Math 45-54049 Contemporary Mathematics

Semester/Year: Fall 2021
Units: 3
Location: Online only
Office Hrs via ZOOM: Tues, Thurs & Fri 9am-10am, Wed 12-1pm

Instructor: Kelly Winter
Phone number: (559) 638-0300 ext 3471
Email: kelly.winter@reedleycollege.edu
In person office hours: Mondays 12:30-1:30pm (office location MAS 135)

Length: 18 weeks (Aug. 9 – Dec. 10)
Schedule
    This class is online only and Zoom office hour sessions are optional.

Prerequisite: none
ZERO TEXTBOOK COST COURSE!!

Welcome to Contemporary Mathematics! It is my desire to help each one of my students succeed and gain confidence in their math and statistics skills. I believe that all students can succeed if they stay organized, set aside consistent work time, complete all assigned work, ask questions and prepare for exams. I am here to guide you through the course, answer questions and encourage you to work hard. I am looking forward to this semester.
We will have two embedded tutors, Kim and Yeiri, available during this course. Other students in class are a good resource as well, and I would encourage you to form small groups to study and do homework together. If you have an unanswered question, join me in the Zoom sessions offered daily Monday through Friday.

Other available resources: The Math Center is functioning ONLINE and IN PERSON this semester. You can meet one-on-one with a tutor. We have great tutors available for Math 45. Please utilize this incredible resource. More information will be available on Canvas. Use the link RC Tutoring Services on the left to enroll in the RC Math Center canvas page for all of the information.

Course Description: This course provides an introduction to mathematical problem solving in diverse areas of contemporary life such as statistics, social choice, measurement, and management science for students in the arts, humanities, and social sciences. This course is transferable to both UC and CSU.

Student Learning Outcomes:
MATH-45 SLO1: Demonstrate problem solving skills by applying mathematical principles and techniques in real world areas.
MATH-45 SLO2: Apply the mathematics of finance to making consumer decisions.
MATH-45 SLO3: Examine statistical principles used to display, interpret and analyze data.

Textbook: Math in Society Edition 2.5 by David Lippman
Other Course Materials/Technology:

MyOpenMath: Our class will rely heavily on the use of online materials. To access our course materials and homework assignments, you will need to log in to MyOpenMath via Canvas. This is a FREE program that allows you to do your homework and assessments online with support. You will need to register the first time you click on an assignment.

Scanning App: You must also be able to scan your work from exams. There are many free scanning options on most smart phones. I know iphones have a scanning option from the Notes

app. I have also used the free app Genius Scan. Please make sure whatever scanning app you use that you can scan multiple pages into ONE document. It is very difficult to grade exams when I have to download multiple files for one assignment.

Makeup Work/Late Assignments:

Each week there will be homework assigned online in MyOpenMath. Each week's assignments open on Monday morning and are due the following Monday evening by midnight. This gives you plenty of time to work through each assignment and get help on questions that you may get stuck on. You are given three attempts to answer each question correctly in MyOpenMath before you will be marked down. Please use "Similar Question" in order to restart a question and receive full credit. All students in this course should spend a minimum of six hours per week outside of the classroom on homework, studying, reading the text and preparing for exams. These weekly deadlines will keep you on track for completing the course. If you are unable to meet these deadlines please email me and I will extend your times, however, you should not take advantage of this as it will make it more difficult to complete the course with less time.

Assignment Point Values

Assignment	Value
Homework & Quizzes	20%
Chapter Exams	60%
Final Exam	20%

Final Grades

Letter Grade	%
A	90 -100
B	80 – 89.4
C	70 - 79.4
D	60 - 69.4
F	0-59.4

Grading Policies/Rubrics: Please monitor your grade on Canvas. It is your responsibility to make sure that your grade is accurate. If there is a discrepancy, please email me ASAP.

ACADEMIC DISHONESTY: Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software
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copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor, depending on the severity and frequency of the incidents.

NOTE: If you have a verified need for an academic accommodation or materials in alternate media (i.e, Braille, large print, electronic text, etc.) per the Americans with Disabilities Act or section 504 of the Rehabilitation act please contact me as soon as possible.

Please refer to SCCCD polies for guidance on all matters relating to this course.

Objectives
In the process of completing the course, the student will:
1. Characterize and compare different voting systems, using plurality, borda count, or pair-wise comparison.
2. Derive the probability of succeeding at basic games of chance.
3. Describe statistical data in a variety of methods such as in using mean, median, and standard deviation.
4. Use the empirical numbers to answer statistical questions.
5. Find the apportionment of a finite number of items.
6. Use various procedures to divide items fairly.
7. Find the terms of a sequence and series.
8. Measure the rate of growth of different systems, example: linear vs. exponential growth.
9. Solve problems from the area of management science by means of linear programming.
10. Create geometric shapes using recursive construction rules.

Course Outline
A. Mathematics of Social Choice
    1. The mathematics of voting
    2. Weighted voting systems
    3. Fair division
    4. Apportionment
B. Management Science
    1. Euler circuits
    2. Hamilton circuits
    3. Networks
    4. Scheduling
C. Growth & Symmetry
    1. Spiral growth & Fibonacci's Numbers
    2. Linear & exponential growth
    3. Symmetry
    4. Fractals
    5. Financial Mathematics
D. Statistics & Probability
    1. Collecting data
    2. Descriptive statistics
    3. Normal distributions
    4. Probability