



Spring 2018

Mathematics Department

Math in Modern Society

Math 123

Rebecca Owen

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208-482-6074 ext: 226

Students and Instructors are accountable for all information on the Course Syllabus, as well as the Institutional Syllabus Addendum, which is located on the students' Blackboard Site for this course. For further information regarding Library resources, accommodations, and more, please refer to the addendum on Bb.

Instructor Availability

Contact Mrs. Owen:

- If you need extra help or need to speak to me, feel free to come see me before school (7:30-8:00 am), after school (3:00-4:30 pm), or during Academic Success (Tuesday and Wednesday from 3:00-4:00 pm).
- Feel free to contact me by calling the school at 208-482-6072 ext: 226.
- Email me at owenr@cosaschools.org.

Course Description

This survey course provides an opportunity to acquire an appreciation of the nature of mathematics and its relation to other aspects of our culture. The course is rigorous but not rigid and applies mathematics to real-world problems.

PREREQ: Units 1-6 of MATH 095, or prior completion of MATH 025, or equivalent placement score.

General Education Competency Area

This course fulfills the Idaho State General Education competency area of Mathematical Ways of Knowing.

This course meets the following student competencies in fulfillment of State Board of Education policy:

- Read, interpret, and communicate mathematical concepts.
- Represent and interpret information/data.
- Select, execute, and explain appropriate strategies/procedures when solving mathematical problems.
- Apply quantitative reasoning to draw appropriate conclusions and support them.

Academic Affairs Objectives:

This course meets the following Academic Affairs Objectives:

- ✓ **Learn to Learn.** Students learn that as important as content knowledge is, shaping one's future requires the development of skill in discerning, applying, analyzing, synthesizing and evaluating knowledge in diverse contexts. The educational experience at CWI prepares

students for a world in which they are likely to change occupations and face unpredictable life events. We strive to develop courses and learning experiences that give students the tools to confidently thrive in a complex, information-saturated, diverse, and dynamic world.

- ✓ **Make Connections.** Students learn success in today's interconnected world requires deliberate engagement and comfort with multiple perspectives, cultures, and contexts. In navigating difference and diversity in the natural and social worlds, students connect ideas, forms of knowledge, and practices to create a richer understanding of themselves as personally and socially responsible citizens.
- ✓ **Solve Problems.** Students identify problems, analyze and implement solutions, and interpret and reflect on outcomes to develop skills to individually and collaboratively face challenges and create opportunities.
- **Reason Ethically.** Students learn that ethical ideas and moral conduct may be understood from many perspectives: as products of historical, cultural, and religious forces, as reflections of human nature, and as personally held attitudes and beliefs. Students learn to articulate ethical self-awareness, ethical issue recognition, and varieties of ethical perspectives to evaluate, create, and live consciously according to their own personal moral values.

Course Schedule

1st Block: 8:01-9:31 Monday through Thursday

Room 108

COSSA Academy

Course Objectives and Student Learning Outcomes

The Course Objective is to provide students with the mathematical foundation necessary for future mathematics courses and to be able to learn new concepts helpful to them as employees, citizens, and consumers.

Students completing this course are expected to acquire the ability and skills to:

- A. Use Problem Solving Strategies
 1. Use estimation, patterns, and organization.
 2. Use inductive and deductive reasoning.
 3. Recognize that many problems can be solved in multiple ways.
- B. Work with Multiple Numeration Systems
 1. Convert a number from one base to another, including base two and base sixteen.
- C. Solve and Graph Algebraic Equations
 1. Solve linear equations.
 2. Graph linear equations.
 3. Solve linear equations containing fractions.
 4. Identify equations with no solution or infinitely many solutions.
- D. Use Statistics to Understand Data
 1. Understand proper sampling techniques.
 2. Organize data and display data with appropriate graphs.
 3. Calculate and interpret measures of central tendency.
 4. Calculate and interpret measures of dispersion.
 5. Understand the parameters of the normal distribution.
 6. Use the normal distribution to solve problems involving data.
 7. Graph data using a scatter plot.
 8. Understand correlation and regression.
- E. Apply Mathematics to Personal Finance
 1. Understand percent, sales tax, and discounts.
 2. Understand and calculate income tax.

3. Calculate simple interest.
 4. Calculate compound interest.
 5. Solve problems involving annuities, stocks, and bonds.
 6. Compute payments and interest costs for car loans, home mortgages, and credit cards.
- F. Use Dimensional Analysis
1. Measure and convert units of length, area, volume, weight, and temperature in the metric and imperial systems.
- G. Use Probability
1. Understand the Fundamental Counting Principle.
 2. Solve problems using permutations and combinations.
 3. Distinguish between combinations and permutations.
 4. Compute probabilities.

Outcomes Assessment

The student learning outcomes will be assessed using homework, quizzes, projects, signature assignments, unit tests, and a final exam.

Signature Assignments

Students will complete at least one signature assignment for this course. The signature assignments will be used to assess the General Education Program. Students will upload signature assignments to the student's TaskStream account. Signature assignments will demonstrate at least two of the General Education Program Objectives, which are:

- **Learn to Learn** is students understanding their own learning as a personal pursuit that requires a level of self-guided navigation, perseverance, and resilience as obstacles and challenges present themselves. Students will become active participants in their pursuit of knowledge.
- **Problem Solving** is the process of defining a problem, designing and implementing a solution strategy to answer an open-ended question or achieve a desired goal, and evaluating the outcomes and implications of the solution strategy.
- **Make Connections** is transferring knowledge across contexts and linking academic knowledge with personal experience.
- **Creative Thinking** includes opportunities for students to react to, think about, and analyze creative processes and works, as well as the chance for students to work in imaginative ways. These opportunities are characterized by a high degree of innovative thinking, risk taking, and reflective thinking.
- **Ethical Reasoning** is concerned with right and wrong human behaviors. It requires students to be able to assess their own ethical values and the social context of problems, recognize ethical issues in a variety of settings, think about how different ethical perspectives might be applied to ethical dilemmas, and consider the ramifications of alternative actions.
- **Global Citizenship** prepares students to be responsible and active citizens in a diverse and dynamic world. Students will examine how their ideas and actions impact the world around them.

Grading Policy

Category	Weight
Homework	20%
Quizzes	10%
Exams	50%
Final Exam *	20%
TOTAL:	100%

Letter grades will be determined as follows:

A:	90-100%
B:	80-89%
C:	70-79%
D:	60-69%
F:	59% or below

* A 60% on the final exam is a course requirement to obtain a “C” or better in the course.

Textbooks and Required Materials

The textbook for the course is Thinking Mathematically, 6th edition by Robert Blitzer.

Course Calendar

Chapter 1 (Sections 1.1-1.3) – 3 Sessions

Chapter 2 (Sections 2.1-2.5) – 5 Sessions

Chapter 4 (Sections 4.1-4.2) – 2 Sessions

Test

Chapter 5 (Sections 5.1-5.7) – 7 Sessions

Chapter 6 (Sections 6.1-6.5) – 5 Sessions

Test

Chapter 7 (Sections 7.1-7.6) – 6 Sessions

Test

Chapter 8 (Sections 8.1-8.8) – 8 Sessions

Chapter 9 (Sections 9.1-9.3) – 3 Sessions

Test

Chapter 10 (Sections 10.1-10.6) – 6 Sessions

Chapter 11 (Sections 11.1-11.4) – 4 Sessions

Test

Chapter 12 (Sections 12.1-12.5) – 5 Sessions

Test

Important Dates:

Registration Deadline – February 16th, 2018

Drop Deadline – March 16th, 2018

Withdraw Deadline – May 4th, 2018

Course Expectations

- Doing assigned work:
 - Individual or group work will be assigned during every class meeting.
 - If the work is assigned from a textbook the following must be included in the heading of the paper (which is to appear in the upper right-hand corner):
 - Name
 - Page number
 - Problem numbers assigned
 - If the work assigned is a worksheet, please ensure that your name is on the work before it is handed in.
 - All work must be completed in pencil. I will not accept work that is not completed in pencil.
 - You must show all work. Problems without necessary work shown will be marked incorrect.

- Turning work in:
 - Work must be placed in the appropriate tray in the room.
- Late work:
 - Completing work late puts you at a disadvantage in class. Math is a subject that relies on previously learned skills. I strongly encourage you to complete your work on time.
 - Any late work will receive a failing grade.
 - If you have an excused absence you will have five days to turn in the missing assignment. After five days the assignment will receive a failing grade.
- Quizzes:
 - Quizzes may be given from time to time.
 - Do not expect to be notified of the time of a quiz.
- Tests:
 - All of the tests for a class must be completed, handed in, and graded before any test will be returned to a student.
 - You may have the opportunity to take a second test if you are unhappy with the results of the first test. This opportunity will be provided at the discretion of the teacher with ample evidence provided by the student that additional work was completed to merit reassessment.
- Notes:
 - You are expected to take notes in this class. Ample time will be given to write down required information.
- If your attention is needed:
 - When the person in charge of the class stands at the front of the room do the following:
 - Turn and face the person in charge
 - Be ready for instruction
- If you need to sharpen a pencil or if you need a new one:
 - I will have a few pencils; you are more than welcome to borrow one (I require some sort of collateral if you borrow one of my pencils), but please do so at an appropriate time.
 - Please do NOT sharpen your pencil while someone is speaking.
- If you would like to ask a question or respond to a question or thought:
 - You do not need to gain permission every time, but please be courteous to those around you.
 - Do not interrupt someone who is speaking.
 - Do not attempt to speak over someone else.
 - Allow others an opportunity to respond if you have already done so.
 - You are more than welcome to raise your hand and gain recognition in that manner if it makes you more comfortable.
- If you are absent:
 - All assignments will be tracked. Ask another student for the assignment. If the assignment was a worksheet, you can me at an appropriate time.
 - Copy any part of your notes that you missed during the previous day from another student.
 - If the absence is an excused absence, you will have five days to complete the missing work.

- Entering the classroom:
 - Enter the classroom.
 - Go directly to your assigned seat.
 - Complete the problem on the board.
- Leaving the classroom for any reason:
 - Obtain my permission to leave the classroom.
- In-class participation:
 - I expect you to participate in class discussion at all times.
 - At times I will ask for an indication that you understand the things we've discussed. We will discuss ways to indicate understanding in class.
- End-of-period class dismissal:
 - I will dismiss you at the end of class. Remain seated and working until I dismiss you.
- Food and Drink:
 - No food or drink will be allowed in the classroom.
- Electronic Devices:
 - Use of electronic devices is not allowed unless directed by the teacher.

Behavioral Expectations:

Every student has the right to a respectful learning environment. In order to provide this right to all students, students must take individual responsibility to conduct themselves in a mature and appropriate manner and will be held accountable for their behavior. Students who disrupt the class or behave inappropriately or disrespectfully, as determined by the instructor, may be asked to leave the classroom.

If conduct continues to be an issue, students may be referred to Student Conduct for judicial action. It is the student's responsibility to check their email to receive notification of any scheduled appointments or other urgent communications.

Any student who has witnessed or experienced a violation of the student code may contact Student Conduct at extension 22305, or email: conduct@cwidaho.cc

Mrs. Owen's Classroom rules:

1. Respect others and their property
2. Have all materials, and have them ready to use when the bell rings
3. Be polite and helpful
4. Don't curse or swear
5. No cheating

Classroom Consequences:

- ☒ First offense: Short conference with student
- ☒ Second offense: Student will be sent to ISS

COSSA Academy Five "Unacceptables" (Automatic Isolated ISS or OSS)

1. Use of the "F" word
2. Sight of your B, B, or B
3. Intimidation, bullying, put-downs
4. Sexual harassment
5. Reference to, or glorification of, the illegal use of: drugs, alcohol, tobacco

Academic Honesty:

All work submitted by a student must represent his or her own ideas, concepts, and current understanding. All material found during research must be correctly documented to avoid plagiarism. Cheating or plagiarism in any form is unacceptable and violations may result in disciplinary action ranging from failure of the assignment to failure of the course. Repeated acts of academic dishonesty may have more severe institutional ramifications. The consequences for cheating in this class are listed below:

Cheating will not be tolerated. Any student found cheating will receive a failing grade on that assignment and the student's parents will be contacted. A second offense will result in disciplinary action per the COSSA Academy Handbook.

Emergency Procedures

Emergency procedures are posted in the classroom.