

Note: This syllabus contains both **real and simulated links**. Real links are shown in [blue](#) and simulated links are shown in [green](#).

[SAMPLE] Syllabus: Math in Society (Math 105z)

Welcome to Math in Society! This dual-credit math course focuses on real world uses of math. Students in the course will work collaboratively, while learning how mathematical ideas and approaches can help us understand and address important problems.

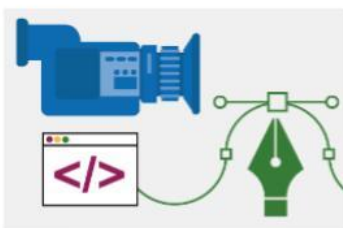
All of our district math courses are grounded in the [Oregon Math Project's](#) Cornerstones (as developed by the Oregon Department of Education): **Pathways, Focus, Engagement, & Belonging**



**This course meets 1 of the required math credits necessary for the following
3 highlighted career paths offered at Oregon High School:**



[Agriculture, Food, and
Natural Resources Systems](#)



[Arts, Information and
Communications](#)



[Business and Management](#)



[Health Sciences](#)



[Human Resources](#)



[Industrial and Engineering
Systems](#)

This +1 course is a continuation of our K-12 math learning progression dedicated to quantitative reasoning. In quantitative reasoning, we use math as a tool for solving real world problems. These mathematical skills and ideas are helpful across all careers, and are especially useful in fields we often don't associate with math, like agriculture and art.

This is a dual credit course. Students in this course will earn one high school math credit and can also enroll in our community college and earn free college credits. You will learn how to register for college-level math credit in January (you must be registered as a community college student and enroll in "Math 105" to earn your college credit). As an enrolled college student, you will be able to access some [dual credit student community college services](#), including free math tutoring and library access.

College credit information: By completing this course, students can earn "Math 105" credit. These college-level math credits (four quarter credits) will be **accepted** at **every public Oregon college or university**. These credits **may be accepted** by **out-of-state colleges/universities or at private institutions**, but you will need to check this with each school's admissions office.

At the conclusion of this course, your grade will be shared with our community college and added to your college transcript. For this credit to be accepted by a college or university, you will need to order and send a transcript ([see this website for transcript ordering instructions](#)).

Unenrollment, drop, or incomplete options (deadlines, definitions, and potential impacts) for your college credit will be explained throughout this course. Common questions about dual credit courses are answered on [our school's counseling website](#).



What will you learn in this course?

As a student in Math in Society, you will apply probability, statistics, and logic when working with real world, high interest data sets. This course includes practices for tracking and managing your personal finances. You will use multiple technology tools to do this work and will learn how to create data displays that effectively communicate your ideas. Finally, you will critically discuss and analyze the quality, intent, and impact of data displays.

Intended Outcomes for the course

Upon completion of the course students should be able to:

1. Use formulas and perform relevant calculations pertaining to personal finance in order to make informed financial decisions
2. Make and interpret calculations and graphical displays of numerical data in order to perceive and infer patterns within data sets
3. Calculate and interpret theoretical and empirical probabilities in support of making predictions and decisions in the presence of uncertainty
4. Use logical reasoning to describe and critique arguments and recognize common logical fallacies
5. Support conclusions using logical thought, reflection, explanation and justification
6. Use appropriate representations to effectively communicate, orally and in writing, quantitative results and mathematical processes

Course Content (Themes, Concepts, Issues and Skills)

1. Logical Reasoning and Problem Solving (roughly 10-20% of the course)
 - a. Describing and Critiquing Arguments
 - b. Understanding the Language and Rules of Logic
 - c. Recognizing Common Logical Fallacies
 - d. Non-Algebraic Problem Solving Strategies
2. Probability and Statistics (roughly 30% of the course)
 - a. Counting Rules
 - b. Calculating and Interpreting Basic Probabilities
 - c. Expected Value (e.g., Lotteries, Raffles)
 - d. Measures of Central Tendencies and Spread
 - e. Interpreting Graphical Displays of Data
 - f. Understanding Margin of Error and Polls
 - g. Interpreting Distributions
 - h. Recognizing the Misuse of Data
3. Financial Literacy (roughly 20% of the course)
 - a. Percent Sales and Income Tax
 - b. Simple and Compound Interest
 - c. Annuities

- d. Loans and Credit Cards
- 4. Additional Math Topics (roughly 30% of the course)
 - a. Exponential Growth/Decay Models
 - b. Coding/ Code Checking (Error coding)/ Code Breaking/Cryptography

Outcome Assessment Strategies

1. Individual or group projects culminating in a written report and/or an oral presentation
2. In-class exam
3. In-class activities
4. Portfolios
5. Individual student conference



To make this course engaging and student-centered, math learning will...

- 1) Be grounded in **data explorations** and **math modeling**. Students will apply math in real-world contexts, grapple with complexity and ambiguity, and use math to understand and address important questions and problems.
- 2) Occur in groups. We know group work is not always a positive experience, so we will use a research-based group work approach called **Complex Instruction**. Complex Instruction means students will...
 - Use **roles** (to make work fair and include all voices)
 - Use **norms** (to support healthy group interactions and effective communication)
 - Be **accountable as a team** (to make sure that team members are supporting one another and growing as a group)
 - Be **accountable as individuals** (to confirm that each person is learning and growing)
 - Work on **open-ended and interesting tasks** (to make groupwork...and the math!...more meaningful and helpful)



We know that it is extremely important for students to feel welcome, included, and valued in their math learning community. Throughout this course, your confidence, ability, and excitement in math will be nurtured. Lessons throughout this course will be culturally relevant: they will connect with our diverse identities and backgrounds.

This course will help you develop Social Emotional Learning (SEL) skills that support your math learning and will help you reach your educational and career goals.

These include.

- Self-awareness
- Self-management
- Responsible decision-making
- Relationship skills
- Social awareness

If you are feeling stuck or overwhelmed, talk with your team and connect with your teacher. Our classroom community is here to support you.

Our school-wide tutorial sessions run every Wednesday from 8-9 am. Please stop in and use this time to connect with your teacher, build your skills and confidence with the material, and work more with your math team.