



## MATH 250E - Single Variable Calculus I Enhanced

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Discipline: Mathematics

**Department:** Mathematics

Term Effective: Fall 2025

### Requisites

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Prerequisite: Placement as determined by the college's multiple measures assessment process or completion of a course taught at or above the level of precalculus

### Entrance Skill

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A. Requisite Skills:

None

B. Recommended Skills:

None

### Units and Hours

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**Semester Units:** 4.000

**Semester Hours:**

Instructional Categories	Units	Contact Hours	Out of Class Hours
Lecture	3.5	56 - 63	112 - 126
Independent Study	0	0	0
Lab/Field	0.5	24 - 27	0
Activity	0	0	0
<b>Total</b>	<b>4</b>	<b>80 - 90</b>	<b>112 - 126</b>
<b>Total Student Learning Hours</b>	<b>192 - 216</b>		

Recommended Course Enrollment: 40

### Need for the Course

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1. AB1705 requires that registered STEM students who have an overall GPA  $< 2.6$  or have not passed Trigonometry, Precalculus, or Calculus with a C or better, must be placed into a STEM Calculus I course with no more than 2 additional units of support.
2. MATH 250 is the first of a series of three calculus courses, required for degrees in mathematics and many of the sciences.
3. MATH 250 satisfies the associate degree general education requirement for computation and analytical thinking.
4. MATH 250 satisfies the IGETC requirement for mathematical concepts and quantitative reasoning and the CSU general education requirement for mathematics.
5. MATH 250 is transferable to both CSU and UC.

## Goals for the Course

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1. To fulfill AB1705 requirements and improve the probability that students will persist to successfully complete STEM Calculus 1 and Calculus 2.
2. To fulfill part of the mission of a two-year college by offering mathematical content expected of science majors.
3. To prepare students for further studies in mathematics.

## Catalog Description

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This course contains the same content as Math 250 but includes more instruction time to help students who can benefit from additional support. Topics will include an Introduction to differential and integral calculus, including functions, limits, and continuity; techniques and applications of differentiation including derivatives of algebraic and transcendental functions, the chain rule, implicit differentiation, the Mean Value Theorem, curve sketching, extremum problems, and related rates; and an introduction to integration and The Fundamental Theorem of Calculus A review of prerequisite core concepts and college success content will be integrated throughout the course. Active learning techniques involving multiple modalities that include individual and/or group active learning projects/activities and/or student presentations will be used. Students who receive credit for MATH 250E may not receive credit for MATH 250.

## Schedule Description

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This course contains the same content as Math 250 but includes more instruction time to help students who can benefit from additional support. Topics will include an Introduction to differential and integral calculus, including functions, limits, and continuity; techniques and applications of differentiation including derivatives of algebraic and transcendental functions, the chain rule, implicit differentiation, the Mean Value Theorem, curve sketching, extremum problems, and related rates; and an introduction to integration and The Fundamental Theorem of Calculus A review of prerequisite core concepts and college success content will be integrated throughout the course. Active learning techniques involving multiple modalities that include individual and/or group active learning projects/activities and/or student presentations will be used. Students who receive credit for MATH 250E may not receive credit for MATH 250.

## Student Learning Outcomes:

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Upon satisfactory completion of the course, students will be able to:

1. Evaluate limits, including proofs, for linear functions.
2. Determine and analyze derivatives as appropriate to first year calculus.
3. Recognize, define, and use formal mathematical notation as appropriate to the course outline.
4. Outcome Support: Apply skills developed within the lab portion of the course objectives to improve their ability to complete MATH 250E and future math courses

## Course Objectives

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Upon satisfactory completion of the course, students will be able to:

1. Calculus Course Objectives
  - a. Work with functions described numerically (by tables), geometrically (by graphs), algebraically (by formulas, and in words
  - b. Define limits
  - c. Determine limits formally
  - d. Determine limits at real numbers for: polynomials, rational functions, piece-wise functions, trigonometric functions, composite functions
  - e. Define and determine continuity of functions at a real number and over an interval
  - f. Define the derivative and find the derivative of a function as a limit
  - g. Differentiate: Polynomials; Sums, differences, products, and quotients of functions; Piece-wise functions; Composite functions (chain rule); Trigonometric functions; Implicit functions; Exponential and logarithmic functions; Inverse trigonometric functions, using the appropriate differentiation formulas
  - h. Use the derivative to: Determine slope of the tangent line, find the equation of the tangent line, rate of change, and growth rate of a function; Solve related rate problems; Aid in sketching functions including increasing, decreasing, and constant; Concavity; Inflection points; Relative maximum-minimum (first and second order derivative test); Absolute maximum-minimum (first and second order derivative test); Critical points; Vertical tangents and cusps
  - i. Solve applied maximum-minimum problems, optimization problems
  - j. Solve equations using Newton's method
  - k. Determine rate of change using differentials
  - l. Differentiate functions defined by an integral
  - m. Evaluate definite integrals as a limit by using the Fundamental Theorem of Calculus
  - n. Integrate by using substitution
  - o. Apply integration to find areas
2. Support Objectives for Just-In-Time-Review as needed
  - a. Functions: function notation, identify types of functions and their related graphs, composition of functions, domain, interval notation, inverse functions, exact values versus approximations
  - b. Linear Functions: slope as the average rate of change, find equation of a linear function
  - c. Factoring
  - d. Polynomial Functions: operations of polynomial functions, solve and graph polynomial functions
  - e. Rational and Radical Functions: operations of fractions and complex fractions, conversion of radical to rational exponents, properties of rational exponents, factoring out negative exponents, solve rational and radical equations

- f. Introduction to Exponential and Logarithmic Functions: convert between logarithmic and exponential functions, evaluate logarithmic and exponential functions, properties of logarithmic and exponential functions, solve logarithmic and exponential functions
- g. Trigonometric Functions: angles, special angles, solve right triangles, definitions of the six trigonometric functions, evaluate trigonometric functions, graphs of sine, cosine, and tangent, Trigonometric identities including Pythagorean identities, Reciprocal identities, Double angle for sine and cosine, solve trigonometric functions
- h. Affective Domain: growth mindset, productive struggle, reflection
- i. Study Skills: study and learning skills in mathematics, reading and understanding mathematical text, organization and time management, exam preparation and exam taking, note taking, working in groups, participation, class/ college readiness
- j. Self Assessment Skills: using peer or instructor feedback to judge and improve one's own work, analyzing and correcting errors on homework and exams
- k. Use of resources: peer study groups, tutoring services, computer resources, counseling resources

## Course Content

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### Lecture Outline

1. Work with functions described numerically (by tables), geometrically (by graphs), algebraically (by formulas, and in words
2. Define limits
3. Determine limits formally
4. Determine limits at real numbers for: polynomials, rational functions, piece-wise functions, trigonometric functions, composite functions
5. Define and determine continuity of functions at a real number and over an interval
6. Define the derivative and find the derivative of a function as a limit
7. Differentiate: Polynomials; Sums, differences, products, and quotients of functions; Piece-wise functions; Composite functions (chain rule); Trigonometric functions; Implicit functions; Exponential and logarithmic functions; Inverse trigonometric functions, using the appropriate differentiation formulas
8. Use the derivative to: Determine slope of the tangent line, find the equation of the tangent line, rate of change, and growth rate of a function; Solve related rate problems; Aid in sketching functions including increasing, decreasing, and constant; Concavity; Inflection points; Relative maximum-minimum (first and second order derivative test); Absolute maximum-minimum (first and second order derivative test); Critical points; Vertical tangents and cusps
9. Solve applied maximum-minimum problems, optimization problems
10. Solve equations using Newton's method
11. Determine rate of change using differentials

12. Differentiate functions defined by an integral
13. Evaluate definite integrals as a limit by using the Fundamental Theorem of Calculus
14.  
Integrate by using substitution
15. Apply integration to find areas

### Lab Outline

1. Functions: function notation, identify types of functions and their related graphs, composition of functions, domain, interval notation, inverse functions, exact values versus approximations
2. Linear Functions: slope as the average rate of change, find equation of a linear function
3. Factoring
4. Polynomial Functions: operations of polynomial functions, solve and graph polynomial functions
5. Rational and Radical Functions: operations of fractions and complex fractions, conversion of radical to rational exponents, properties of rational exponents, factoring out negative exponents, solve rational and radical equations
6. Introduction to Exponential and Logarithmic Functions: convert between logarithmic and exponential functions, evaluate logarithmic and exponential functions, properties of logarithmic and exponential functions, solve logarithmic and exponential functions
7. Trigonometric Functions: angles, special angles, solve right triangles, definitions of the six trigonometric functions, evaluate trigonometric functions, graphs of sine, cosine, and tangent, Trigonometric identities including Pythagorean identities, Reciprocal identities, Double angle for sine and cosine, solve trigonometric functions
8. Affective Domain: growth mindset, productive struggle, reflection
9. Study Skills: study and learning skills in mathematics, reading and understanding mathematical text, organization and time management, exam preparation and exam taking, note taking, working in groups, participation, class/ college readiness
10. Self Assessment Skills: using peer or instructor feedback to judge and improve one's own work, analyzing and correcting errors on homework and exams
11. Use of resources: peer study groups, tutoring services, computer resources, counseling resources

### Representative Texts and Instructional Materials

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**Textbooks:** Calculus, Stewart, J., Cengage Learning, 2021

Calculus: Early Transcendentals, Briggs, W., Cochran, L., Gillett, B., Pearson, 2021

Calculus, Larson, R., and Edwards, B., Brooks/Cole, 2018

**Other:** Videos that cover the topics of this course are available through many online web sites such as Khan

## Methods of Instruction

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- **Audio Visual Presentations**

Uses multimedia tools such as videos, slideshows, and animations to enhance learning. It helps in making complex information more understandable and engaging. Addressing this Method of Instruction in DEIA: Diversity: Use content featuring diverse cultures, genders, and perspectives. Include examples and case studies from various regions and contexts. Equitability: Provide equal access to audio-visual materials, ensuring all students have the necessary technology to view them. Inclusiveness: Ensure content is culturally sensitive and free from bias. Use inclusive language and examples that resonate with a wide audience. Accessibility: Use captions and transcripts for videos, and ensure that visual content is described for students with visual impairments.

- **Class Activities**

Involves interactive tasks and exercises conducted during class to reinforce learning. These can include games, experiments, role-playing, and problem-solving tasks. Addressing this Method of Instruction in DEIA: Diversity: Design activities that draw on diverse cultural contexts and perspectives. Include tasks that allow students to share their unique viewpoints. Equitability: Ensure all students have equal opportunities to engage in activities. Provide necessary materials and support for all. Inclusiveness: Create activities that cater to different learning styles and abilities. Ensure everyone can participate and contribute. Accessibility: Adapt activities to be inclusive of students with disabilities. Provide alternative formats and ensure physical accessibility.

- **Class Discussions**

Facilitates open dialogue between students and instructors. It encourages critical thinking and allows students to share their perspectives and deepen their understanding of the material. Addressing this Method of Instruction in DEIA: Diversity: Encourage sharing of diverse perspectives and experiences. Facilitate discussions on topics that highlight different cultural viewpoints. Equitability: Structure discussions to allow equal participation. Use strategies like talking sticks or timed turns. Inclusiveness: Ensure all voices are heard and respected. Create a safe space for open dialogue. Accessibility: Provide accommodations such as sign language interpreters or speech-to-text services. Ensure discussion spaces are accessible.

- **Collaborative Group Work**

Students work in small groups to complete tasks or projects. This method promotes teamwork, communication skills, and the ability to solve problems collectively. Addressing this Method of Instruction in DEIA: Diversity: Form groups with diverse members to bring various perspectives and skills to the table. Equitability: Assign roles and tasks equitably within groups to ensure balanced participation. Inclusiveness: Encourage inclusive group dynamics where each member's contribution is valued. Accessibility: Ensure that group work spaces and communication methods are accessible to all students.

- **Computer-aided Instruction**

Utilizes computer software and online resources to support learning. It can include educational games, simulations, tutorials, and interactive exercises. Addressing this Method of Instruction in DEIA: Diversity: Use software and resources that reflect a wide range of cultural and contextual examples. Equitability: Ensure all students have access to the necessary technology and support. Inclusiveness: Select programs that cater to different learning styles and abilities. Accessibility: Choose software that is compatible with assistive technologies and follows accessibility standards.

- **Demonstration**

The instructor shows how to do something in a step-by-step manner. It is particularly effective for teaching practical skills and procedures. Addressing this Method of Instruction in DEIA: Diversity: Include examples from diverse cultures and contexts. Demonstrate skills and concepts that are universally applicable. Equitability: Ensure all students have the opportunity to observe and ask questions during demonstrations. Inclusiveness: Use clear, inclusive language and ensure demonstrations are understandable to all students. Accessibility: Provide demonstrations in multiple formats (e.g., live, video) and ensure physical accessibility of the demonstration area.

- **Directed Study**

Students work independently on assigned tasks or projects, guided by the instructor. This method encourages self-discipline and independent learning. Addressing this Method of Instruction in DEIA: Diversity: Allow students to choose study topics that reflect their cultural backgrounds and interests. Equitability: Offer guidance and support to all students equally, ensuring they have the resources they need. Inclusiveness: Provide diverse resources and materials to support independent learning. Accessibility: Ensure study materials are available in accessible formats and provide accommodations as needed.

- **Distributed Education**

Also known as distance learning, it involves delivering educational content to students who are not physically present in a traditional classroom setting. This can be done through online courses, video conferencing, or other remote learning technologies. Addressing this Method of Instruction in DEIA: Diversity: Incorporate global perspectives and diverse content in online courses. Equitability: Ensure all students have access to the necessary technology and support for online learning. Inclusiveness: Design online learning environments that are welcoming and inclusive for all students. Accessibility: Use platforms and materials that meet accessibility standards, ensuring all students can participate fully.

- **Feedback and Critique**

Provides students with constructive feedback on their performance. This method helps students understand their strengths and areas for improvement, fostering continuous development. Addressing this Method of Instruction in DEIA: Diversity: Provide feedback that is respectful of cultural differences and sensitive to diverse perspectives. Equitability: Give equal attention and support to all students in providing feedback. Inclusiveness: Ensure feedback is constructive and encourages growth for all students. Accessibility: Deliver feedback in accessible formats, such as written, audio, or video, and ensure students understand it.

- **Guest Speakers**

Experts or professionals are invited to speak to the class. They provide real-world insights and experiences that enrich the curriculum and offer students exposure to different perspectives. Addressing this Method of Instruction in DEIA: Diversity: Invite speakers from diverse backgrounds and fields to provide a range of perspectives. Equitability: Provide equal opportunity for all students to engage with guest speakers, including Q&A sessions. Inclusiveness: Ensure topics discussed are relevant and inclusive of all students' interests and backgrounds. Accessibility: Ensure presentations are accessible, with accommodations such as captions or interpreters if needed.

- **Lab**

Involves hands-on experiments and practical activities conducted in a laboratory setting. It allows students to apply theoretical knowledge to real-world scenarios and develop practical skills.

Addressing this Method of Instruction in DEIA: Diversity: Use experiments and examples from various cultural and global contexts. Equitability: Ensure all students have equal access to lab resources and equipment. Inclusiveness: Design lab activities that cater to different learning styles and abilities. Accessibility: Make lab spaces and materials accessible to students with disabilities, providing necessary accommodations.

- **Lecture**

The instructor delivers content directly to students, usually in a structured and organized manner. It is effective for conveying large amounts of information efficiently. Addressing this Method of Instruction in DEIA: Diversity: Include content from diverse cultures and perspectives in lectures. Equitability: Ensure all students have equal opportunities to engage with the lecture content. Inclusiveness: Use inclusive language and examples that are relevant to all students. Accessibility: Provide lecture materials in accessible formats and ensure lecture halls are accessible.

- **Observation**

Students learn by watching others, such as instructors, peers, or professionals in action. This method helps students understand processes and techniques through visual learning. Addressing this Method of Instruction in DEIA: Diversity: Observe a range of examples that reflect diverse practices and contexts. Equitability: Provide equal opportunities for all students to participate in observation activities. Inclusiveness: Ensure observation activities are inclusive of all students' backgrounds and experiences. Accessibility: Ensure observation spaces and materials are accessible to all students, providing accommodations as needed.

### **Emergency Remote Instruction Yes**

In emergency circumstances that require campus closure, remote instruction may be incorporated. Courses offered remotely will achieve or adapt stated learning outcomes for the remote environment. Instruction will maintain regular effective contact through conferencing and LMS applications. Instructional materials will be adapted to meet ADA compliance. Instructors will be supported through available campus resources including Alternative Media and Assistive Technology Specialist, DSPS Office, PD Lead, DE Lead, and other available resources to help ensure that instructional materials are accessible to persons with disabilities.

## **Assignments and Methods of Evaluation**

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### 1. Class Participation

- **Comment:** Description: Students are evaluated on their engagement during class activities.  
Example: Contributing to problem-solving discussions, asking questions, and participating in

group activities on topics like limits and derivatives. Addressing DEIA in this Evaluation Method: Diverse: Participation activities are designed to encourage diverse voices and perspectives in class discussions and collaborative projects, fostering an inclusive learning environment where all students feel valued. Equitable: Assessment of participation is based on fair and consistent criteria, taking into account various forms of participation, including verbal and written contributions, group collaboration, and online interactions, with accommodations available for students with diverse needs. Inclusive: Instructors create an inclusive classroom culture that respects and welcomes input from all students, ensuring that everyone has the opportunity to contribute to discussions and activities. Accessible: Participation opportunities are made accessible to all students, with flexible participation options, clear guidelines for engagement, and support available for those who may require accommodations to participate fully in class activities, discussions, or online platforms.

## 2. Homework

- **Comment:** Description: Regular assignments are given to students to complete outside of class. Example: Weekly problem sets that include exercises on finding limits, derivatives, and solving related rates problems. Students will be required to show their work so that they will grow in their ability to use and understand proper mathematical notation. Addressing DEIA in this Evaluation Method: Diverse: Homework assignments offer a variety of problems that appeal to different learning styles and abilities, fostering a diverse learning environment. Equitable: Grading criteria for homework are transparent and applied consistently to provide an equitable assessment of students' efforts. Inclusive: Homework deadlines and submission methods are flexible to accommodate students with diverse schedules and responsibilities. Accessible: Homework assignments are accessible to all students, with clear instructions and resources available for those who may need extra support.

## 3. Quizzes

- **Comment:** Description: Short, frequent formative assessments to gauge understanding of recent material. Example: Quizzes on the definition and computation of limits, derivative rules, and the chain rule. Addressing DEIA in this Evaluation Method: Diverse: Low-stakes quizzes cover a wide range of topics, offering students multiple opportunities to showcase their understanding of various aspects of the course material. Equitable: Accommodations are readily available for students with diverse learning needs, such as extended time or alternate quiz formats, ensuring a level playing field for all. Inclusive: Quiz questions are carefully crafted to be inclusive, avoiding cultural biases or any language that might disadvantage certain groups of students. Accessible: Quiz formats and platforms are chosen with accessibility in mind, and clear instructions are provided to make the quizzes as accessible as possible to all students, including those with disabilities.

## 4. Examinations

- **Comment:** Description: At least three summative examinations must be given, one of which must be a comprehensive final exam. Not all examinations may be assigned as take-home Example: Examinations should cover major topics such as differentiation techniques and applications of derivatives Addressing DEIA in this Evaluation Method: Diverse: Test questions and problems are designed to encompass a wide range of scenarios, ensuring that students from various backgrounds and experiences have the opportunity to excel. Equitable: Grading criteria are consistently applied, and adjustments are made to address potential biases, promoting fairness for all students. Inclusive: Accommodations are provided for students with

diverse learning needs, such as extended time or alternative testing formats, ensuring an equitable evaluation process. Accessible: Test formats are designed with accessibility features, such as clear instructions and accessible technology, to ensure all students can participate on an equal footing.

#### 5. Presentations (oral or visual)

- **Comment:** Description: Students present their understanding of a topic orally or using visual aids. Example: Presenting the concept and application of the Mean Value Theorem using graphs and examples. Addressing DEIA in this Evaluation Method: Diverse: Presentation topics are chosen to be inclusive and encompass a wide range of subjects, allowing students to select content that reflects their diverse interests and perspectives. Equitable: Clear presentation evaluation criteria are communicated in advance, and grading is consistently applied, ensuring an equitable assessment process. Inclusive: In group presentations, inclusive communication and collaboration are encouraged to ensure all group members can participate effectively and share their perspectives. Accessible: Presentation materials and formats are designed to be accessible to all students, including those with disabilities, and accommodations are readily available for students who may require additional support in delivering their presentations.

#### 6. Projects

- **Comment:** Description: Larger, often collaborative tasks that integrate multiple course concepts. Example: A project on optimizing real-world scenarios using calculus, such as maximizing the volume of a box with given constraints. Addressing DEIA in this Evaluation Method: Diverse: Project topics are designed to be inclusive, allowing students to choose subjects that reflect their unique interests, backgrounds, and perspectives, fostering a diverse range of project ideas. Equitable: Clear rubrics and assessment criteria are provided to all students, offering a transparent and equitable grading process, while adjustments are made to address any potential biases in project evaluation. Inclusive: Group projects encourage collaboration among students from diverse backgrounds to ensure a variety of experiences and insights contribute to the final project. Accessible: Project guidelines are designed to be accessible to all students, with instructors offering support and accommodations to address specific accessibility needs, ensuring that all students can participate fully in the project process.

#### 7. Portfolios

- **Comment:** Description: A collection of a student's work over time, showcasing their learning progression. Example: A portfolio including homework, quizzes, and reflective summaries on topics like integration and its applications. Addressing DEIA in this Evaluation Method: Diverse: Portfolios allow students to curate a collection of their work, providing an opportunity to showcase their diverse talents, perspectives, and achievements throughout the course. Equitable: Grading criteria for portfolios are transparent, consistent, and designed to assess the quality and depth of students' work fairly. Adjustments are made to address potential biases in portfolio assessment. Inclusive: Portfolio assessment encourages students to select a variety of assignments and projects that resonate with their individual learning styles, ensuring inclusivity and recognition of their unique strengths. Accessible: Portfolio submission platforms are chosen to be accessible, and guidelines are provided to create accessible digital portfolios. Accommodations are available to support students with diverse needs in the portfolio creation process, ensuring an accessible evaluation process for all students.

#### 8. Written Papers or Reports

- **Comment:** Description: Extended written work on specific topics. Example: A report on the historical development of calculus and its impact on modern science and engineering. Addressing DEIA in this Evaluation Method: Diverse: Written Papers and Reports incorporate diverse perspectives and examples from various cultures, genders, and backgrounds. For instance, discussing contributions to calculus from mathematicians of different nationalities and backgrounds can highlight diversity. Also, using a range of sources, including those authored by individuals from underrepresented groups, to provide a more comprehensive view of the topic. Equitable: Ensure all students have access to the necessary resources and support to complete their papers. This might include providing access to online journals, libraries, or writing assistance. Use fair and transparent assessment criteria that recognize effort, improvement, and understanding, rather than just final outcomes. Inclusive: Use inclusive language that respects all individuals and groups. Avoid biased or exclusive terminology. Select topics that are relevant and meaningful to a broad audience. For example, discussing the impact of calculus on various fields such as economics, biology, and social sciences can make the subject more relatable. Accessible: Provide the paper in accessible formats, such as digital copies that are compatible with screen readers for visually impaired students. Offer clear guidelines and support for students with disabilities, ensuring they can participate fully in the assignment. This may involve extended deadlines, alternative formats, or additional support.

#### 9. Cumulative finals or certifications

- **Comment:** Description: Comprehensive exam covering all course material. Example: A final exam with problems on all major topics, including limits, derivatives, integrals, and the Fundamental Theorem of Calculus that may be given orally or written. Addressing DEIA in this Evaluation Method: Diverse: The cumulative final exam covers a broad range of topics from the entire course, offering students an opportunity to demonstrate their understanding of a diverse array of concepts and skills acquired throughout the term. Equitable: The grading process for the final exam is consistent, and any potential biases are carefully considered and addressed to ensure fairness in assessment. Inclusive: The final exam is designed with inclusive language and questions that avoid cultural biases, ensuring that all students, regardless of their backgrounds, have an equal opportunity to perform well. Accessible: The final exam is administered in an accessible format, with clear instructions and accessible technology or accommodations available for students with diverse learning needs, ensuring equitable access to the assessment.

#### 10. Lab Work

- **Comment:** Description: Practical, hands-on activities or experiments. Example: Using graphing software to explore the behavior of functions and their derivatives, or conducting experiments to model physical phenomena with calculus. Addressing DEIA in this Evaluation Method: Diverse: Form diverse lab groups that bring together students from different backgrounds, perspectives, and skill levels. This encourages a variety of viewpoints and fosters collaborative learning. Use examples and case studies from diverse fields and cultures. For instance, when exploring applications of calculus, choose problems relevant to different cultural contexts or global issues. Equitable: Provide equal access to lab equipment and resources. Ensure all students have the necessary tools and support to perform experiments, regardless of their background. Develop equitable assessment methods that recognize individual contributions within group work and provide feedback aimed at personal growth and development. Inclusive: Ensure lab manuals and instructions use inclusive language that is respectful and non-biased. This helps create a welcoming environment for all students. Encourage every student to

participate actively in lab activities, ensuring that quieter or marginalized students have opportunities to contribute. Accessible: Ensure the lab environment is physically accessible to all students, including those with disabilities. This might involve adjustable lab benches, accessible equipment, and clear, navigable spaces. Provide lab instructions and materials in accessible formats, such as large print, braille, or digital formats compatible with screen readers. Ensure all videos used have captions. Offer assistive technologies and accommodations, such as text-to-speech software, magnification tools, or additional time for completing experiments.

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**Last Revision**

2024-12-09

**Board Approval**

2025-01-09