# MTH 112Z Precalculus II: Trigonometry

The following provides a summary of the 2022 Recommendation Report for the CCN Math Subcommittee. Transfer Council recommends that due to changes in course information under OAR 715-025-0065 through 0115, colleges and universities should ensure students' academic progress is not disrupted. Courses completed before CCN changes should count toward graduation, even if requirements shift. Holding students harmless means honoring their efforts, supporting them through transitions, and keeping learning—not compliance—the central focus. CCN course information should be adopted as written. For more detailed information on what can be added to the course description and course learning outcomes, see the CCN Revised Framework and for more general information, see CCN Reports & Memos on the Educator Resources—Common Course Numbering webpage.

## Approved CCN Course Information

**Date Approved:**
November 4, 2022

**Catalog Dates:**
Required to begin appearing in the 2023-24 catalog.

**Review Timeline:**

- First Annual Review: Winter 2025
- First Triennial Review: Winter 2027

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**Course Number and Prefix:**
MTH or MATH 112Z

**Course Title:**
Precalculus II: Trigonometry

**Course Credits:**
4

**Course Description:**
A course primarily designed for students preparing for calculus and related disciplines. This course explores trigonometric functions and their applications as well as the language and measurement of angles, triangles, circles, and vectors. These topics will be explored symbolically, numerically, and graphically in real-life applications and interpreted in context. This course emphasizes skill building, problem solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of present-day technology.

**Course Learning Outcomes:**

At the end of this course, students will be able to:

1. Translate among various systems of measure for angles including radians, degrees, and revolutions.
2. Represent, manipulate, and evaluate trigonometric expressions in terms of sides of a right triangle and in terms of the coordinates of a unit circle.
3. Graph, transform, and analyze trigonometric functions using amplitude, shifts, symmetry, and periodicity.
4. Manipulate trigonometric expressions and prove trigonometric identities.
5. Solve trigonometric equations using inverses, periodicity, and identities.
6. Define, represent, and operate with vectors both geometrically and algebraically.
7. Apply the law of sines and the law of cosines to determine lengths and angles.
8. Use variables, trigonometric functions, and vectors to represent quantities, create models, find solutions, and communicate an interpretation of the results.
9. Determine the reasonableness and implications of mathematical methods, solutions, and approximations in context.

**Review Cycle:**

This Subcommittee recommends the following schedule, structure, and goals for the reflection, maintenance, and enhancement of the recommendations made in this report:

1. Annual CCN Math Subcommittee Check-ins beginning in Winter 2025 to gather qualitative and/or quantitative data on faculty and student experiences, make requests for institutional and statewide data, discuss challenges, and raise concerns to review the transfer effectiveness of the CCN Math courses. The scope of annual check-ins will focus on the statewide and collaborative nature of this work to facilitate inclusive and equitable conversations and identify potential issues that may require future modifications of the CCN recommendations or framework.
2. Triennial CCN Math Subcommittee Workshops beginning in Winter 2027 with the purpose of analyzing qualitative and quantitative data, drafting and approving modifications to the CCN Math Recommendations, and problem-solving implementation issues to strive to improve the effectiveness, inclusiveness, equity, and implementation of the recommendations and framework.
3. Efforts and results in engaging statewide entities in supporting and facilitating the work of the CCN Math Subcommittee. Statewide and regional conferences, gatherings, and workgroups, such as the Oregon Mathematical Association of Two Years Colleges (ORMATYC) and Oregon Math Chairs (OMC), are opportunities for data collection, collaboration, and networking critical to the success of the mandates in SB 233. Additionally, the development and maintenance of a statewide working-state repository for sharing inter-institutional information on math pathways, course outlines and updates, math placement practices, prerequisites, curriculum, and other information needed for successful statewide collaborative efforts.

4. Efforts and results in maintaining the continuity of the membership of the CCN Math Subcommittee and in improving equitable representation. The significant impacts of the work produced by this subcommittee necessitate efforts to actively engage all OR CCs and OPUs in this work.

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