity.wisc.edu