

Listen

# MATH1501, Calculus I, [Term]

## Course Instructor:

**[Instructor Name]**

[Institution name]

[Institution address]

Phone Number: (xxx) xxx-xxxx

Fax: (xxx) xxx-xxxx

E-mail address: xxxxxxxxxx@xxxxx.edu

**Office hours:****Xxxday, X:00 am/pm - X:00 am/pm**

During office hours, you can find me in XXX. You can also reach me during office hours at the above phone number.

**NOTICE:** Please use the internal course e-mail for general correspondence. I provide my external e-mail address for emergencies only. I cannot answer questions, accept assignments, or discuss grades via external e-mail so please use it for emergencies only.

**Response Time:** Unless you are notified otherwise, I will work to respond to all student questions and emails within 24 hours during the week and within 48 hours during the weekend.

## Accessibility Services

In order to receive special accommodations, **students must provide documentation to the instructor** from the disabilities center at their affiliate institution or from the Regents Center for Learning Disorders. If you are a student who is disabled as defined under the Americans with Disabilities Act and require assistance or support services, **please notify the instructor prior to attempting any activities or assessments in this course during the first week of class.**

Also, students with disabilities or who require special testing accommodations must contact the Proctored Exam Testing Coordinator at [etesting@westga.edu](mailto:etesting@westga.edu) before scheduling a proctored exam appointment.

Other resources:

- <https://ecore.usg.edu/current-students/accessibility-services>
- <http://www.section508.gov>
- <http://www.w3.org/TR/WCAG/>
- <http://webaim.org/>

## Attendance Verification

**IMPORTANT-** In order to confirm your attendance and participation in this course, you must complete the Mandatory Attendance Quiz AND the Introductions discussion activity before the participation deadline. Please note that failure to complete these activities may result in you being removed from the course.

Participation dates for the term can be found in the News widget on your course homepage or at the following URL:

<https://ecore.usg.edu/courses/calendar/index.php>. BOTH of these activities are required and can be found within the Course Content's Start folder.

The screenshot shows a course interface with a top navigation bar containing 'Mandatory Attendance Quiz' and 'Introductions', both with checkmarks. Below the navigation bar, the 'Introductions' section is titled and contains the following text:

To complete this assignment, introduce yourself to the class. This will allow you to get to know the people you are in class with quickly.

After you post your introduction, be sure to read the introductions of your peers and respond to at least two of them.

**Participation in this discussion activity is mandatory and will help fulfill one of your attendance requirements. If you haven't already done so, be sure to also attempt the Mandatory Attendance Quiz.**

## Course Description:

Welcome to **eCore MATH 1501!**

This course is a four (4) credit hour course and includes material on functions, limits, continuity, the derivative, antidifferentiation, the definite integral, and techniques of integration.

## Course Credit Compliance:

This course will be delivered entirely online with the exception of the minimum of one face-to-face (FTF) proctored exam and a maximum of two FTF proctored exams. This requires the online equivalent of 3000 minutes of instruction (instruction time) and an additional 6000 minutes of supporting activities. As such, you will be required to complete the following online activities during this course (times are approximate):

Instruction Time	
Discussion Postings	500 minutes
Virtual meetings/chat or audio & video	700 minutes
Course Content Facilitation	800 minutes
Quizzes/ online exams/ practice exercises	700 minutes
Proctored Exams	300 minutes

It is anticipated that students will need to work independently for twice the number of minutes listed above to complete the online activities.

## Prerequisites:

- MATH 1113 – Precalculus

## Course Objectives:

- 1: Limits and Continuity :
  - Calculate and evaluate limits and represent these concepts graphically, algebraically, numerically and in words.
  - Apply knowledge of limits and continuity to analyze and solve real-world problems.
  - Determine when the use of technology is appropriate for solving problems related to limits and continuity, and how to apply the technology.
- 2: Derivatives and Differentiation :
  - Explain the definition of derivative and how it is related to tangent lines and rates of change, and to compute derivatives from the limit definition.
  - Compute derivatives using all of the standard rules, displaying, in particular, a strong mastery of the Chain Rule.
  - Compute derivatives of trigonometric functions and compute closely related trigonometric limits.

- Explain the concept of an implicitly defined function, and use the technique of implicit differentiation to differentiate functions that are defined implicitly.
- Model and solve related rates problems.

### 3: Applications of the Derivative :

- Solve problems related to rates of change.
- Identify and describe properties of functions and their graphs.
- Apply the properties of functions and their graphs to real life problem situations.

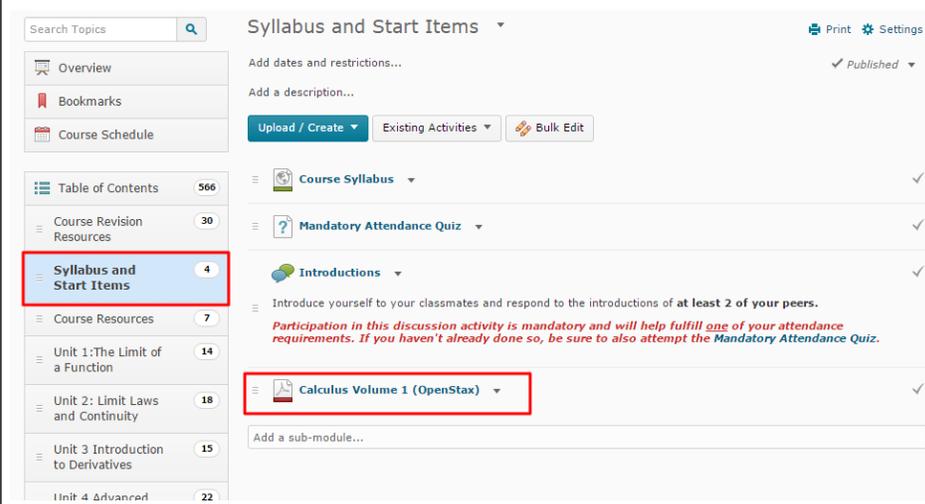
### 4: Integration :

- Calculate anti-derivatives by using some basic rules.
- Evaluate anti-derivatives using the substitution technique.
- Define the definite integral.
- Evaluate a few definite integrals using the definition as a limit of Riemann sums.
- State the Fundamental Theorem of Calculus.
- Apply the Fundamental Theorem of Calculus to evaluate definite integral.

## Course Text

eCore has explored cost-reducing options for students and currently offers an open source text for this course. The term *open* implies information or technology that is shared freely without copyright restrictions.

The open text for this course allows students to read, download, and/or print the book chapters at no cost. **The textbook is embedded in the 4 units that constitute the course.**

<b>Title:</b>	<i>Calculus Volume I (OpenStax Textbook)</i>
<b>Author:</b>	Gilbert Strang, Edwin "Jed Herman.
<b>Publisher:</b>	OpenStax, Rice University
<b>Edition/Year:</b>	2016
<b>Access:</b>	<p>The PDF copy of the textbook are available from "Syllabus and Start Item".</p>  <p>The required readings in each lesson are adopted from the Calculus Volume 1, OpenStax textbook.</p> <p>If you prefer, you can access</p> <ul style="list-style-type: none"> <li>• <b>PDF Format:</b> <a href="https://d3bxy9euw4e147.cloudfront.net/oscms-prodcm5/media/documents/Calculus_Volume_1-OP.pdf">https://d3bxy9euw4e147.cloudfront.net/oscms-prodcm5/media/documents/Calculus_Volume_1-OP.pdf</a></li> <li>• <b>Web Textbook:</b> <a href="https://cnx.org/contents/8b89d172-2927-466f-8661-01abc7ccdba4">https://cnx.org/contents/8b89d172-2927-466f-8661-01abc7ccdba4</a></li> </ul> <p><b>Note:</b></p>

	<p>If you prefer a hard copy of the textbook, you can purchase one at:  <a href="https://www.amazon.com/Calculus-1-OpenStax/dp/193816802X/ref=sr_1_22?s=books&amp;ie=UTF8&amp;qid=1479491393&amp;sr=1-22">https://www.amazon.com/Calculus-1-OpenStax/dp/193816802X/ref=sr_1_22?s=books&amp;ie=UTF8&amp;qid=1479491393&amp;sr=1-22</a></p>
<b>Additional Information:</b>	<p><b>ISBN-10:</b> 193816845  <b>ISBN-13:</b> 978-1-938168-02-4  <b>License:</b> Creative Commons Attribution-NonCommercial-ShareAlike License v4.0</p> 

## Materials

- TI-83 or TI-84 Calculator with computer cable or TI-83 Plus or TI-84 Plus

## Media Tools

For this course it is important to note that you will be required to submit your worked examples -handwritten or produced in Word- for the Homework. For that reason, you are required to have access to some type of recording device to capture and submit your work:

- Microsoft Word to demonstrate your work in a text format *or*
- Digital camera, phone camera, scanner or webcam to submit a photocopy of your hand-written work

## Planet eCore

Visit the Planet eCore blog to read about eCore students, faculty, and trends in online education: <http://planetecampus.blogspot.com/>.

## Technical Requirements and Assistance

### Requirements:

Having a correctly configured computer will help ensure your success in eCore. Check the information at <http://ecore.usg.edu/prospective/techreqs.php> to be sure that your computer meets all the necessary technical requirements for hardware and software. Links to the plug-ins (special free software) that you will need are provided.

### Assistance:

For technical assistance contact the 24/hour helpline at <https://d2lhelp.view.usg.edu/> (scroll down to the Student Support area).

In addition, please contact the eCore Helpline at 678-839-5300.

## Discover an Error?

If you discover a typo, broken image, or other error in your eCore course, use the [eCore Student Change Request Form](#) to report the required change. Once the form is submitted, an eCore staff member will contact you within 48 hours.

Please note that this form is NOT for grade related or instructor related complaints. To report this type of information, please access the [Student Complaint Policy](#) page on the eCore website.

## Smarthinking Online Tutoring:

Smarthinking is an online tutoring resource for eCore students providing assistance in Mathematics (basic Math through Calculus), Chemistry, Physics, Statistics, Spanish, and Writing. For login instructions, please refer to the [Smarthinking page](#) located within Course Resources or access Smarthinking directly using the  icon from the course navigation bar.

## Grading and Standards

### Grade Breakdown

GRADED ACTIVITY	WEIGHT	PROCTORED?	BRIEF DESCRIPTION
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**Participation/Discussions** 5%

Each student is required to make a minimum of 1 substantive posts in the discussion areas each week to be considered active in the course. More guidelines will follow about this within the discussion areas.

**Homework x4** 5%

Four homeworks are required you to use pen/pencil and papers and solve each problem clearly and neatly, showing all the necessary steps. Scan and upload your work via assignments tool before the deadline.

**Lesson Quizzes x16** 10%

You are required to access the online quizzes through the links provided within the content of each lesson. You will be allowed 3 attempts per quiz, and the highest score of the three will be kept. Follow the course calendar so that you know by which date each lesson, and therefore, any quizzes within the lesson should be completed. Check the calendar frequently for updates.

**Online Exams x4** 40%

Every two units concludes with an Online Exam. This is a timed exam and will be offered online. You have 2 hours to complete the exam once you have started. There is only one attempt.

**Midterm Exam** 20% YES

The mid-term exam will be given in a proctored environment. You may take the proctored exam at any of the affiliate institutions' testing centers or you must locate an independent proctor. See the [Student Guide to eCore](#) for further information about test proctoring. Students may use a TI83 calculator or TI84 calculator on exams.

**Final Exam** 20% YES

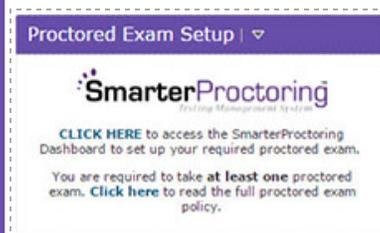
The final exam will be given in a proctored environment. You may take the proctored exam at any of the affiliate institutions' testing centers or you must locate an independent proctor. See the [Student Guide to eCore](#) for further information about test proctoring.

Students may use a TI83 calculator or TI84 calculator on exams.

NOTE: Any student who does not complete at least one proctored exam will receive an F in the course regardless of the student's average. This is eCore policy.

**Proctored Exams**

**A proctored experience is required for successful completion of an eCore course. In courses requiring only one proctored exam, failure to take that exam will result in a failing grade for the course regardless of average of other grades.**



Proctored exams are password protected exams taken at an approved testing center or testing service. Students are responsible for scheduling and taking their exams by the posted deadline. Students are also responsible for being aware of the conditions and policies under which the exam will be proctored and administered. Each testing center or service sets its own proctor cost.

On the Course Homepage, use the **Proctored Exam Setup Widget** to view available proctored exams for the course, register for an exam, view an exam's duration, and view the list of allowed proctored material.

## Grade Scale

Grades are based on student performance and capability. Simply turning in all the assignments does not guarantee that the student will receive a "good grade." To receive a higher grade, a student must demonstrate proficiency in the material. For different students, gaining that proficiency requires different levels of work, because not all students walk into the class with the same aptitude for the course content. The standards for the respective grades are as follows:

- A: 90-100%
- B: 80-89%
- C: 70-79%
- D: 60-69%
- F: 0-59%

## Grade Turnaround

All assignments and assessments will be graded within one week's time. The instructor will provide comments along with grade as necessary for feedback. All emails will be answered within 24 hours.

## Expectations and Standards

**A** – To achieve this grade the student must display superior performance in his/her course work. This includes demonstrating the ability to process and comprehend complex ideas, and to be able to convey those ideas to others in a clear, intelligent manner. An "A" student will go beyond simple requirements and seek to excel in his/her preparation for and presentation of assigned work. He/she will demonstrate excellence in communication skills and the ability to contextualize material.

**B** – To achieve this grade the student needs to display above average performance in his/her course work, including demonstrating the ability to process and comprehend complex ideas, while being able to convey those ideas in a clear, intelligent manner. A "B" student will also go beyond minimum requirements in terms of preparation and presentation of assigned work. He/she will demonstrate above average communication skills and ability to contextualize material.

**C** – For this grade the student must meet the minimum requirements for the course, displaying adequate performance in his/her course work, and adequately demonstrate the ability to comprehend complex ideas, while also being able to convey those ideas in a like manner. A "C" student demonstrates competence in terms of preparation and presentation of assigned work. He/she will demonstrate adequate communication skills and ability to contextualize materials.

**D** – A student receiving this grade is performing below the minimum requirements for the course. This could include failure to complete or turn in assignments on a timely basis, or failure to adequately demonstrate the ability to comprehend or convey complex ideas. A "D" student performs below the average in terms of preparation and presentation of assigned work. He/she may not be demonstrating adequate communication skills or ability to contextualize materials.

**F** – A student receiving this grade has failed to meet the requirements of the course, including failure to complete or turn in assignments, or failure to demonstrate the ability to comprehend or convey complex ideas. An "F" student has not performed in a manner satisfactory to the standards of the class.

## Attendance, Participation, and Late Policy

Time Management Guidelines :

"Attendance" and participation are required. You will be expected to participate in ongoing discussions of the lesson topics and to interact with other students and your instructor regularly. It is expected that you will demonstrate a positive attitude and courtesy toward other participants in the discussion and observe good discussion netiquette. Be sure to read and observe the following procedures:

- You are a guest in the instructor's classroom, so be sure to observe the class rules.
- Practice manners and civility, and be polite and respectful of your instructor and classmates in all your communication.
- Respect your instructor, and be on time in your work submissions.
- Keep your instructor informed of your status.
- Address your instructor as Professor or Doctor.
- Use correct grammar and punctuation in all your communication ('Dear Professor xxx' not 'Hey').
- Accept your instructor's feedback and learn from it.

In the online environment, problems associated with power outages, networks being down, and ISP troubles inevitably result in legitimate reasons for delays, however, you should still be prepared to deliver your work by the stated deadlines. If you have a problem, let your instructor know as soon as possible. The student who repeatedly turns in late work will be subject to penalties.

**Time Commitment :**

Taking an online course is not easier or faster. On the contrary, it will take as much time as taking a face-to-face class or more. If you normally go to class 3 hours per week per course, you will need to devote that same amount of time to your online course. In addition to online time, you should spend time studying and working with course materials several hours per week offline. It will be helpful to set aside regular study time when you can work uninterrupted. Offline time could be spent in composing messages to post online, reading, studying, and working homework problems.

The amount of time it will take you to complete the work for the course will depend on many factors, which will vary with each individual. Students can expect to spend anywhere from 8 - 15 hours per week on this course. Consult the course Calendar and your instructor to be sure you are on schedule, keeping up with the material and taking quizzes on time.

As a general rule, in this course you will be expected to:

- Log in regularly to check messages from your instructor and other students.
- Check the Calendar for announcements from your instructor.
- Study, read online materials, and work all assigned problems for each lesson.
- Complete all course work and assignments in the time allowed.

## Unit Breakdown

The following lessons are covered in this course:

The course consists of the following:

- Unit 1: The Limit of a Function
  - Lesson 1.1: Average Velocity and Secant Lines
  - Lesson 1.2: The Limit of a Function
- Unit 2: Limit Laws and Continuity
  - Lesson 2.1: Limit Laws
  - Lesson 2.2: Continuity
- Unit 3: Introduction to Derivatives
  - Lesson 3.1: Defining the Derivative
  - Lesson 3.2: Derivative Rules
- Unit 4: Advanced Derivatives
  - Lesson 4.1: The Chain Rule and Inverse Functions
  - Lesson 4.2: Implicit Differentiation and Exponentials & Logarithms
- Unit 5: Applications of Derivative 1
  - Lesson 5.1: Related Rates and Linear Approximations
  - Lesson 5.2: Extrema and the Mean Value Theorem
- Unit 6: Applications of Derivative 2
  - Lesson 6.1: The Shape of a Graph
  - Lesson 6.2 Limits at infinity, asymptotes and graphing, techniques; Optimization
- Unit 7: Antiderivatives and the Definite Integral
  - Lesson 7.1: Antiderivatives
  - Lesson 7.2: Areas and the Definite Integrals
- Unit 8: Integration
  - Lesson 8.1: Fundamental Theorem of Calculus and Substitution
  - Lesson 8.2: Exponentials & Logarithms and Inverse Trig Functions

## Academic Honesty

*(Acknowledgment is hereby given to Georgia State University on whose policy this is based).*

As members of the academic community, all students are expected to recognize and uphold standards of intellectual and academic integrity. The University System of Georgia assumes as a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work.

In an effort to foster an environment of academic integrity and to prevent academic dishonesty, students are expected to discuss with faculty the expectations regarding course assignments and standards of conduct. In addition, students are encouraged to discuss freely with faculty, academic advisers, and other members of the academic community any questions pertaining to the provisions of this policy.

## Definitions and Examples

The examples and definitions given below are intended to clarify the standards by which academic honesty and academically honorable conduct are to be judged.

- Plagiarism
- Cheating on examinations
- Unauthorized Collaboration
- Falsification
- Multiple Submissions
- Evidence and Burden of Proof

The list is merely illustrative of the kinds of infractions that may occur, and it is not intended to be exhaustive. Moreover, the definitions and examples suggest conditions under which unacceptable behavior of the indicated types normally occurs. However, there may be unusual cases that fall outside these conditions that also will be judged unacceptable by the academic community.

## Plagiarism

**(NOTE: Plagiarism detection systems are often used by eCore faculty members. For example, see the following site: [http://turnitin.com/en\\_us/training/student-training](http://turnitin.com/en_us/training/student-training). Faculty are also advised to report violations to the eCore Administrative offices for investigation.)**

Plagiarism is presenting another person's work as one's own. Plagiarism includes any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student's work as one's own. Plagiarism frequently involves a failure to acknowledge in the text, notes, or footnotes the quotation of the paragraphs, sentences, or even a few phrases written or spoken by someone else.

The submission of research or completed papers or projects by someone else is plagiarism, as is the unacknowledged use of research sources gathered by someone else when that use is specifically forbidden by the instructor. Failure to indicate the extent and nature of one's reliance on other sources is also a form of plagiarism.

Finally, there may be forms of plagiarism that are unique to an individual discipline or course, examples of which should be provided in advance by the instructor. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences of violating this responsibility.

## Cheating on Examinations

Cheating on examinations involves giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include the use of notes, texts, "crib sheets," websites, electronic documents or notes, and computer programs during an examination (unless specifically approved by the instructor), or sharing information with another student during an examination (unless specifically approved by the instructor). Other examples include intentionally allowing another student to view one's own examination and forbidden collaboration before or after an examination.

## Unauthorized Collaboration

Submission for academic credit of a work product, developed in substantial collaboration with other person or source but represented as one's own effort, is unauthorized. Seeking and providing such assistance is a violation of academic honesty. However, collaborative work specifically authorized by an instructor is allowed.

## Falsification

It is a violation of academic honesty to misrepresent material or fabricate information in an academic exercise, assignment or proceeding. Some examples of falsification are

- false or misleading citation of sources
- the falsification of the results of experiments or of computer data
- false or misleading information in an academic context in order to gain an unfair advantage.

## Multiple Submissions

It is a violation of academic honesty to submit substantial portions of the same work for credit more than once without the explicit consent of the instructor(s) to whom the material is submitted for additional credit. In cases in which there is a natural development of research or knowledge in a sequence of courses, use of prior work may be desirable, or required. However, the student is responsible for indicating in writing, that the current work submitted for credit is cumulative in nature.

## Evidence and Burden of Proof

In determining whether or not academic dishonesty has occurred, guilt must be proven by a preponderance of the evidence. This means that if the evidence that academic dishonesty occurred produces a stronger impression and is more convincing compared to opposing evidence, then academic dishonesty has been proven. In other words, the evidence does not have to be enough to free the mind from a reasonable doubt but must be sufficient to incline a reasonable and impartial mind to one side of the issue rather than to the other. Evidence, as used in this statement, can be any observation, admission, statement, or document that would either directly or circumstantially indicate that academic dishonesty has occurred. Electronic means may be used to monitor student work for the inappropriate use of the work of others.

Consult your eCore Student Guide at <https://ecore.usg.edu/current-students/student-guide/policies-and-procedures#student-academic-dishonesty-procedures> for further details on the eCore Academic Honesty Policy.