

Syllabus, MATH 101

Class: MATH 101, Math in the Social Sciences

Course Description: Voting theory, power indices, fair division, apportionment, circuits and trees, list processing, descriptive statistics, probability.

Prerequisites: None.

Course Policies

Course policies on grading, scheduling, due dates, instructor and contact information, and other section-dependent information can be found on the course Canvas page.

Alternate Exams

All exams must be taken at the times and dates stated on the course Canvas page. The ONLY exceptions are conflicts due to a university approved absence (for which a special letter is required) and events beyond the student's control that cannot be rescheduled (e.g. hospitalization). In either case, it is the student's responsibility to inform the instructor well ahead of a conflict with a university event or as soon as possible in case of a medical emergency and to provide written documentation. Students will be required to provide written documentation of their emergency before they will be allowed to make up any missed exam.

If a student has a university approved absence or documentable emergency and needs to schedule an alternate exam, then they must do the following, and their instructor will then provide them with instructions for taking the exam at an alternate day/time.

Contact your instructor via email at least one week prior to the university approved absence or as soon as possible after a documentable emergency. Provide appropriate documentation. If you have a serious medical emergency, you will need to obtain medical documentation from a doctor who has examined you. The documentation must specifically and explicitly attest to you not being physically able to take the exam. A note that only documents a visit to a doctor will NOT excuse you from an exam.

Academic Integrity

By submitting quizzes and exams, you certify that it is your own work. Courses in the Mathematics Department adhere to the Academic Integrity Policy of the CSU General Catalog and the Student Conduct Code (Section 1.6 of the course catalog). At a minimum, violations will result in a grading penalty in this course and a report to the Student Resolution Center. See more details at <https://catalog.colostate.edu/general-catalog/policies/students-responsibilities/#academic-integrity> and <https://tilt.colostate.edu/Integrity/Pledge>.

Disabilities

CSU is committed to providing reasonable accommodations for all persons with disabilities. If you are a student with a disability or chronic health condition and you need accommodations, please contact the Student Disability Center (SDC) as soon as possible to initiate the accommodation process. The SDC is located in room 121 of the TILT Building. Their phone is (970) 491-6385 and website is <https://disabilitycenter.colostate.edu/>.

Your instructor will need an accommodation letter from the Student Disability Center (SDC) before accommodations are implemented. Please email appropriate forms to your instructor no less than one week before an exam and have the forms ready to be filled out. Only one form is required for all midterms and one form for the final exam. These students must schedule their exams with the SDC at least one week in advance of each midterm and the final.

Religious Observances and Class Attendance

CSU has a legal obligation to accommodate students' absences due to religious observances. For such an accommodation, it is the student's responsibility to complete the Religious Accommodation Request Form at the beginning of each semester and submit the request via the Office of the Vice President for Student Affairs website. The Dean of Students will communicate with the instructor regarding the student's absence and the student is instructed to discuss how best to ensure an accommodation related to class conflicts. For religious observances that cannot reasonably be anticipated at the beginning of the semester, students must follow the procedure above as soon as possible after the course conflict is identified. If a student knows that a particular course or section of the course will have multiple conflicts with his or her religious obligations, the student is advised to locate another course section or defer taking the course to a different semester. In the event of a conflict in regards to this policy, individuals may appeal using established CSU procedures. Instructors are advised to provide reasonable accommodations to ensure compliance with CSU's obligations. See more details regarding attendance policies at catalog.colostate.edu/general-catalog/academic-standards/academic-policies.

Discrimination and Harassment

CSU is committed to providing an environment that respects the dignity and worth of every member of its community. CSU strives to create and maintain a work and study environment that is fair, inclusive, and responsible so that each member of the CSU community is treated with dignity and respect and is rewarded for relevant considerations such as ability and performance. CSU has adopted a comprehensive policy to define the types of conduct that are prohibited and to prevent harm arising from discrimination, harassment, sexual harassment, sexual misconduct, domestic violence, dating violence, stalking, and retaliation. Conduct that is discriminatory or harmful under the policy inhibits the achievement of the stated goals. All students, faculty, staff, and other persons having business with CSU are expected to know and follow this policy. Details regarding what is involved in bringing a complaint and the procedures for informal and formal resolution are available from the Office of Support and Safety Assessment for student-to-student behavior and the Office of Equal Opportunity for matters involving non-students such as faculty, staff, affiliates, or visitors and matters involving a student and non-student person. See more details at <https://catalog.colostate.edu/general-catalog/policies/discrimination-harassment/>

Learning Objectives

The Colorado Commission on Higher Education has approved MATH 101 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT-MA1 category. For transferring students, successful completion with a minimum C- grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to <http://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html>.

GT Pathways Mathematics (GT-MA1) Content Criteria:

1. Demonstrate good problem-solving habits, including:
 - Estimating solutions and recognizing unreasonable results.
 - Considering a variety of approaches to a given problem, and selecting one that is appropriate.
 - Interpreting solutions correctly.
2. Generate and interpret symbolic, graphical, numerical, and verbal (written or oral) representations of mathematical ideas.
3. Communicate mathematical ideas in written and/or oral form using appropriate mathematical language, notation, and style.

4. Apply mathematical concepts, procedures, and techniques appropriate to the course.
5. Recognize and apply patterns or mathematical structure.
6. Utilize and integrate appropriate technology.

GT Pathways Mathematics (GT-MA1) Competencies:

Quantitative Literacy

Interpret Information

- Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).

Represent Information

- Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

Perform Calculations

- Solve problems or equations at the appropriate course level.
- Use appropriate mathematical notation.
- Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.

Apply and Analyze Information

- Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
- Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
- Make judgments based on mathematical analysis appropriate to the course level.

Communicate Using Mathematical Forms

- Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).

Problem Solving

Define a problem

- Construct a detailed and comprehensive problem statement or goal.
- Identify relevant contextual factors.

Propose a Strategy

- Identify reasonable approaches to solving the problem within the given context.

Evaluate Potential Strategies

- Provide an evaluation of the potential strategy(ies) which may include: i. the history of the problem, ii. the logic behind the potential strategy(ies), iii. the feasibility of the proposed strategy(ies), and iv. the potential impacts of the proposed strategy(ies).
- Choose a feasible strategy.

Apply a Strategy

- Implement chosen approach(es).
- Gauge success of the chosen strategy(ies) and revise as needed.

Evaluate Results

- Discuss and review results relative to the context of the problem.
- Make recommendations for further work (where applicable).