Course and Instructor Information

Instructor Name: Joyce Treulieb

CMC Phone: 970-870-4475

Other Phone:

CMC Fax:

CMC e-mail: jtreulieb@coloradomtn.edu

Office Number: Bristol 314

Office Hours: Mon-Thurs, 12:00-12:20 and 2:00-3:00 (2:00-3:00 will be held in The Library)! Tuesday/Thursday 4:50-5:15.

Course Description:

Includes derivatives, integrals, and their applications, with attention restricted to algebraic, exponential, and logarithmic functions for business, life science and/or social science majors. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

M/W 3:10 PM - 4:50 PM
1/17/2022 - 5/4/2022
Room: Bristol Hall, 122 Lecture

Online people will join via Webex. Links will be posted in Canvas under the Cisco Webex link on the left of the page.

• link: **https://cmc.webex.com/meet/jtreulieb (https://cmc.webex.com/meet/jtreulieb,)** is the link for online office hours.

We will do a class project. It will involve going outside to the ski mountain. (You do not need to ski).

All homework and tests will be posted, and will be on Canvas as multiple choice. Tests must be taken during your regular class time, and you will have the same amount of time. .

Course Start/Stop Date: 1/17/2022 - 5/4/2022

No Show Date: 01/26/22

I am required to report any "no-show" student to the Registrar's office. No-Show is determined based on your attendance and engagement in the first seven days of this course. You will be reported as a

no-show for this course if you have not attended our first In-Person or virtual class (Flex or Online) meeting

nor logged into Canvas and completed Insert the specifics of your No Show assignment here within the first seven days from the course start date.

As per the CMC catalog, if you are dropped for non-attendance, a refund is not automatic nor guaranteed. If you have not attended, be sure to check Student Planning to see whether you are still registered in the class. If you are still registered and you do not attend, you risk receiving a failing grade.

If you are dropped as a no-show student, class reinstatement cannot occur without significant documentation of extenuating circumstances. You would first need to contact the course instructor for approval. If reinstatement is approved, you would need to proceed with the Late Registration process.

No-Show Reporting & Financial Aid: If a student is dropped from a course (or courses) for non-attendance, the resultant loss in credit hours may cause a reduction and/or cancellation of his/her financial aid award. Like class reinstatement, financial aid awards can only be reinstated with documentation of extreme extenuating circumstances. Reinstatement in a class DOES NOT guarantee financial aid reinstatement.

Withdrawal Date: 04/09/2022

Refund Date: 02/02/2022

Credits: 4

Prerequisite: MAT-121 with a grade of C- or higher, or appropriate placement test

Required Course Materials

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Required Course Materials

Calculus and Its Applications

By Bittinger, Marvin L.; Ellenbogen, David J.; Surgent, Scott J.

ISBN:

9780321694331

Edition: 10th

Go to Basecamp > Employee Resources > Learning Materials Program (Faculty Adoptions) to verify your adoptions before the semester begins. Follow the steps for Canvas integrations to ensure that digital materials are accessible to students. Integration instructions are available on Basecamp > CMC Apps > Learning Hub > Digital Textbooks and Resources. Please see the Learning Materials Program website (https://coloradomtn.ecampus.com/) or contact LMP Customer Service at 844-523-9056 or **teamcmc@ecampus.com (mailto:teamcmc@ecampus.com)** if you have questions. Students receive multiple reminders. In the event that a student does not have textbooks or digital access it is usually because they have not verified. Provide the CMC LMP Customer Service number for ALL order or textbook return questions 844-523-9056.

Credit-based students participate in CMC's Learning Materials Program (LMP). This program provides all physical or digital textbooks and course materials to students as rentals for an all-inclusive flat per credit fee. There are a few exceptions to included materials such as Lab Kits and a select number of excluded courses. Access to detailed information about the Learning Materials Program, including how to receive and return your textbooks, can be found at the Learning Materials Program website (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fclasses%2Ftextbooks%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C1f3cbd05ae8a43c6076a08d93b228c6e%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637605841828908390%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=rejoBgblrLch6RGDli7CV%2BCfbo8H5CtGires%2BduFIbQ%3D&reserved=0) .

Course Description

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Includes derivatives, integrals, and their applications, with attention restricted to algebraic, exponential, and logarithmic functions for business, life science and/or social science majors. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

Student Learning Outcomes, Competencies, and Skills

Guaranteed Transfer (GT) Pathways Course Statement:
The Colorado Commission on Higher Education has approved **MAT-120** 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 **https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html (https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html)** .

GT-MA1: MATHEMATICS CONTENT CRITERIA
Students should be able to:

1. Demonstrate good problem-solving habits, including:
    1. Estimating solutions and recognizing unreasonable results.
    2. Considering a variety of approaches to a given problem, and selecting one that is appropriate.
    3. 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-MA1 COMPETENCY & STUDENT LEARNING OUTCOMES

Competency: Quantitative Literacy:

Students should be able to:

1. Interpret Information
    1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
2. Represent Information

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

3. Perform Calculations
    1. Solve problems or equations at the appropriate course level.
    2. Use appropriate mathematical notation.
    3. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.
4. Apply and Analyze Information
    1. 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.
    2. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
    3. Make judgments based on mathematical analysis appropriate to the course level.
5. Communicate Using Mathematical Forms
    1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).
6. Address Assumptions (required of statistics courses only)
    1. Describe and support assumptions in estimation, modeling, and data analysis, used as appropriate for t

Evaluation Method

Homework

Homework will be a part of Canvas Quizzes. It will be due once a week, on the first class of the week. There will be some multiple choice questions, and some additional practice problems to do on your own.

Homework will be worth 15% of your total grade.

Exams There are three exams, and one project (each 15% of your grade) and a

cumulative final worth 25% of your grade.

Class Project: There will be a class project worth 15% of your grade.

Grades Your grade is based on the following percentage:

90-100: A

80-89: B

70-79: C

60-69: D

Below 60: F

Note: Pluses and minuses are given at the instructor's discretion based on the natural breaks in the grading. Usually, 89 is an A-, and 88 is a B+

Class Management

Make-ups will not be given unless extreme circumstances exist, and then only with documentation (i.e. death certificate, doctor's note). In lieu of make-ups, one missing exam can be replaced with the final exam score. Also, 2 homeworks will be dropped. If on a school field-trip, documentation must be provided, and the exam must be made up before the exam is handed back to the class. Otherwise, the missing exam will be replaced with the final exam score. If your lowest exam score is not a zero, and your final exam score is higher; your lowest exam score will be replaced with your final.

Perfect attendance will be rewarded with 5% added to your lowest test score. Attendance will be taken by Webex.

Students are responsible for course materials from assigned text(s) and reading, lectures, labs, and other assignments as required. The instructor may alter any, or all, of this syllabus during the semester as the learning environment requires. Attendance at all class meetings is expected.

A student judged to have engaged in academic misconduct as defined in the "Academic Policies and Requirements" section of the Colorado Mountain College Student Handbook will, at a minimum, receive a "zero" for the work in question. The student may also be removed from the class, resulting in a failing grade. All student course material may be submitted to turnitin.com (or another anti-plagiarism program) at the instructor's discretion. "Academic Expectations," the "Student Code of Conduct and Judicial Process" and more information about academic misconduct can be found in the Student Handbook.

NOTE: Leaving class early is not permitted without prior notification to the instructor.

Students are responsible for course materials from assigned text(s) and reading, lectures, labs, and other assignments as required.

The instructor may alter any, or all, of this syllabus during the semester as the learning environment requires. Students will be notified in writing of changes.

Attendance at all class meetings is expected.

All homework and announcements will be posted on Canvas. Everything that comes up will be in announcements. You need to check them regularly.

We will be doing a class project that will involve collecting data for a ski/snowboard project.

Tentative Course Schedule

NOTE: This schedule is subject to change at any time, depending on instructor evaluation of student skills/understanding/knowledge. See Canvas for more information.

Jan	17	M	R.4	Review – Slope and Linear Functions
	19	W	R.5	Other Functions and Models
			A	Appendix Review - Exponents
	24	M	1.1	Limits: Numerical and Graphical
			1.2	Algebraic Limits and Continuity
	26	W	1.3	Average Rates of Change
			1.4	Differentiation with Difference Quotients
	31	M	1.5	Power and Sum-Difference Rules
Feb	02	W	1.6	Product and Quotient Rules
	07	M	1.7	Chain Rule
			1.8	Higher-Order Derivatives
	09	W		Review
	14	M		**Exam 1**
	16	W	2.1	Using First Deriv. To Sketch Graphs
	21	M	2.2	Using 2nd Deriv. To Sketch Graphs
	23	W	2.3	Graph Sketching: Rational Functions

	28	M	2.3	Graph Sketching: Rational Functions
Mar	02	W	2.4	Absolute Max/Min Problems
	08	M	2.5	Max/Min Business Applications
	09	W	2.6	Marginals and Differentials
	14	M		Spring Break – No Class
	16	W		Spring Break – No Class
	21	M	2.7	Implicit Differentiation/Related Rates
	23	W		Review
	28	M		**Exam 2**
	30	W	3.1 3.2	Exponential Functions Logarithmic Functions
Apr	4	M		Class Project
	6	W	4.1 4.2	Area Under a Graph Area, Antiderivatives and Integrals
	11	M	4.3	Area and Definite Integrals
	13	W	4.4	Properties of Definite Integrals
	18	M	4.5	Integration by Subsitution
	20	W		Review
	25	M		**Exam #3**
	27	W		Review

2	M	Review
4	W	**Final Exam**

CMC Libraries & Learning Commons

As a CMC student, you have access to the CMC Libraries both in-person and virtually. You have 24/7 access to thousands of online journals, magazines, newspapers, e-books, audiobooks, videos, images, career resources, and practice tests from the CMC Libraries website (https://library.coloradomtn.edu/home) or from the Libraries link in Basecamp and Canvas.

The CMC Libraries Team is here to help you. You can use any or all of these ways to connect with your helpful, professional library staff!

- In-person at the Dillon, Edwards, Leadville, Spring Valley, and Steamboat Springs campuses
- Virtual library (https://library.coloradomtn.edu/home/help) support via email, 24/7 chat, telephone, or video conferencing
- Online resources (https://library.coloradomtn.edu/home/modules) such as video tutorials

Student Information and Support Services

A. **Right to Know:** The College is required by law to share certain types of information with students. The Right to Know website (https://coloradomtn.edu/your-right-to-know/) includes information including disability services, complaint processes, policies and procedures, textbook information, registration, attendance and grading, graduation rates, and more. In addition, Student Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fstudent-services%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=xpm3VdeDA9wa8LvR1TNsl6pdFdD%2BiCYO%2FhA1xfnioUs%3D&reserved=0) offers resources to promote your well-being and success. Take advantage of these programs and services, which include academic support and advising, access and disability services, career services, veterans' benefits, housing, orientations, food and nutrition support, and financial aid. Reach out and find support at CMC Counseling Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.sharepoint.com%2Fsites%2Fcounselingservices&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=%2BhxIdVsR8VaRPMx0LItI3rDg4S7M1QhZ48yEV%2BTUBZs%3D&reserved=0), You@CMC (https://you.coloradomtn.edu/), and Colorado Crisis Services (https://coloradocrisisservices.org/) **(mailto:mental%20health%20counseling%20services,%20You@CMC,%20the%20Colorado%20Crisis%20Services%20,)** .

B. **Students Rights and Responsibilities**: The CMC Student Handbook (https://coloradomtn.edu/student-services/) outlines the expectations for student conduct as well as the college's academic policies and expectations. This includes expectations for appropriate use of technology, students' rights and responsibilities within and outside of the classroom, and academic policies and requirements. Classroom behavior that disrupts the teaching and learning environment is unacceptable.

C. **Notice of Nondiscrimination**: Colorado Mountain College does not discriminate on the basis of age, color, disability, gender identity, marital status, national or ethnic origin, political affiliation, race, religion, sex (including pregnancy), sexual orientation, veteran status, and family and genetic information, or in its programs and activities, as required by Harassment and Discrimination Prevention (Title IX) of the Education Amendments of 1972, Title II of the Americans with Disabilities Act of 1990, as amended, Section 504 of the Rehabilitation Act of

1973, Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and as provided in other applicable statutes and College policies. The College prohibits sexual and gender-based harassment, including sexual assault, and other forms of interpersonal violence. To obtain more information regarding non-discrimination policies, visit the Notice of Nondiscrimination website (https://coloradomtn.edu/notice-of-nondiscrimination/) or contact Lisa Doak, Harassment and Discrimination Prevention (Title IX) Coordinator, **ldoak@coloradomtn.edu (mailto:ldoak@coloradomtn.edu)**, 970-947-8351, or Angela Wurtsmith, Director of Human Resources, **awurtsmith@coloradomtn.edu (mailto:awurtsmith@coloradomtn.edu)**, 970-947-8311.

Course and Instructor Information

Course Information:

Course Title: Math For Liberal Arts

Course Code: MAT-120 - SB01

Credits: 4

Prerequisite: MAT-055 or MAT-050 or Accuplacer score of 61

Semester: Fall 2022

Format (https://coloradomtn.edu/classes/class-types-fa/): In-Person

Meeting Days & Times:

T/Th 12:20 PM - 2:00 PM
8/23/2022 - 12/8/2022
Room: SAB 216
We will do a class project. It will involve playing bridge.

Course Start/Stop Date: 8/23/2022 - 12/8/2022

No Show Date: 8/31/2022

No Show Attendance Reporting Date: For credit courses that start at the beginning of the semester, faculty must report "Never Attended" (no shows) on the second Wednesday of the semester. For late starting classes, faculty must report on the seventh day after the course start date.

No Show Attendance Reporting is based on your attendance and engagement. If you are a No Show, you may be dropped from the course and this may impact your financial aid. Go to the **No Show Attendance Reporting website (https://catalog.coloradomtn.edu/content.php?catoid=14&navoid=1623#noshow)** for more information.

Withdrawal Date: 11/14//2022

Refund Date: 9/08/2022

Instructor Information:

Instructor Name: Joyce Treulieb

CMC Phone: 970-870-4475

Other Phone:

CMC Fax:

CMC e-mail: **jtreulieb@coloradomtn.edu (mailto:jtreulieb@coloradomtn.edu)**

Office Number: Bristol 314

Office Hours: Mon-Thurs, 12:00-12:20 and 2:00-3:00 (2:00-3:00 will be held in The Library)! Tuesday/Thursday 4:50-5:15.

Required Course Materials

Required Course Materials

A Survey of Mathematics with Applications

By Angel, Allen R.; Abbott, Christine D.; Runde, Dennis C.

ISBN:

9780321501073

Edition: 8th

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Course Description

Course Description:

Develops mathematical and problem-solving skills. Appropriate technological skills are included. Content is selected to highlight connections between mathematics and the society in which we live. Topics include set theory and logic, mathematical modeling, probability and statistical methods, and consumer mathematics. Additional content will include one topic in geometry, numeration systems, decision theory, or management science.~~This course is one of the Statewide Guaranteed Transfer courses. GT-MA1

Competency: Quantitative Literacy:

Students should be able to:

1. Interpret Information
    1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
2. Represent Information
    1. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).
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4. Apply and Analyze Information
    1. 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.
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    3. Make judgments based on mathematical analysis appropriate to the course level.
5. Communicate Using Mathematical Forms
    1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).
6. Address Assumptions (required of statistics courses only)
    1. Describe and support assumptions in estimation, modeling, and data analysis, used as appropriate for the course.

REQUIRED COURSE LEARNING OUTCOMES :

1. Apply formal logic and sets to discriminate between valid and invalid arguments.
2. Apply mathematical modeling to real world applications.
3. Utilize appropriate models to solve real world financial problems.
4. Apply probability and statistics to discriminate between valid and invalid conclusions.

Student Learning Outcomes, Competencies, and Skills

Guaranteed Transfer (GT) Pathways Course Statement:
The Colorado Commission on Higher Education has approved **MAT-120** 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 **https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html (https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html)** .

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Students should be able to:

1. Demonstrate good problem-solving habits, including:
    1. Estimating solutions and recognizing unreasonable results.
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GT-MA1 COMPETENCY & STUDENT LEARNING OUTCOMES

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Evaluation Method

Homework

Homework will be a part of Canvas Quizzes. It will be due once a week, on the first class of the week. There will be some multiple choice questions, and some additional practice problems to do on your own. We will also do group work, in class, that will be a part of your homework grade.

Homework will be worth 15% of your total grade.

Exams There are three exams, and one project (each 15% of your grade) and a

cumulative final worth 25% of your grade.

Class Project: There will be a class project worth 15% of your grade.

Grades Your grade is based on the following percentage:

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Attendance at all class meetings is expected.

All homework and announcements will be posted on Canvas. Everything that comes up will be in announcements. You need to check them regularly.

We will be doing a class project that will involve learning to play bridge. We may incorporate other games into the class. A paper written about these topics will be required and counts as a test score.

CMC Libraries & Learning Commons

As a CMC student, you have access to the CMC Libraries both in-person and virtually. You have 24/7 access to thousands of online journals, magazines, newspapers, e-books, audiobooks, videos, images, career resources, and practice tests from the CMC Libraries website (https://library.coloradomtn.edu/home) or from the Libraries link in Basecamp and Canvas.

The CMC Libraries Team is here to help you. You can use any or all of these ways to connect with your helpful, professional library staff!

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- Virtual library (https://library.coloradomtn.edu/home/help) support via email, 24/7 chat, telephone, or video conferencing
- Online resources (https://library.coloradomtn.edu/home/modules) such as video tutorials

Student Information and Support Services

A. **Right to Know:** The College is required by law to share certain types of information with students. The Right to Know website (https://coloradomtn.edu/your-right-to-know/) includes information including disability services, complaint processes, policies and procedures, textbook information, registration, attendance and grading, graduation rates, and more. In addition, Student Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fstudent-services%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=xpm3VdeDA9wa8LvR1TNsl6pdFdD%2BiCYO%2FhA1xfnioUs%3D&reserved=0) offers resources to promote your well-being and success. Take advantage of these programs and services, which include academic support and advising, access and disability services, career services, veterans' benefits, housing, orientations, food and nutrition support, and financial aid. Reach out and find support at CMC Counseling Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.sharepoint.com%2Fsites%2Fcounselingservices&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=%2BhxIdVsR8VaRPMx0LItI3rDg4S7M1QhZ48yEV%2BTUBZs%3D&reserved=0), You@CMC (https://you.coloradomtn.edu/), and Colorado Crisis Services (https://coloradocrisisservices.org/) **(mailto:mental%20health%20counseling%20services,%20You@CMC,%20the%20Colorado%20Crisis%20Services%20,)** .

B. **Students Rights and Responsibilities**: The CMC Student Handbook (https://coloradomtn.edu/student-services/) outlines the expectations for student conduct as well as the college's academic policies and expectations. This includes expectations for appropriate use of technology, students' rights and responsibilities within and outside of the classroom, and academic policies and requirements. Classroom behavior that disrupts the teaching and learning environment is unacceptable.

C. **Notice of Nondiscrimination**: Colorado Mountain College does not discriminate on the basis of age, color, disability, gender identity, marital status, national or ethnic origin, political affiliation, race, religion, sex (including pregnancy), sexual orientation, veteran status, and family and genetic information, or in its programs and activities, as required by Harassment and Discrimination Prevention (Title IX) of the Education Amendments of 1972, Title II of the Americans with Disabilities Act of 1990, as amended, Section 504 of the Rehabilitation Act of

1973, Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and as provided in other applicable statutes and College policies. The College prohibits sexual and gender-based harassment, including sexual assault, and other forms of interpersonal violence. To obtain more information regarding non-discrimination policies, visit the Notice of Nondiscrimination website (https://coloradomtn.edu/notice-of-nondiscrimination/) or contact Lisa Doak, Harassment and Discrimination Prevention (Title IX) Coordinator, **ldoak@coloradomtn.edu** (mailto:ldoak@coloradomtn.edu), 970-947-8351, or Angela Wurtsmith, Director of Human Resources, **awurtsmith@coloradomtn.edu** (mailto:awurtsmith@coloradomtn.edu), 970-947-8311.

Tentative Course Schedule

NOTE: This schedule is subject to change at any time, depending on instructor evaluation of student skills/understanding/knowledge. See Canvas for more information.

			Intro	
Aug	23	T		
			1.1	Inductive Reasoning
			2.1	Set Concepts
	25	Th		
			2.2	Subsets
			2.3	Venn Diagrams
	30	T		
			2.4	Venn Diagrams with 3 sets
			2.5	Applications of Sets
Sep	1	Th		
			2.6	Infinite Sets
	6	T	3.1	Logical Connectives
	8	Th	3.2	Truth Tables
	13	T	3.3	Truth Tables for Conditional and Biconditional
	15	Th		Review
	20	T		**Exam #1**
	22	Th		Tower of Hanoi
			6.7	Linear Regression
	27	T		
				Class Assessment Assignment
	29	Th	11.2	Personal Loans and Simple Interest
			11.3	Compound Interest

			11.4	Installment Buying
Oct	4	T	11.6	Annuities
	6	Th		Review
	11	T		**Exam #2**
			12.1	The Nature of Probability
	13	Th	12.2	Theoretical Probability
			12.3	Odds
				Bridge Project and Explanation
	18	T	12.6	Or and And Problems
			12.7	Conditional Probability
	20	Th		Bridge
			13.1	Sampling Techniques
			13.2	The Misuses of Statistics
	25	T	13.3	Frequency Distributions
			13.4	Statistical Graphs
			13.5	Measures of Central Tendency
	27	Th	13.6	Measures of Dispersion
Nov	1	T	13.7	Normal Distribution
	3	Th		Review
	8	T		**Exam #3**
	10	Th	9.3	Perimeter and Area
			9.4	Volume and Surface Area

	15	T	9.6	Topology
			9.7	Non-Euclidean Geometry and Fractal Geometry
	17	Th		Exponential Regression
	22	T	6.10	Exponential Growth and Decay
	24	Th		No Class, Thanksgiving
	29	T		Reversi Game
Dec	1	Th		Review
	6	T		Review
	8	Th		**Final**

Course and Instructor Information

Course Information:

Course Title: College Algebra

Course Code: MAT-121-SB01

Credits: 4

Prerequisite: MAT-099 or MAT-055 or appropriate placement score

Semester: Fall 2022

Format (https://coloradomtn.edu/classes/class-types-fa/): In-Person

Course Description:

Focuses on a variety of functions and the exploration of their graphs. Topics include: equations and inequalities, operations on functions, exponential and logarithmic functions, linear and non-linear systems, and an introduction to conic sections. This course provides essential skills for Science, Technology, Engineering, and Math (STEM) pathways. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

Meeting Days & Times:

M/W 12:20 PM - 2:00 PM
8/22/2022 - 12/7/2022

Course Location/Format:

Steamboat Academic Building, 217 Lecture

We will do a class project. It will involve going outside to the ski mountain. (You do not need to ski).

Course Start/Stop Date: 8/22/2022 - 12/7/2022

No Show Date: 8/31/2022

No Show Attendance Reporting Date: For credit courses that start at the beginning of the semester, faculty must report "Never Attended" (no shows) on the second Wednesday of the semester. For late starting classes, faculty must report on the seventh day after the course start date.

No Show Attendance Reporting is based on your attendance and engagement. If you are a No Show, you may be dropped from the course and this may impact your financial aid. Go to the No Show Attendance Reporting website (https://catalog.coloradomtn.edu/content.php?catoid=14&navoid=1623#noshow) for more information.

Withdrawal Date: 11/14//2022

Refund Date: 9/7/2022

Instructor Information:

Instructor Name: Joyce Treulieb

CMC Phone: 970-870-4475

Other Phone:

CMC Fax:

CMC e-mail: **jtreulieb@coloradomtn.edu (mailto:jtreulieb@coloradomtn.edu)**

Office Number: Bristol 314

Office Hours: Mon-Thurs, 12:00-12:20 and 2:00-3:00 (2:00-3:00 will be held in The Library)! Tuesday/Thursday 4:50-5:15.

Required Course Materials

College Algebra

By Stewart, James; Redlin, Lothar; Watson, Saleem

ISBN:

9781305115545

Edition: 7th

Go to Basecamp > Employee Resources > Learning Materials Program (Faculty Adoptions) to verify your adoptions before the semester begins. Follow the steps for Canvas integrations to ensure that digital materials are accessible to students. Integration instructions are available on Basecamp > CMC Apps > Learning Hub > Digital Textbooks and Resources. Please see the Learning Materials Program website (https://coloradomtn.ecampus.com/) or contact LMP Customer Service at 844-523-9056 or **teamcmc@ecampus.com (mailto:teamcmc@ecampus.com)** if you have questions. Students receive multiple reminders. In the event that a student does not have textbooks or digital access it is usually because they have not verified. Provide the CMC LMP Customer Service number for ALL order or textbook return questions 844-523-9056.

Credit-based students participate in CMC's Learning Materials Program (LMP). This program provides all physical or digital textbooks and course materials to students as rentals for an all-inclusive flat per credit fee. There are a few exceptions to included materials such as Lab Kits and a select number of excluded courses. Access to detailed information about the Learning Materials Program, including how to receive and return your textbooks, can be found at the Learning Materials Program website (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fclasses%2Ftextbooks%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C1f3cbd05ae8a43c6076a08d93b228c6e%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637605841828908390%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=rejoBgblrLch6RGDIi7CV%2BCfbo8H5CtGires%2BduFIbQ%3D&reserved=0) .

Course Description

Course Description:

Focuses on a variety of functions and the exploration of their graphs. Topics include: equations and inequalities, operations on functions, exponential and logarithmic functions, linear and non-linear systems, and an introduction to conic sections. This course provides essential skills for Science, Technology, Engineering, and Math (STEM) pathways. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

REQUIRED COURSE LEARNING OUTCOMES :

1. Identify properties of functions including domain, range, increasing and decreasing.
2. Apply function notation.
3. Determine the inverse of a function.
4. Examine functions algebraically.
5. Analyze behavior and roots of polynomial functions.
6. Solve polynomial, rational and absolute value equations and inequalities.
7. Analyze polynomial, exponential, logarithmic and rational functions.
8. Create graphs of polynomial, exponential, logarithmic and rational functions.
9. Solve exponential and logarithmic equations.
10. Analyze piecewise functions.
11. Graph parent functions and their transformations.
12. Utilize algebraic techniques to solve application problems.
13. Solve systems of equations.
14. Classify conic sections.

Student Learning Outcomes, Competencies, and Skills

Guaranteed Transfer (GT) Pathways Course Statement:
The Colorado Commission on Higher Education has approved **MAT-120** 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 https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html (https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html) .

GT-MA1: MATHEMATICS CONTENT CRITERIA
Students should be able to:

1. Demonstrate good problem-solving habits, including:
    1. Estimating solutions and recognizing unreasonable results.
    2. Considering a variety of approaches to a given problem, and selecting one that is appropriate.
    3. 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-MA1 COMPETENCY & STUDENT LEARNING OUTCOMES

Competency: Quantitative Literacy:

Students should be able to:

1. Interpret Information
    1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
2. Represent Information

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

3. Perform Calculations
    1. Solve problems or equations at the appropriate course level.
    2. Use appropriate mathematical notation.
    3. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.
4. Apply and Analyze Information
    1. 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.
    2. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
    3. Make judgments based on mathematical analysis appropriate to the course level.
5. Communicate Using Mathematical Forms
    1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).
6. Address Assumptions (required of statistics courses only)
    1. Describe and support assumptions in estimation, modeling, and data analysis, used as appropriate for the course.

REQUIRED COURSE LEARNING OUTCOMES :

1. Identify properties of functions including domain, range, increasing and decreasing.
2. Apply function notation.
3. Determine the inverse of a function.
4. Examine functions algebraically.
5. Analyze behavior and roots of polynomial functions.
6. Solve polynomial, rational and absolute value equations and inequalities.
7. Analyze polynomial, exponential, logarithmic and rational functions.
8. Create graphs of polynomial, exponential, logarithmic and rational functions.
9. Solve exponential and logarithmic equations.
10. Analyze piecewise functions.
11. Graph parent functions and their transformations.
12. Utilize algebraic techniques to solve application problems.
13. Solve systems of equations.
14. Classify conic sections.

Start Date: 08/25/2020 - End Date: 12/10/2020 Withdraw Date: 11/13/2020 Refund Date: 09/15/2020

Evaluation Method

Homework

Homework will be a part of Canvas Quizzes. It will be due once a week, on the first class of the week. There will be some multiple choice questions, and some additional practice problems to do on your own. We will also do group work, in class, that will be a part of your homework grade.

Homework will be worth 15% of your total grade.

Exams There are three exams, and one project (each 15% of your grade) and a

cumulative final worth 25% of your grade.

Class Project: There will be a class project worth 15% of your grade.

Grades Your grade is based on the following percentage:

90-100: A

80-89: B

70-79: C

60-69: D

Below 60: F

Note: Pluses and minuses are given at the instructor's discretion based on the natural breaks in the grading. Usually, 89 is an A-, and 88 is a B+

Class Management

Make-ups will not be given unless extreme circumstances exist, and then only with documentation (i.e. death certificate, doctor's note). In lieu of make-ups, one missing exam can be replaced with the final exam score. Also, 2 homeworks will be dropped. If on a school field-trip, documentation must be provided, and the exam must be made up before the exam is handed back to the class. Otherwise, the missing exam will be replaced with the final exam score. If your lowest exam score is not a zero, and your final exam score is higher; your lowest exam score will be replaced with your final.

Perfect attendance will be rewarded with 5% added to your lowest test score. Attendance must be face-to-face for extra credit.

Students are responsible for course materials from assigned text(s) and reading, lectures, labs, and other assignments as required. The instructor may alter any, or all, of this syllabus during the semester as the learning environment requires. Attendance at all class meetings is expected.

A student judged to have engaged in academic misconduct as defined in the "Academic Policies and Requirements" section of the Colorado Mountain College Student Handbook will, at a minimum, receive a "zero" for the work in question. The student may also be removed from the class, resulting in a failing grade. All student course material may be submitted to turnitin.com (or another anti-plagiarism program) at the instructor's discretion. "Academic Expectations," the "Student Code of Conduct and Judicial Process" and more information about academic misconduct can be found in the Student Handbook.

NOTE: Leaving class early is not permitted without prior notification to the instructor.

Students are responsible for course materials from assigned text(s) and reading, lectures, labs, and other assignments as required.

The instructor may alter any, or all, of this syllabus during the semester as the learning environment requires. Students will be notified in writing of changes.

Attendance at all class meetings is expected.

All homework and announcements will be posted on Canvas. Everything that comes up will be in announcements. You need to check them regularly.

We will be doing a class project that will involve an application of skiing/snowboarding or standing at the bottom as a timer. We will meet outside. The project will also be an application of Excel.

CMC Libraries & Learning Commons

As a CMC student, you have access to the CMC Libraries both in-person and virtually. You have 24/7 access to thousands of online journals, magazines, newspapers, e-books, audiobooks, videos, images, career resources, and practice tests from the CMC Libraries website (https://library.coloradomtn.edu/home) or from the Libraries link in Basecamp and Canvas.

The CMC Libraries Team is here to help you. You can use any or all of these ways to connect with your helpful, professional library staff!

- In-person at the Dillon, Edwards, Leadville, Spring Valley, and Steamboat Springs campuses
- Virtual library (https://library.coloradomtn.edu/home/help) support via email, 24/7 chat, telephone, or video conferencing
- Online resources (https://library.coloradomtn.edu/home/modules) such as video tutorials

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1973, Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and as provided in other applicable statutes and College policies. The College prohibits sexual and gender-based harassment, including sexual assault, and other forms of interpersonal violence. To obtain more information regarding non-discrimination policies, visit the Notice of Nondiscrimination website (https://coloradomtn.edu/notice-of-nondiscrimination/) or contact Lisa Doak, Harassment and Discrimination Prevention (Title IX) Coordinator, **ldoak@coloradomtn.edu (mailto:ldoak@coloradomtn.edu)**, 970-947-8351, or Angela Wurtsmith, Director of Human Resources, **awurtsmith@coloradomtn.edu (mailto:awurtsmith@coloradomtn.edu)**, 970-947-8311.

Tentative Course Schedule

NOTE: This schedule is subject to change at any time, depending on instructor evaluation of student skills/understanding/knowledge.

Aug	22	M	1.1	The Coordinate Plane
			1.2	Graphs of Equations in two Variables
	24	W	1.3	Lines
			1.4	Solving Quadratic Equations
	29	M	1.4	Solving Quadratic Equations
			1.5	Complex Numbers
	31	W	1.6	Solving Other Types of Equations
Sep	5	M		Labor Day, No Class
	7	W	1.7	Solving Inequalities
	12	M	1.8	Solving Absolute Value Equations and Inequalities
	14	W	1.9	Modeling Variation
	19	M		Review
	21	W		**Exam #1**
	26	M	2.1	Functions
			2.2	Graphs of Functions
	28	W	2.3	Getting Information from the Graph of a Function
			2.4	

				Average Rate of Change of a Function
Oct	3	M	2.6	Transformation of Functions
			2.7	Combining Functions
	5	W	2.8	One-to-One Functions and Their Inverses
	10	M		Review
	12	W		**Exam #2**
	17	M	3.1	Quadratic Functions and Models
	19	W	3.2	Polynomial Functions and Their Graphs
	24	M	3.6	Rational Functions
	26	W	4.1	Exponential Functions
			4.2	The Natural Exponential Function
	31	M	4.3	Logarithmic Functions
Nov	2	W	4.4	Laws of Logarithms
	7	M		Review
	9	W		**Exam #3**
	14	M	4.5	Exponential and Logarithmic Equations
	16	W	4.6	Modeling with Exponential and Logarithmic Equations
	21	M	5.4	Systems of Nonlinear Equations
	23	W		No Class, Thanksgiving

	28	M	Class Project
	30	W	Review
Dec	5	M	Review
	7	W	**Final**

Course and Instructor Information

Instructor Name: Joyce Treulieb

Course Code: MAT-203/204 - SB01

CMC Phone: 970-870-4475

Other Phone:

CMC Fax:

CMC e-mail: jtreulieb@coloradomtn.edu

Office Number: Bristol 314

Office Hours: Mon-Thurs, 12:00-12:20 and 2:00-3:00 (2:00-3:00 will be held in The Library)! Tuesday/Thursday 4:50-5:15.

Course Description:

Focuses on the traditional subject matter of multivariable Calculus with an additional emphasis on word problems and problem solving. Topics include vectors, vector-valued functions, partial derivatives, analytic geometry, multiple integrals, line integrals, Stokes', Divergence Theorems and Green's Theorems, and applications. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

T/Th 3:10 PM - 4:50 PM
8/23/2022 - 12/08/2022
Classroom: Bristol Hall, 122 Lecture, or on Webex.

Online people will join via Webex. Links will be posted in Canvas under the Cisco Webex link on the left of the page.

• link: **https://cmc.webex.com/meet/jtreulieb (https://cmc.webex.com/meet/jtreulieb,)** is the link for online office hours.

We will do a class project. We will discuss it during our class.

All homework and tests will be posted, and will be on Canvas as multiple choice. Tests must be taken during your regular class time, and you will have the same amount of time. They are now open book and open note, but they are still individual. They are not a group assignment. Books and notes are appropriate, but the internet is not.

Course Start/Stop Date: 8/23/2022 - 12/08/2022

No Show Date: 08/31/22

I am required to report any "no-show" student to the Registrar's office. No-Show is determined based on your attendance and engagement in the first seven days of this course. You will be reported as a no-show for this course if you have not attended our first In-Person or virtual class (Flex or Online) meeting

nor logged into Canvas and completed Insert the specifics of your No Show assignment here within the first seven days from the course start date.

As per the CMC catalog, if you are dropped for non-attendance, a refund is not automatic nor guaranteed. If you have not attended, be sure to check Student Planning to see whether you are still registered in the class. If you are still registered and you do not attend, you risk receiving a failing grade.

If you are dropped as a no-show student, class reinstatement cannot occur without significant documentation of extenuating circumstances. You would first need to contact the course instructor for approval. If reinstatement is approved, you would need to proceed with the Late Registration process.

No-Show Reporting & Financial Aid: If a student is dropped from a course (or courses) for non-attendance, the resultant loss in credit hours may cause a reduction and/or cancellation of his/her financial aid award. Like class reinstatement, financial aid awards can only be reinstated with documentation of extreme extenuating circumstances. Reinstatement in a class DOES NOT guarantee financial aid reinstatement.

Withdrawal Date: 11/14/2022

Refund Date: 09/08/2022

Credits: 4

Prerequisite:

Prior Completion of MAT202 wit a grade of C- or higher

Required Course Materials

I

Required Course Materials

Calculus Early Transcendentals

By Stewart, James

ISBN:

9781285741550

Edition: 8th

Go to Basecamp > Employee Resources > Learning Materials Program (Faculty Adoptions) to verify your adoptions before the semester begins. Follow the steps for Canvas integrations to ensure that digital materials are accessible to students. Integration instructions are available on Basecamp > CMC Apps > Learning Hub > Digital Textbooks and Resources. Please see the Learning Materials Program website (https://coloradomtn.ecampus.com/) or contact LMP Customer Service at 844-523-9056 or **teamcmc@ecampus.com (mailto:teamcmc@ecampus.com)** if you have questions. Students receive multiple reminders. In the event that a student does not have textbooks or digital access it is usually because they have not verified. Provide the CMC LMP Customer Service number for ALL order or textbook return questions 844-523-9056.

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Course Description

Course Description:

Focuses on the traditional subject matter of multivariable Calculus with an additional emphasis on word problems and problem solving. Topics include vectors, vector-valued functions, partial derivatives, analytic geometry, multiple integrals, line integrals, Stokes', Divergence Theorems and Green's Theorems, and applications. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

REQUIRED COURSE LEARNING OUTCOMES

1. Apply vector algebra to the geometry of space.
2. Analyze 2 and 3 dimensional curves given as vector valued functions using calculus techniques.
3. Examine surfaces/multivariable functions and their graphs using calculus techniques.
4. Construct multiple integrals for regions in the plane and space using rectangular, polar, cylindrical, and spherical coordinates to measure areas, volumes, and other applications.
5. Evaluate double and triple integrals.
6. Determine vector field properties.
7. Apply theorems of vector calculus, such as Fundamental Theorem of line integrals, Green's Theorem, Stokes' Theorem, and Divergence Theorem.
8. Apply multivariable Calculus techniques to engineering and physics problems.

Student Learning Outcomes, Competencies, and Skills

Guaranteed Transfer (GT) Pathways Course Statement:
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GT-MA1: MATHEMATICS CONTENT CRITERIA
Students should be able to:

1. Demonstrate good problem-solving habits, including:
    1. Estimating solutions and recognizing unreasonable results.
    2. Considering a variety of approaches to a given problem, and selecting one that is appropriate.
    3. 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-MA1 COMPETENCY & STUDENT LEARNING OUTCOMES

Competency: Quantitative Literacy:

Students should be able to:

1. Interpret Information
    1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
2. Represent Information

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

3. Perform Calculations
    1. Solve problems or equations at the appropriate course level.
    2. Use appropriate mathematical notation.
    3. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.
4. Apply and Analyze Information
    1. 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.
    2. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
    3. Make judgments based on mathematical analysis appropriate to the course level.
5. Communicate Using Mathematical Forms
    1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).
6. Address Assumptions (required of statistics courses only)
    1. Describe and support assumptions in estimation, modeling, and data analysis, used as appropriate for t

Evaluation Method

Homework

Homework will be a part of Canvas Quizzes. It will be due once a week, on the first class of the week. There will be some multiple choice questions, and some additional practice problems to do on your own.

Homework will be worth 15% of your total grade.

Exams There are three exams, and one project (each 15% of your grade) and a

cumulative final worth 25% of your grade.

Class Project: There will be a class project worth 15% of your grade.

Grades Your grade is based on the following percentage:

90-100: A

80-89: B

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Below 60: F

Note: Pluses and minuses are given at the instructor's discretion based on the natural breaks in the grading. Usually, 89 is an A-, and 88 is a B+

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Make-ups will not be given unless extreme circumstances exist, and then only with documentation (i.e. death certificate, doctor's note). In lieu of make-ups, one missing exam can be replaced with the final exam score. Also, 2 homeworks will be dropped. If on a school field-trip, documentation must be provided, and the exam must be made up before the exam is handed back to the class. Otherwise, the missing exam will be replaced with the final exam score. If your lowest exam score is not a zero, and your final exam score is higher; your lowest exam score will be replaced with your final.

Perfect attendance will be rewarded with 5% added to your lowest test score. Attendance will be taken by Webex.

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All homework and announcements will be posted on Canvas. Everything that comes up will be in announcements. You need to check them regularly.

We will be doing a class project that will involve graphing.

CMC Libraries & Learning Commons

As a CMC student, you have access to the CMC Libraries both in-person and virtually. You have 24/7 access to thousands of online journals, magazines, newspapers, e-books, audiobooks, videos, images, career resources, and practice tests from the CMC Libraries website (https://library.coloradomtn.edu/home) or from the Libraries link in Basecamp and Canvas.

The CMC Libraries Team is here to help you. You can use any or all of these ways to connect with your helpful, professional library staff!

- In-person at the Dillon, Edwards, Leadville, Spring Valley, and Steamboat Springs campuses
- Virtual library (https://library.coloradomtn.edu/home/help) support via email, 24/7 chat, telephone, or video conferencing
- Online resources (https://library.coloradomtn.edu/home/modules) such as video tutorials

Student Information and Support Services

A. **Right to Know:** The College is required by law to share certain types of information with students. The Right to Know website (https://coloradomtn.edu/your-right-to-know/) includes information including disability services, complaint processes, policies and procedures, textbook information, registration, attendance and grading, graduation rates, and more. In addition, Student Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fstudent-services%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=xpm3VdeDA9wa8LvR1TNsl6pdFdD%2BiCYO%2FhA1xfnioUs%3D&reserved=0) offers resources to promote your well-being and success. Take advantage of these programs and services, which include academic support and advising, access and disability services, career services, veterans' benefits, housing, orientations, food and nutrition support, and financial aid. Reach out and find support at CMC Counseling Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.sharepoint.com%2Fsites%2Fcounselingservices&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=%2BhxIdVsR8VaRPMx0LltI3rDg4S7M1QhZ48yEV%2BTUBZs%3D&reserved=0), You@CMC (https://you.coloradomtn.edu/), and Colorado Crisis Services (https://coloradocrisisservices.org/) **(mailto:mental%20health%20counseling%20services,%20You@CMC,%20the%20Colorado%20Crisis%20Services%20,)** .

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1973, Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and as provided in other applicable statutes and College policies. The College prohibits sexual and gender-based harassment, including sexual assault, and other forms of interpersonal violence. To obtain more information regarding non-discrimination policies, visit the Notice of Nondiscrimination website (https://coloradomtn.edu/notice-of-nondiscrimination/) or contact Lisa Doak, Harassment and Discrimination Prevention (Title IX) Coordinator, **ldoak@coloradomtn.edu** (mailto:ldoak@coloradomtn.edu), 970-947-8351, or Angela Wurtsmith, Director of Human Resources, **awurtsmith@coloradomtn.edu** (mailto:awurtsmith@coloradomtn.edu), 970-947-8311.

Tentative Course Schedule

NOTE: This schedule is subject to change at any time, depending on instructor evaluation of student skills/understanding/knowledge. See Canvas for more information.

			12.1	Three-Dimensional Coordinate Systems
Aug	23	T	12.2	Vectors
			12.3	Dot Product
			12.4	Cross Product
	25	TH	12.5	Lines and Planes
	29	T	12.6	Cylinders and Quadric Surface
			13.1	Vector Functions
Sep	01	TH	13.2	Differentiation and Integration of Vector Functions
			13.3	Arc Length and Curvature
	06	T	13.4	Motion in Space
	08	TH	14.1	Functions of Several Variables
	13	T	14.2	Limits and Continuity
	15	TH		Review
	20	T		**Exam 1**
			14.3	Partial Derivatives
	22	TH	14.4	Tangent Planes and Linear Approximations
			14.5	Chain Rules for Functions of Several Variables
	27	T	14.6	Directional Derivatives and Gradients

	29	TH	14.7	Maximum and Minimum Values
Oct	04	T	14.8	Lagrange Multipliers
	06	TH	15.1	Double Integrals over Rectangles
			15.2	Double Integrals over General Regions
	11	T	15.3	Polar Coordinates
	13	TH	15.4	Applications of Double Integrals
			15.5	Surface Area
	18	T		Review
	20	TH		**Exam 2**
	26	T	15.6	Triple Integrals
			15.7	Triple Integrals in Cylindrical Coordinates
	27	TH	15.8	Triple Integrals in Spherical Coordinates
			15.9	Change of Variables
Nov	01	T	16.1	Vector Fields
			16.2	Line Integrals
	03	TH	16.3	The Fundamental Theorem for Line Integrals
			16.4	Greens Theorem
	08	T		Review
	10	TH		**Exam 3**
	15	T	16.5	Curl and Divervence
			16.6	Parametic Surfaces and Their Areas

	17	TH	16.7	Surface Integrals
	22	T	16.8	Stokes' Theorem
			16.9	Divergence Theorem
	24	TH		No Class, Thanksgiving
	26	T		Review
	28	TH		Review
May	03	T		Review
	05	TH		**Final**

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Course and Instructor Information

I

Course Information:

Course Title: Calculus II

Course Code: MAT-202-SB01

Credits: 5

Prerequisite: MAT-201

Semester: Fall 2022

Format (https://coloradomtn.edu/classes/class-types-fa/): In-Person

Meeting Days & Times:

M/W: 8/22/2022 - 12/7/2022
Location/Format: SAB: 217 Lecture

Course Start/Stop Date: 8/22/2022 - 12/7/2022

No Show Date: 8/31/2022

No Show Attendance Reporting Date: For credit courses that start at the beginning of the semester, faculty must report "Never Attended" (no shows) on the second Wednesday of the semester. For late starting classes, faculty must report on the seventh day after the course start date.

No Show Attendance Reporting is based on your attendance and engagement. If you are a No Show, you may be dropped from the course and this may impact your financial aid. Go to the **No Show Attendance Reporting website (https://catalog.coloradomtn.edu/content.php?catoid=14&navoid=1623#noshow)** for more information.

Withdrawal Date: 11/14//2022

Refund Date: 9/7/2022

Instructor Information:

Instructor Name: Joyce Treulieb

CMC Phone: 970-870-4475

Other Phone:

CMC Fax:

CMC e-mail: **jtreulieb@coloradomtn.edu (mailto:jtreulieb@coloradomtn.edu)**

Office Number: Bristol 314

Office Hours: Mon-Thurs, 12:00-12:20 and 2:00-3:00 (2:00-3:00 will be held in The Library)! Tuesday/Thursday 4:50-5:15.

Required Course Materials

Calculus Early Transcendentals

By Stewart, James

ISBN:

9781285741550

Edition: 8th

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Course Description

Course Description:

Continues the study of single variable calculus which will include techniques of integration, analytic geometry, improper integrals, convergence of infinite numerical series and power series. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

REQUIRED COURSE LEARNING OUTCOMES :

1. Solve application problems related to integration.
2. Solve introductory differential equations and associated initial value problems.
3. Apply appropriate integration techniques including integration by parts, trig substitution and partial fractions to evaluate definite, indefinite, and improper integrals.
4. Demonstrate the convergence or divergence of infinite sequences and series.
5. Express functions as power series (including Taylor series) with the appropriate interval of convergence.
6. Estimate errors in series approximations.
7. Graph curves in polar and parametric form.
8. Analyze curves in polar and parametric form using calculus techniques.

Student Learning Outcomes, Competencies, and Skills

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6. Utilize and integrate appropriate technology.

GT-MA1 COMPETENCY & STUDENT LEARNING OUTCOMES

Competency: Quantitative Literacy:

Students should be able to:

1. Interpret Information
    1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
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1. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

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    1. Solve problems or equations at the appropriate course level.
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    1. Describe and support assumptions in estimation, modeling, and data analysis, used as appropriate for the course.

Evaluation Method

Homework

Homework will be a part of Canvas Quizzes. It will be due once a week, on the first class of the week. There will be some multiple choice questions, and some additional practice problems to do on your own. We will also do in-class group work, that will go into your Homework grade.

Homework will be worth 15% of your total grade.

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cumulative final worth 25% of your grade.

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We will be doing a class project that will involve math software, most likely Maple.

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C. **Notice of Nondiscrimination**: Colorado Mountain College does not discriminate on the basis of age, color, disability, gender identity, marital status, national or ethnic origin, political affiliation, race, religion, sex (including pregnancy), sexual orientation, veteran status, and family and genetic information, or in its programs and activities, as required by Harassment and Discrimination Prevention (Title IX) of the Education Amendments of 1972, Title II of the Americans with Disabilities Act of 1990, as amended, Section 504 of the Rehabilitation Act of

1973, Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and as provided in other applicable statutes and College policies. The College prohibits sexual and gender-based harassment, including sexual assault, and other forms of interpersonal violence. To obtain more information regarding non-discrimination policies, visit the Notice of Nondiscrimination website (https://coloradomtn.edu/notice-of-nondiscrimination/) or contact Lisa Doak, Harassment and Discrimination Prevention (Title IX) Coordinator, **ldoak@coloradomtn.edu (mailto:ldoak@coloradomtn.edu)**, 970-947-8351, or Angela Wurtsmith, Director of Human Resources, **awurtsmith@coloradomtn.edu (mailto:awurtsmith@coloradomtn.edu)**, 970-947-8311.

Tentative Course Schedule

Aug	22	M	6.1	Area Between Curves
			6.2	Volumes
	24	W	6.2	Volumes
			6.3	Volumes by Cylindrical Shells
	29	M	6.4	Work
			6.5	Average Value of a Function
	31	W	7.1	Integration By Parts
Sep	5	M		Labor Day - No Class
	7	W	7.2	Trigonometric Integrals
	12	M	7.3	Trig Substitution
	14	W	7.4	Integration using Partial Fractions
	19	M	7.5	Strategy for Integration
			7.8	Improper Integrals
	21	W		Review
	26	M		**Exam 1**

	28	W	8.1	Arc length
			8.2	Area of a Surface of Revolution
Oct	3	M	8.3	Applications to Physics and Engineering
	5	W	9.3	Separable Equations
	10	M	10.1	Curves Defined by Parametric Equations
			10.2	Calculus with Parametric Curves
	12	W	10.3	Polar Coordinates
			10.4	Areas and Lengths in Polar Coordinates
	17	M		Review
	19	W		**Exam 2**
	24	M	11.1	Sequences
			11.2	Series
	26	W	11.3	The integral Test and Estimates of Sums
	31	M	11.4	The Comparison Tests
Nov	2	W	11.5	Alternating Series

	7	M	11.6	Absolute Convergence and the Ratio and Root Tests
	9	W	11.7	Strategy for Testing Series
	14	M	11.8	Power Series
	11	W		Review
	21	M		**Exam 3**
	23	W		No Class, Thanksgiving
	28	M	11.9	Representations of Functions as Power Series
			11.10	Taylor and Maclaurin Series
	30	W		Review
Dec	5	M		Review
	7	W		Final

Course and Instructor Information

Instructor Name: Joyce Treulieb

CMC Phone: 970-870-4475

Other Phone:

CMC Fax:

CMC e-mail: jtreulieb@coloradomtn.edu

Office Number: Bristol 314

Office Hours: Mon-Thurs, 12:00-12:20 and 2:00-3:00 (2:00-3:00 will be held in The Library)! Tuesday/Thursday 4:50-5:15.

Course Description:

Description:	Explores ordinary differential equations with an introduction to select topics in linear algebra. Course covers first and second order differential equations, series solutions, Laplace transforms, linear algebra, eigenvalues, first order systems of equations, and numerical techniques for solving differential equations.

This is a statewide Guaranteed Transfer course in the GT-MA1 category.

T/Th 3:10 PM - 4:50 PM
1/17/2023 - 5/4/2023
Remote Real Time: Webex: Links will be under the Cisco Webex Link. Also in person if you are in Steamboat. Classroom Bristol 122

We will do a class project. It will involve exploring Series Solutions.

Course Start/Stop Date: 1/17/2023- 5/4/2023

No Show Date: 01/25/23

I am required to report any "no-show" student to the Registrar's office. No-Show is determined based on your attendance and engagement in the first seven days of this course. You will be reported as a no-show for this course if you have not attended our first In-Person or virtual class (Flex or Online) meeting

nor logged into Canvas and completed Insert the specifics of your No Show assignment here within the first seven days from the course start date.

As per the CMC catalog, if you are dropped for non-attendance, a refund is not automatic nor guaranteed. If you have not attended, be sure to check Student Planning to see whether you are still registered in the class. If you are still registered and you do not attend, you risk receiving a failing grade.

If you are dropped as a no-show student, class reinstatement cannot occur without significant documentation of extenuating circumstances. You would first need to contact the course instructor for approval. If reinstatement is approved, you would need to proceed with the Late Registration process.

No-Show Reporting & Financial Aid: If a student is dropped from a course (or courses) for non-attendance, the resultant loss in credit hours may cause a reduction and/or cancellation of his/her financial aid award. Like class reinstatement, financial aid awards can only be reinstated with documentation of extreme extenuating circumstances. Reinstatement in a class DOES NOT guarantee financial aid reinstatement.

Withdrawal Date: 04/10/2023

Refund Date: 02/02/2023

Credits: 3, or 4 (for Diff Eq/Linear Alg)

Prerequisite: Prior completion of MAT-2420 with a grade of C- or higher.

Required Course Materials

Differential Equations & Linear Algebra, Second Edition:

ISBN: 13: 978-0-13-468954-8

Credit-based students participate in CMC's Learning Materials Program (LMP). This program provides all physical or digital textbooks and course materials to students as rentals for an all-inclusive flat per credit fee. There are a few exceptions to included materials such as Lab Kits and a select number of excluded courses. Access detailed information about the Learning Materials Program, including how to receive and return your textbooks, can be found at the **Learning Materials Program website (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fclasses%2Ftextbooks%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C1f3cbd05ae8a43c6076a08d93b228c6e%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637605841828908390%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=rejoBgbIrLch6RGDIi7CV%2BCfbo8H5CtGires%2BduFIbQ%3D&reserved=0)** .

Course Description

Description: **Explores ordinary differential equations with an introduction to select topics in linear algebra. Course covers first and second order differential equations, series solutions, Laplace transforms, linear algebra, eigenvalues, first order systems of equations, and numerical techniques for solving differential equations.**

Student Learning Outcomes, Competencies, and Skills

REQUIRED COURSE LEARNING OUTCOMES:

1. Recognize and classify differential equations.
2. Use graphical and numerical approaches to analyze solution curves.
3. Solve first and higher order linear, homogeneous and nonhomogeneous differential equations using classical techniques.
4. Solve first and higher order linear, homogeneous and linear nonhomogeneous differential equations using Laplace Transforms and power series.
5. Apply differential equations to solve various problems in the physical and natural sciences.
6. Define various introductory linear algebra concepts including vector spaces, subspace, basis, span, dimension, linear dependence/independence, linear transformations and determinants.
7. Solve systems of differential equations using eigenvalues and eigenvectors.

(Note: Those in 2560 and not 2562 will not be required to do the linear algebra sections).

Guaranteed Transfer (GT) Pathways Course Statement:

The Colorado Commission on Higher Education has approved **MAT-120** 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 **https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html (https://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html)** .

GT-MA1: MATHEMATICS CONTENT CRITERIA

Students should be able to:

1. Demonstrate good problem-solving habits, including:
    1. Estimating solutions and recognizing unreasonable results.
    2. Considering a variety of approaches to a given problem, and selecting one that is appropriate.
    3. 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-MA1 COMPETENCY & STUDENT LEARNING OUTCOMES

Competency: Quantitative Literacy:

Students should be able to:

1. Interpret Information
    1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
2. Represent Information
    1. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).
3. Perform Calculations
    1. Solve problems or equations at the appropriate course level.
    2. Use appropriate mathematical notation.
    3. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.
4. Apply and Analyze Information
    1. 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.
    2. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
    3. Make judgments based on mathematical analysis appropriate to the course level.
5. Communicate Using Mathematical Forms
    1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).
6. Address Assumptions (required of statistics courses only)
    1. Describe and support assumptions in estimation, modeling, and data analysis, used as appropriate for t

Evaluation Method

Homework

Homework will be a part of Canvas Quizzes. It will be due once a week, on the first class of the week. There will be some multiple choice questions, and some additional practice problems to do on your own. We also do group work each class.

Homework/group work will be worth 15% of your total grade.

Exams There are three exams, and one project (each 15% of your grade) and a

cumulative final worth 25% of your grade.

Class Project: There will be a class project worth 15% of your grade.

Grades Your grade is based on the following percentage:

90-100: A

80-89: B

70-79: C

60-69: D

Below 60: F

Note: Pluses and minuses are given at the instructor's discretion based on the natural breaks in the grading. Usually, 89 is an A-, and 88 is a B+

Class Management

Make-ups will not be given unless extreme circumstances exist, and then only with documentation (i.e. death certificate, doctor's note). In lieu of make-ups, one missing exam can be replaced with th final exam score. Also, 2 homeworks will be dropped. If on a school field-trip, documentation must be provided, and the exam must be made up before the exam is handed back to the class. Otherwise, the missing exam will be replaced with the final exam score. If your lowest exam score i not a zero, and your final exam score is higher; your lowest exam score will be replaced with your final.

Perfect attendance will be rewarded with 5% added to your lowest test score. Attendance will be taken by Webex.

Students are responsible for course materials from assigned text(s) and reading, lectures, labs, and other assignments as required. The instructor may alter any, or all, of this syllabus during the semester as the learning environment requires. Attendance at all class meetings is expected.

A student judged to have engaged in academic misconduct as defined in the "Academic Policies an Requirements" section of the Colorado Mountain College Student Handbook will, at a minimum, receive a "zero" for the work in question. The student may also be removed from the class, resultin in a failing grade. All student course material may be submitted to turnitin.com (or another anti-plagiarism program) at the instructor's discretion. "Academic Expectations," the "Student Code of Conduct and Judicial Process" and more information about academic misconduct can be found in the Student Handbook.

NOTE: Leaving class early is not permitted without prior notification to the instructor.

Students are responsible for course materials from assigned text(s) and reading, lectures, labs, and other assignments as required.

The instructor may alter any, or all, of this syllabus during the semester as the learning environment requires. Students will be notified in writing of changes.

Attendance at all class meetings is expected.

All homework and announcements will be posted on Canvas. Everything that comes up will be in announcements. You need to check them regularly.

We will be doing a class project that will involve exploring series solutions,

CMC Libraries & Learning Commons

The CMC Libraries Team is here to help you! As a CMC student, you have access to the CMC Libraries both in-person and virtually. You have 24/7 access to thousands of online journals, magazines, newspapers, e-books, audiobooks, videos, images, career resources and practice tests from the **CMC Libraries website** (https://library.coloradomtn.edu/) or from the Libraries link in Basecamp and Canvas. Whether or not you live near a campus with a physical library, all CMC students can check out any of the many thousands of print books using Interlibrary Loan (ILL) and the CMC Libraries team will get that item delivered to any CMC campus.

You can use any or all of these ways to connect with your helpful, professional library staff to get you what you need:

- In-person at the Dillon, Edwards, Leadville, Spring Valley, and Steamboat Springs campuses·
- **Online** (https://library.coloradomtn.edu/home/help) via email, 24/7 chat, telephone, or video conferencing
- **Online resources** (https://library.coloradomtn.edu/home/modules) such as video tutorials

Student Information and Support Services

A. **Right to Know:** The College is required by law to share certain types of information with students. The Right to Know website (https://coloradomtn.edu/your-right-to-know/) includes information including disability services, complaint processes, policies and procedures, textbook information, registration, attendance and grading, graduation rates, and more. In addition, Student Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.edu%2Fstudent-services%2F&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=xpm3VdeDA9wa8LvR1TNsI6pdFdD%2BiCYO%2FhA1xfnioUs%3D&reserved=0) offers resources to promote your well-being and success. Take advantage of these programs and services, which include academic support and advising, access and disability services, career services, veterans' benefits, housing, orientations, food and nutrition support, and financial aid. Reach out and find support at CMC Counseling Services (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcoloradomtn.sharepoint.com%2Fsites%2Fcounselingservices&data=04%7C01%7Carmurray%40coloradomtn.edu%7C13d24b04c212402df01e08d9458bdf2f%7Cf439c44861744569b4faffbc80f82e1b%7C1%7C0%7C637617289321702751%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=%2BhxldVsR8VaRPMx0LItl3rDg4S7M1QhZ48yEV%2BTUBZs%3D&reserved=0), You@CMC (https://you.coloradomtn.edu/), and Colorado Crisis Services (https://coloradocrisisservices.org/).

B. **Students Rights and Responsibilities**: The CMC Student Handbook (https://coloradomtn.edu/student-services/) outlines the expectations for student conduct as well as the college's academic policies and expectations. This includes expectations for appropriate use of technology, students' rights and responsibilities within and outside of the classroom, and academic policies and requirements. Classroom behavior that disrupts the teaching and learning environment is unacceptable.

C. **Notice of Nondiscrimination**: Colorado Mountain College does not discriminate on the basis of age, color, disability, gender identity, marital status, national or ethnic origin, political affiliation, race, religion, sex (including pregnancy), sexual orientation, veteran status, and family and genetic information, or in its programs and activities, as required by Harassment and Discrimination Prevention (Title IX) of the Education Amendments of 1972, Title II of the Americans with Disabilities Act of 1990, as amended, Section 504 of the Rehabilitation Act of

1973, Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and as provided in other applicable statutes and College policies. The College prohibits sexual and gender-based harassment, including sexual assault, and other forms of interpersonal violence. To obtain more information regarding non-discrimination policies, visit the **Notice of Nondiscrimination website** (https://coloradomtn.edu/notice-of-nondiscrimination/) or contact Lisa Doak, Harassment and Discrimination Prevention (Title IX) Coordinator, ldoak@coloradomtn.edu (mailto:ldoak@coloradomtn.edu), 970-947-8351, or Angela Wurtsmith, Director of Human Resources, awurtsmith@coloradomtn.edu (mailto:awurtsmith@coloradomtn.edu), 970-947-8311.

D. **Right to Privacy:** Colorado Mountain College continues to encourage and foster a vibrant academic community, whether remote or in person. We are committed to respecting the privacy rights of all participants in the classroom environment and promoting the highest standards of academic integrity. Sharing course content outside of the course may have a chilling effect on classroom discussion and interfere with the educational process. Students may not record, photograph, screenshot, share, reproduce or re-distribute any class activity without written permission from the instructor, except as necessary as part of approved accommodation discussed below. Additionally, CMC discourages non-students from listening to courses in the event student personal identifying information is revealed during the course. Students in all modalities are equally held to the academic standards set forth in the Colorado Mountain College Student Handbook. Some students may require a reasonable accommodation under the Americans With Disabilities Act and Amendments Act that would allow them to record, photograph, screenshot or reproduce some course content, including video, audio, or other content. Students with disabilities should contact CMC's Access, Inclusion & Disability Coordinator about receiving these reasonable accommodations. More information can be found at **https://coloradomtn.edu/apply-get-started/access-inclusion-disabilityservices/** (https://coloradomtn.edu/apply-get-started/access-inclusion-disabilityservices/)

Tentative Course Schedule

This schedule is subject to change at any time, depending on instructor evaluation of student skills/understanding/knowledge. The instructor will communicate changes to the schedule as needed.

Jan	17	T	1.1	Dynamical Systems: Modeling
			1.2	Solutions and Direction Fields: Qualitative Analysis
	19	TH	1.3	Separation of Variables: Quantitative Analysis
	24	T	1.4	Approximation Methods: Numerical Analysis
			2.1	Linear Equations: The Nature of Their Solutions
	26	TH	2.2	Solving the First-order Linear Differential Equation
	31	T	2.3	Growth and Decay Phenomena
			2.4	Linear Models: Mixing and Cooling
Feb	02	TH	3.1	Matrices: Sums and Products
			3.2	Systems of Linear Equations
	07	T	3.3	The Inverse of a Matrix
			3.4	Determinants and Cramer's Rule
	09	TH	3.5	Vector Spaces and Subspaces
	14	T	3.6	Basis and Dimension
	16	TH		Review
	21	T		**Exam 1**
	23	TH	4.1	The Harmonic Oscillator
			4.2	Real Characteristic Roots

			4.3	Complex Characteristic Roots
	28	T	4.4	Undetermined Coefficients
Mar	02	TH	4.5	Variation of Parameters
	07	T	5.1	Linear Transformations
			5.2	Properties of Linear Transformations
	09	TH	5.3	Eigenvalues and Eigenvectors
	14	T		Spring Break – No Class
	16	TH		Spring Break – No Class
	21	T	6.1	Theory of Linear DE Systems
			6.2	Linear Systems with Real Eigenvalues
	23	TH	6.3	Linear Systems with Nonreal Eigenvalues
	28	T	6.5	Decoupling a Linear DE System
	30	TH		Review
Apr	04	T		**Exam 2**
	06	TH	8.1	The Laplace Transform and Its Inverse
	11	T		Class Project: Series Solutions Research Project
	13	TH	8.2	Solving DE's and IVP's with Laplace Transforms
	18	T	8.3	Step Functions and Delta Functions
			8.5	Laplace Transform Solution of Linear Systems
	20	TH		Review

	25	T	**Exam #3**
	27	TH	Review
May	02	T	Review
	04	TH	**Final Exam**