Syllabus for Math 5

Course Information

Semester & Year: Summer 2020
Course ID & Section #: Math 5 V1200-2020X
Instructor's name: Dr. Trevor Keiber
Day/Time *Online:
Location *Online:
Number of units: 3

Instructor Contact Information

Office location *Online:
Office hours: Monday 6-7:30pm (Unofficial)
Phone number: NA
Email address: Trevor-Keiber@Redwoods.edu

Required Materials

Textbook Title: Math in Society (Free Online Textbook)
Edition: 2.5
Author: David Lipmann
ISBN: https://www.opentextbookstore.com/mathinsociety/
Other requirements: Regular access to the internet.

Catalog Description

An introduction to mathematics for students not pursuing science, business, and math majors. Surveys selected topics with a focus on history, utility, and artistry to promote appreciation and critical understanding of the foundational importance of mathematics to contemporary society.

Course Student Learning Outcomes *(from course outline of record)*

1. Demonstrate critical thinking skills through analyzing mathematical ideas in the context of contemporary society.
2. Use mathematical skills and techniques when arguing a position on a contemporary issue.

Evaluation & Grading Policy

The course is divided eight weeks, each week we will focus on a different topic. The first two weeks cover concepts from pre-algebra which will be useful for the remainder of the class. If these sections are easy for you, then do the problems quickly and don't stress about it. If you are rusty with adding fractions, percent's, ratios or dimensional analysis, then make sure to read the text provided and watch the videos. Weeks 3-8 in the course will focus on more specific topics and have more open ended written assignments or projects. There are no exams for this course, the projects will take the place of tests. Your letter grade for this course is calculated from the scores you receive the homework assignments, projects, and threaded discussions.

Homework	(70%)
Participation	(10%)
Projects	(20%)

Each week contributes to 12% of your grade, with the exception of the last week, which contributes 16%.

Letter grades are assigned based on the following (non-standard) criteria

A 100-92% , A- 91-88% , B+ 87-86% , B 80-85% , B- 78-79% , C+75-77% , C 67-74% , D/F 0-66%

Class Participation and Attendance Policy:

Your participation score for this class is derived from participating in the weekly threaded discussions. You will make an initial post to the discussion forum, and respond to several other students to earn credit.

You are encouraged but not required to collaborate on the projects with other students from the class. Additionally, there will be opportunities to share your finished projects with the class and receive feedback.

I will hold an office hour once per week via ConferZoom meetings which anyone enrolled in the class can join. What we actually talk about will depend on how many people attend the meeting and what seems the most relevant to talk about. These synchronous class meetings are optional, ie. not worth points, however, they may help you be successful in the class and I encourage everyone to attend when possible.

During these sessions I will spend time:

1. Address questions about the material we are covering.
2. Give examples and ideas for projects or written assignments, etc.

Homework and Late Work Policy:

This course utilizes homework problems from the external website MyOpenMath, which is set up to run in Canvas. Your score on the MyOpenMath assignments will be visible on Canvas immediately after they have been graded completed by you. You can generally repeat the online homework to improve your score. The formal due date for online homework is the Sunday night after it was assigned. However, because the semester is short, I have decided not have late penalties for online homework. This means that you can turn in the online assignments any time before the end of the semester for full credit. Please note; you will be more successful and less stressed out if you turn in the online homework the week that is assigned and not wait until the end to do it.

Written assignments have a firm deadline of Sunday night after it was initially assigned. I will post solutions to the written assignments Monday of the following week, so it does not make sense to allow late work for this.

I strongly suggest the projects are turned in on the suggested due date, late work will result in lower scores.

Like the written assignments, the discussion posts have a firm deadline of Sunday night after the prompt was posted. Since the idea is to have a meaningful discussion with the other members of the class, it is not beneficial to the other students to allow late posts which no one will read.

Your written work and projects will be graded several days after they are submitted.

Prerequisites/co-requisites/ recommended preparation

Recommended: Pre-algebra

ONLINE REQUIREMENTS - The following are required <u>online</u> courses but are recommended for all (see * in contents).

Special accommodations statement

College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability-related services and accommodations, please see me or contact Disability Services and Programs for Students. Students may make requests for alternative media by contacting DSPS based on their campus location:

- Eureka: 707-476-4280, student services building, 1st floor

Student feedback policy

I will respond within 24 hours to emails or messages on Canvas: Monday through Friday.

Graded work will be returned in a timely way. Your written work and projects will be graded several days after they are submitted. The online MyOpenMath assignments will be graded immediately.

The discussion board is a forum where you can ask questions about the reading or homework, and get help from me or your classmates. The idea is to have the class operate like a study group - with all of you working together to further your learning. This is what distinguishes an online class from a traditional distance learning or math lab course.

Use the Discussion Board to ask for help on problems you don't understand how to do. If you do understand how to do the problems, help out your classmates by answering questions on the discussion board.

I will monitor the homework discussion boards, and will respond to questions if they go unanswered, or if someone provides an incorrect response. If you have additional questions, didn't understand the answer someone gave you, or have a question that has gone unanswered, don't hesitate to email me and ask questions. However, please use the discussion boards first, so that others can benefit from your questions.

I can't stress enough that without being able to see the expression on your face, there's no way for me to judge if you understand my or a fellow student's explanation to your questions. So, you need to be proactive about your learning, and ask for more explanation when you need it. Again, you can do this via email to me, or in the discussion boards.

Proctored Exams

There will be no proctored exams for Math 5 this semester.

Student Accessibility Statement and Academic Support Information

Students will have access to this course that complies with the Americans with Disabilities Act of 1990 (ADA), Section 508 of the Rehabilitation Act of 1973, and College of the Redwoods policies. Course materials will include a text equivalent for all non-text elements; videos will include closed captioning, images will include alt-tags, hyperlinks will use descriptive/meaningful phrases instead of URLs and audio files will include transcripts. All text will be formatted for use with screen readers and all course materials will be understandable without the use of color.

Student Support Services

The following online resources are available to support your success as a student:

- CR-Online (Comprehensive information for online students)
- Library Articles & Databases
- Canvas help and tutorials
- Online Student Handbook

Counseling and Advising offers academic support and includes academic advising and educational planning

Learning Resource Center includes the following resources for students

- Academic Support Center for instructional support, tutoring, learning resources, and proctored exams.
- Library Services to promote information literacy and provide organized information resources.

- Multicultural & Diversity Center [waiting for hyperlink and Mission]
- Math Lab & Drop-in Writing Center

Special programs are also available for eligible students include

- Extended Opportunity Programs & Services (EOPS) provides financial assistance, support and encouragement for eligible income disadvantaged students at all CR locations.
- The TRiO Student Success Program provides eligible students with a variety of services including trips to 4-year universities, career assessments, and peer mentoring. Students can apply for the program in Eureka or in Del Norte
- The Veteran's Resource Center supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.
- Klamath-Trinity students can contact the CR KT Office for specific information about student support services at 530-625-4821
- The Honors Program helps students succeed in transferring to a competitive four-year school.

What is Math 5?

Unlike algebra, or geometry, the title of this course, "contemporary mathematics", does not immediately give insight into what you will be learning. The Oxford Language dictionary has this to say about the word contemporary.

con·tem·po·rar·y

adjective

1. living or occurring at the same time.

"the event was recorded by a contemporary historian"

2. belonging to or occurring in the present.

"the tension and complexities of our contemporary society"

So going with the second definition, it would be acceptable to say "students enjoy the tension and complexities of contemporary mathematics"

That was a joke, more seriously, contemporary mathematics is mathematics which **belongs** in the present. It should be mathematics which is relevant for you in 2020 attending College of the Redwoods remotely, in the time of Covid. Since your gut response might be …."uhggg wait a second… no math belongs in the present" I will take a moment to shed light on what might have motivated your feelings.

Math trauma is a real thing, it manifests as anxiety or dread, a debilitating fear of being wrong. After struggling to complete a timed mathematics test, most people experience fear, which shuts down their working memory on further trials. This makes it all but impossible to think which reinforces the idea that a person just can't do math – that they are not a math person. This fear limits access to life paths for many people, including school and career choices.

Realistically, you are likely taking math 5 since it is a required transfer level GE course which you need for your broader educational goals. For example: this might be the last math class you are ever required to take; you might be looking forwards to being over this hurdle, so you can focus on classes which you feel more affinity and confidence with.

My goal in teaching this course is to help take away the lingering bitter taste mathematics might have left on your palate after any number of negative experiences during high/low schools. No one can force you to love math when you don't, but you can condition yourself not to fear it. The course is designed to have numerous "low stakes" assessment tasks which require participation several times per week, instead of one or two "high stakes" exams. Unlike other math courses, we will have no anxiety producing "tests" in this course, instead, there are several projects which you will all you to exercise your creativity and imagination, rather than your memorization and recall abilities. If creativity is intimidating to you, there will be an option to replace the projects with solving math problems instead.

Before you leave thinking everything is butterflies and flowers, please remember that we only have 8 short weeks to accomplish what is normally taught in a 16 weeks semester. It is normally expected that you commit approximately 9 hours per to this 3 unit math class split between the lecture, homework and studying since, the summer course is half as long, the expected weekly commitment raises to 18 hours. You will likely find that the actually time commitment is considerably less than this, however please remember that we are at an accelerated pace, and you will need to devote considerable time each week to pass this class. Most students will agree that online courses require more involvement time than traditional classes. It is not uncommon to spend around 15 to 20 hours each week on a course. However, the amount of time you would normally spend commuting to a campus, waiting for class to start, and then commuting home, can now be spent constructively on the course. As a result, many studies have shown that online courses generally produce higher grades and greater learning than traditional courses. But it does require a very committed student.

The purpose of this course is to expose you to the wider world of mathematical thinking. There are two reasons for this. First, for you to understand the power of quantitative thinking and the power of numbers in solving and dealing with real world scenarios. Secondly, for you to understand that there is more to mathematics then expressions and equations.

A learning outcome is something that you should be able to do as a result of taking this course. You can think of these as skills you learn by osmosis by immersing yourself in the class, and which linger into your academic and professional career. The official course outline of record states that the learning outcomes for math 5 are:

1. Demonstrate critical thinking skills through analyzing mathematical ideas in the context of contemporary society.

2. Use mathematical skills and techniques when arguing a position on a contemporary issue.

Next, I will list the official course objectives, these guidelines direct the course content. You can see that these are quite general and there is no mention specific things like solving quadratic equations or finding the equation of an ellipse.

1. Students recognize the relevance of mathematics in the development of society.

2. Students examine mathematical concepts as expressed across various cultures and throughout history.

3. Students implement mathematical techniques to inform action.

I won't go into the entire course outline of record, if you are interested, it will be posted in the files section of this canvas shell for this course. However, to finish this discussion of "what is Math 5?" I feel it is important to list the "Themes and Issues" as stated in the course outline of record. For clarification the issues are the motifs threaded throughout the course which include the primary tensions or problems inherent in the subject matter.

Themes:

1. Critical thinking. 2. Problem solving. 3. Use of technology. 4. Communication. 5. Application to real-world situations.

Issues:

1. Realizing there are quantitative arguments on all sides of issues.

2.The influence of mathematics throughout history in wide ranging aspects of human life, such as in liberal arts, social and environmental concerns, finance, data analysis, and throughout history.

3. How to use mathematical language and arguments in essays, presentations, and arguments.

Taking an online course for the first time can be a daunting undertaking. Compared to traditional on-campus courses, they have their pros and cons. This course is primarily asynchronous, which means students and the instructor are not necessarily online at the same time. The reason for the asynchronousness is that "we" as educators, are not allowed to require students to participate in synchronous lectures via zoom this summer. Even though this is an online class, I feel that it is important to be able for you to be able to communicate directly to me if you need to. Since I do not have office hours this semester, I will hold zoom conferences which anyone from the class can attend twice per week. During these meetings, we can discuss the course material, homework problems, projects, etc. as a class. The times that we will have these meetings will be based on my availability and what works for the most students based on a poll.

Another con is the lack of physical interaction that occurs in a traditional course. This, however, is can sometimes actually be a pro. Many personal and individual biases are eliminated because we can't see each other (unless you opt to post a picture of yourself). It is possible for a person who is normally inhibited in a traditional class is very active in an online class. Also with this asynchronous model there can be multiple "conversations" happening simultaneously. You can respond to any or all of the discussion threads at any time, something that is impossible in the traditional classroom. As a result, you may get to know your fellow classmates much better than any lecture class you have taken or will take. But, when your interaction is lacking, the entire class suffers. You have to be an active member of the class.

Tentative Course schedule

This schedule includes the tentative dates, assignments, and topics for each week of the course.

Week	*Date*	*Subject*	*Assignments*
1	*6/01*	*Problem Solving & Quantitative Reasoning*	*Discussion + Online HW + Written Assignment*
2	*6/08*	*Percent's, Ratios & Dimensional Analysis*	*Discussion + Online HW + Written Assignment*
3	*6/15*	*Graph Theory and Graphing*	*Discussion + Online HW + Project 1*
4	*6/22*	*Measurements and Geometry*	*Discussion + Online HW*
5	*6/29*	*Growth Models and Finance*	*Discussion + Online HW + Written Assignment*
6	*7/6*	*Statistics*	*Discussion + Online HW + Project 2*
7	*7/13*	*More Statistics or ??*	*??*
8	*7/20*	*TBA*	*Discussion + Written Assignment + Final Project*

Online Materials

The primary textbook for this course is *Math in Society* by David Lippman. Follow this link for free unlimited access to the textbook https://www.opentextbookstore.com/mathinsociety. I suggest downloading the chapters so that they are available if you do not have an internet connection. There are numerous videos linked to each chapter which will give a greater context to the material or provide relevant remediation.

The secondary (free) textbooks for this class are from the openstax website which can access by following the links below. You can create a user profile on the openstax website, but it is not required to view or download the books.

Prealgebra: https://openstax.org/details/books/prealgebra

Statistics: https://openstax.org/details/introductory-statistics

Trigonometry: https://openstax.org/details/books/algebra-and-trigonometry

There will be many files on Canvas which you should download and read, as well as links to videos which are hosted externally to Canvas (usually on youtube)

Technology skills, requirements, and support

Students can obtain a free Office 365 license (includes Word, Excel, PowerPoint and more) with a valid CR email.

Before contacting Technical Support please visit the Online Support Page. For password issues with Canvas, Web Advisor or your mycr.redwoods.edu email, contact its@redwoods.edu or call 707-476-4160 or 800-641-0400 ext. 4160 between 8:00 A.M. and 4:00 P.M., Monday through Friday.

Canvas Information

The canvas page will be updated regularly and will contain a variety of items such as: course announcements, class documents, assignments, review resources and much more. You will be expected to check canvas regularly and be aware of announcements. Be sure to turn on your notifications if you'd like to be notified about things like new announcements, changes to assignments and due dates.
For tech help, email its@redwoods.edu or call 707-476-4160'

Gender-Inclusive Language

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is gender-inclusive and non-sexist to affirm and respect how people describe, express, and experience their gender. Just as sexist language excludes women's experiences, non-gender-inclusive language excludes the experiences of individuals whose identities may not fit the gender binary, and/or who may not identify with the sex they were assigned at birth. Gender-inclusive/non-sexist language acknowledges people of any gender (for example, first year student versus freshman, humankind versus mankind, etc.), affirms non-binary gender identifications, and recognizes the difference between biological sex and gender expression.
Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact Admissions & Records to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. It does not change your legal name in our records. See the Student Information Update form.