CONSORTIUM
of Adventist Colleges & Universities

SYLLABUS

AU MATH 191 950 Calculus I
2019-2020
Fall and Spring Semesters

AU Math 191 950 Calculus I
Consortium of Adventist Colleges and Universities

Interactive Online Format
This course follows an interactive online format **with Wednesday/Sunday deadlines**. You are expected to login regularly during the course to participate in the online discussions. Please review the Dates & Deadlines widget on the right side of your course in LearningHub for the last day to withdraw for a full refund. Please plan accordingly

Instructor Contact
Instructor: Jan Henry
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Other Assistance

Username and password assistance	helpdesk@andrews.edu	(269) 471-6016
Enrollment and withdrawal questions	sderegister@andrews.edu	(269) 471-6323
Technical assistance with online courses	dlit@andrews.edu	(269) 471-3960
Exam requests and online proctoring	sdeexams@andrews.edu	(269) 471-6566
Distance Student Services - any other questions	sdestudents@andrews.edu	(269) 471-6566

Part 1: Course Information

Course Descriptions
Andrews University
This course is a standard introduction to single-variable calculus. It includes limits, continuity, derivatives, applications, and integration up through and including substitution and integration by parts. Formal definitions of the limit, derivative, and Riemann integral are included. Proofs of standard theorems, including the Fundamental Theorem of Calculus, are given. Fulfills the General Education Mathematics reasoning requirement.

Prerequisite
Andrews University
MPE>P5 or MATH 167 or MATH 168 with a grade of C or better

Course Learning Outcomes
- Understand the foundational concepts of the differential Calculus.
- Learn to use the derivative as a tool for understanding function behavior.
- Engage in mathematical thinking, reasoning, and problem solving.
- Become proficient in expressing clear and accurate solutions to calculus problems in written form.
- Catch a glimpse of the power of calculus and the limitless aspects of God's character.

Required Textbook and Course Material

There are two textbook options. The first (recommended) option includes text for both Calculus I and Calculus II. The second option includes just the text for Calculus I.

- Stewart, James, *Calculus: Concepts and Contexts*, 4th edition (2010), Brooks-Cole, ISBN 9780495557425.
- Stewart, James, Single Variable Calculus: Concepts and Contexts, 4th edition (2010), Brooks-Cole, ISBN 9780495559726.

NOTE: Purchase textbooks through any online bookstore, such as **amazon.com**, which can deliver within 2 days. If you need to use financial aid to purchase textbooks, email **sdestudents@andrews.edu**, cutting and pasting the textbook information from syllabi, including course title and section, your full name and student ID#.

Credit Hours

This course is offered for 4 credits; therefore, it is expected that you would spend 12 hours per week during the 15 week duration of the class. It is suggested that you divide your weekly study time as follows:

- Textbook Reading/Powerpoint Slides: 2-3 hours
- Online Lectures: 2-3 hours
- Online Mandatory Class Meeting: 1 hour
- Discussion Posts: 30 minutes
- WeBWorK Assignments: 5 hours 30 minutes
- Solution-Write Up Assignments: 1 hour

This schedule will vary somewhat throughout the course, especially during weeks in which exams are scheduled.

NOTE: There is an online mandatory meeting that meets every Thursday evening from 7:30 p.m. – 8:30 p.m. In the course, you will find the meeting link.

Part 2: Course Methods

Course/Technical Requirements

- Modern computer system including:
  - High speed internet connection (DSL, Cable Modem, LAN)
  - Modern web browser (Google Chrome 19+, Firefox 3.0+, IE 9+, etc) with flash plugin for viewing videos
  - Sound card and speakers/headphones for listening to videos
  - Adobe Acrobat Reader (free from http://www.adobe.com/)
- Simple scientific calculator including trigonometric, exponential, and logarithmic functions. (You may not use a calculator capable of symbolic mathematics on exams).

Learning Management System

This course is delivered online through Moodle at http://learninghub.andrews.edu

Your username and password is your Andrews username and password. You need to activate your username and password to access LearningHub.

Please do this online here:
https://vault.andrews.edu/vault/pages/activation/information.jsp if you haven't already. If you need assistance, call or email us: (296) 471-6016 or helpdesk@andrews.edu.

If you need technical assistance at any time during the course, or to report a problem with LearningHub, please email dlit@andrews.edu or call (269) 471-3960.

Part 3: Course Requirements

Important Note: This online class is **not** self-paced. You can arrange your schedule flexibly during each week, but you MUST participate each week. You are expected to "show up" to class by reading the textbook sections, watching the video lectures, completing the homework, and interacting in the discussion forums regularly during the week. Adequate Internet access during the duration of the course is critical for your participation. To be successful, plan to spend time daily on the course.

Please Be Advised: The schedule is provided in advance so you may read ahead of schedule. Your dedication, professionalism, and excellence in study skills habits are necessary. If you have any course content questions, please contact your professor. If you have technical questions, contact dlit@andrews.edu.

The various activities listed in the course schedule below fall into two categories: non-graded activities and graded assignments. The activities in each category are described below in more detail.

Non-Graded Activities

Even though these activities do not count directly towards your grade, they are important steps in the learning process.

- **Textbook Readings**
  Before watching the lecture videos or attempting the assignments for a given section, you should read the associated textbook section. Mathematics textbooks should be read with pencil and paper so that you can work your way through the examples as you read.

- **Powerpoint Presentations**
  Powerpoint presentations are provided corresponding to each textbook section. These presentation slides are useful for guiding your reading and for reviewing the concepts given in the text.

- **Lecture Videos**
  Associated with each section of the textbook is a video or collection of videos which is equivalent to a lecture in a face-to-face course. These videos highlighting the most important parts of each section, give useful hints or shortcuts, and providing you with examples in addition to those given in the text. You should read through the lessons and watch the video examples **before** starting on the associated WeBWorK or written assignments.

Graded Course Activities

These assignments give you the opportunity to demonstrate mastery of the course material. They are divided into several categories, each with a specific purpose and weight.

- **WeBWorK Assignments (12% of your grade)**
  Mathematics is not a spectator sport! Reading your textbook and watching lecture videos is typically not enough for you to master the material. As an athlete must spend hours practicing in order to excel in his or her sport, so you must practice your Calculus skills if you wish to do well on exams.

  The online homework system WeBWorK will help you do just that by checking your answers and giving you instantaneous feedback. After reading your textbook and watching the videos for a section, print out the associated WeBWorK assignment and work through the problems on paper. When you are comfortable with your answers (after possibly seeking help), return to WeBWorK and submit them. Don't worry if you get them wrong the first time. In most cases you have an unlimited number of attempts on each problem (but don't just guess either—that defeats the purpose of doing the homework to learn the material). If WeBWorK marks one of your answers wrong, go back and check your work or seek assistance using WeBWorK's Email Instructor button.

- **Solution Write-Up Assignments (10% of your grade)**
  While WeBWorK can check your final answer, it does not check your solution process, your ability to present that solution, or your ability to construct a basic proof or draw a graph. In order to do well in the exams, you must not only be able to find the right answer, but express your solution using correct mathematical notation in a logical and well-organized fashion. To help you practice these skills, you will be asked to complete a solution write-up assignments for each chapter covered in the course. In these assignments you will present solutions to selected problems from your textbook. You will then scan or take a picture of your work and upload it to Moodle.

- **Discussion Posts (5% of your grade)**
  Several times during the term you will be asked to respond to a discussion question. These questions promote the integration of faith and learning by asking you to reflect on the connections between mathematics and spiritual issues. Discussion questions involve the entire class and you will be expected to both answer the question yourself and comment on fellow class members' responses. The following rubric will be used to evaluate your initial posts and responses

	Excellent (5)	Average (3)	Below Average (1)	Unacceptable (0)
Response is:	well thought-out, addressing the question carefully and completely.	reasonable, but does not address all aspects of the question, addresses them carelessly.	minimal, showing little thought and missing many question aspects completely.	off topic or completely missing.

- **Midterm Exams (2 x 20 = 40% of your grade)**
  There will be two midterm exams during the term. The first covers the material from chapters one and two. The second covers chapters the last section of chapter two, chapter three and most of chapter four. The exams are administered by a proctor (see below) and will be taken with pencil and paper. You may use a simple scientific calculator (without symbolic math capabilities) on both exams, but you must show all steps in your solutions. Solutions lacking neatness and/or proper evidence will be

discounted at the instructor's discretion.

- **Final Exam (30% of your grade)**
  The final exam is comprehensive, but emphasizes the material from after the second exam. That is the last two sections of chapter four and all of chapter five. The format of the final is similar to that of the midterm, with the same rules applying.

Assessment Feedback

Feedback on assignments and exams will be provided in a timely manner, as outlined below.

- **WeBWorK Assignments**
  Feedback is provided instantaneously by the WeBWorK system. If you have questions, or believe that you have entered a correct solution that is not being accepted, please email your instructor using the Email Instructor button at the bottom of each WeBWorK page or post a question to the Homework Help Forum at the top of the course homepage in Moodle.

- **Solution Write-Up Assignments**
  Your instructor will grade your write-up assignments and post your score, along with comments on any improvements you should make to your solution writing, within one week of the date on which you submit the assignment.

- **Discussion Posts**
  Feedback on your discussion posts will be provided within one week of the posting due date.

- **Exams**
  All students midterm and final exams will be graded together to ensure equitable partial credit is assigned. For this reason, your instructor will not start grading exams until all students' exams have been received from the proctors. Grading will be completed within one week of the date that the last exam is received. Exam scores will be posted, but the exams themselves will not be returned. You may contact your instructor for additional feedback on your exam performance.

Exams

All tests and exams in this course are proctored through the School of Distance Education Testing Center. Your proctor will open your exam through Webworks at the start of your scheduled exam session. Please request your exam when prompted in the module(s) indicated prior to the exam. Appointments for proctoring in or online through the Testing Center are set up online at calendly.com/sde-exams/online.

Note that an exam code is never released to the student, and cannot be sent to a proctor who has the same address as the student unless the address is known to be that of a school or mission facility. All students must present photo identification at the start of each exam session.

If you cannot take your exam by the deadline date, email specific reasons and your recovery plan to your instructor before the deadline. Your exam cannot be proctored after the exam deadline without email or phone approval directly from the instructor to the Testing Center

(sdeexams@andrews.edu or 269-471-6566). The Testing Center will then work with a local proctor if needed.

No exam is returned to the student. Instructor feedback on exams prior to the final exam will be provided to aid studying for future exams.

For more details on taking exams and how online proctoring works, please see www.andrews.edu/distance/students/exams.html

You may not use your textbook and notes to solve the test problems. Using your own paper, the answers need to be clearly numbered, written and work must be shown. The tests must taken in one setting, within a 180-minute period. The tests may not be repeated, so do not attempt the tests until you have completed the homework assignments and quizzes for that chapter. No exam is returned to the student. Test grades are sent to the student as soon as the exam is graded. Feedback from the instructor for exams will provide information for studying for future exams.

Schedule

All due dates are Eastern Standard Time

Week	Readings/Online Meetings	Assignments
1 August 26 - September 1	**Online Meeting: August 29**	Introductions Forum Post Academic Integrity Quiz & Statement
2 September 2-8	1.1-1.3: Review of Functions **Online Meeting: September 5**	WeBWorK 1.1-1.3
3 September 9-15	Apx. C: Trigonometry **Online Meeting: September 12**	WeBWorK Apx.C
4 September 16-22	1.5: Exponential Functions 1.6: Inverse Functions and Logarithms **Online Meeting: September 19**	WeBWorK 1.5 WeBWorK 1.6
5 September 23-29	1.7: Parametric Curves **Online Meeting: September 26**	WeBWorK 1.7 Solution Write-Up Chapter 1
6 September 30 - October 6	2.1: The Tangent and Velocity Problems 2.2 The Limit of a Function **Online Meeting: October 3**	WeBWorK 2.1 WeBWorK 2.2
7 October 7-13	Apx. D: Precise Definition of a Limit **Online Meeting: October 10**	WeBWorK Apx. D Discussion Question #1
8 October 14-20	2.3: Calculating Limits Using the Limit Laws **Online Meeting: October 17**	WeBWorK 2.3
9 October 21-27	2.4: Continuity 2.5: Limits Involving Infinity **Online Meeting: October 24**	WeBWorK 2.4 WeBWorK 2.5
10 October 28 - November 3	2.6: Derivatives and Rates of Change **Online Meeting: October 31**	WeBWorK 2.6
11 November 4-10	2.7: The Derivative of a Function **Online Meeting: November 7**	WeBWorK 2.7
12 November 11-17	**Online Meeting: November 14**	**PROCTORED Exam I**
13 November 18-24	2.8: What does f' Say about f? **Online Meeting: November 21**	WeBWorK 2.8 Solution Write-Up Chapter 2

Week	Readings/Online Meetings	Assignments
14 November 25 - December 1	**Thanksgiving Break** No class meeting	
15 December 2-8	3.1: Derivatives of Polynomials & Exponentials **Online Meeting: December 5**	WeBWorK 3.1
16 December 9-15	3.2: The Product and Quotient Rules 3.3: Derivatives of Trigonometric Functions **Online Meeting: December 12**	WeBWorK 3.2 WeBWorK 3.3
December 16 – January 5	**Christmas Break** No class meetings	
17 January 6-12	3.4: the Chain Rule **Online Meeting: January 9**	WeBWorK 3.4
18 January 13-19	3.5: Implicit Differentiating **Online Meeting: January 16**	Discussion Question #2 WeBWorK 3.5
19 January 20-26	3.6: Inverse Trig Functions & Their Derivatives 3.7: Derivatives of Logarithmic Functions **Online Meeting: January 23**	WeBWorK 3.6 WeBWorK 3.7
20 January 27 – February 2	3.9: Linear Approximations and Differentials **Online Meeting: January 30**	WeBWorK 3.9 Solution Write-Up Chapter 3
21 February 3-9	4.1: Related Rates 4.2: Maximum and Minimum Values **Online Meeting: February 6**	WeBWorK 4.1 WeBWorK 4.2
22 February 10-16	4.3: Derivatives and the Shapes of Curves 4.5: Indeterminate Forms and l'Hopital's Rule **Online Meeting: February 13**	WeBWorK 4.3 WeBWorK 4.5
23 February 17-23	4.6: Optimization Problems **Online Meeting: February 20**	WeBWorK 4.6
24 February 24 – March 1	**Online Meeting: February 27**	**PROCTORED Exam II**
25 March 2-8	4.7: Newton's Method **Online Meeting: March 5**	WeBWorK 4.7
26 March 9-15	4.8: Antiderivatives **Online Meeting: March 12**	WeBWorK 4.8 Solution Write-Up Chapter 4
27 March 16-22	**Spring Break** No class meeting	
28 March 23-29	5.1: Areas and Distances **Online Meeting: March 26**	WeBWorK 5.1
29 March 30 – April 5	5.2: The Definite Integral **Online Meeting: April 2**	WeBWorK 5.2 Discussion Question #3
30 April 6-12	5.3: Evaluating Definite Integrals 5.4: The Fundamental Theorem of Calculus **Online Meeting: April 9**	WeBWorK 5.3 WeBWorK 5.4
31 April 13-19	5.5: The Substitution Rule **Online Meeting: April 16**	WeBWorK 5.5
32 April 20-26	5.6 Integration by Parts **Online Meeting: April 26**	WeBWorK 5.6 Solution Write-Up Chapter 5
33 April 27 - 29	**PROCTORED Final Exam** **(must be completed by Wednesday, April 30, 11:59 pm)**	

Assignment Submission and Grading

All assignments for this course will be submitted electronically through Moodle and WeBWorK unless otherwise instructed. Assignments and exams must be completed in the order noted on the schedule.

Part 4: Grading Policy

A summary of the weights for the various graded assignment types is given below. You will need to complete every Assignment, the Midterm Exam, and the Semester Exam before a grade can be issued.

Percent	**Description**
12	WeBWorK
3	Meeting Attendance
10	Solution Write-Ups
5	Journal Posts
2 x 20 = 40	Midterm Exams
30	Final Exam
100%	**Total Percent Possible**

Viewing Grades in Moodle

To view your grades at any time, follow the steps listed below. Note that grades for written assignments, journal posts, and exams may take some time to be calculated and posted, as described above.

- Click into the course.
- Click on the **Grades** link in the Settings Box to the left of the main course page.

Letter Grade Assignment

Letter Grade	Percentage
A	93-100%
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%
C-	70-72%
D	60-69%
F	0-59%

Part 5: Course Policies

Withdrawal and Incomplete Policies

The current withdrawal policy can be found online at https://www.andrews.edu/distance/students/gradplus/withdrawal.html. The incomplete policy is found online at http://www.andrews.edu/weblmsc/moodle/public/incompletes.html.

Incomplete Policy

An Incomplete (I) indicates that the student's work is incomplete because of illness or unavoidable circumstances and not because of negligence or inferior performance. Students will be charged an incomplete fee for each incomplete grade issued.

Communication with the Instructor

It is important to remember that while the Internet is available 24 hours a day, your instructor is not. You can expect that your instructor will respond to an e-mail message within 2 business days during the week and may not be available to respond on weekends.

Unlike in a face-to-face class, your instructor can not tell if you did not understand a concept by watching your expression. To help make your online learning experience go smoothly, please remember the following points.

- It is your responsibility to initiate contact with your instructor or otherwise seek out help if you do not understand something.
- Do not put off seeking help. Communicate early and often if you don't understand something. Be persistent. If a fellow student's or your instructor's explanation still does not make sense, politely ask for further help.

Communication with Others

As you participate in online discussion forums and chat, it is important to remember some basic things about online communication. Consider some traditional communication that you may have experienced:

- If you send a personal letter to someone it is private communication between you and the recipient — unless the recipient shares the letter with others
- If you put a notice on a bulletin board in the student union, it becomes publicly visible by anyone who visits the bulletin board.
- When you chat with a group of friends at the coffee shop, students sitting nearby can hear your conversation

The same concepts translate into the online environment:

- E-mail is private communication between the sender and receiver(s) – but can easily be made public by the receiver(s) if they share the message with others
- Discussion forums and blogs are public spaces.
- Chat is public and may involve multiple "talkers" and "listeners" as well as "eavesdroppers"

Maintain Professional Conduct Both in the Classroom and Online

The classroom is a professional environment where academic debate and learning take place. Your instructor will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and

beliefs of other students—both in the face-to-face classroom and online communication.

Students have the right and privilege to learn in the class, free from harassment and disruption.

Academic Accommodations

Students who require accommodations may request an academic adjustment as follows:

1. Read the Andrews University Disability Accommodation information at https://www.andrews.edu/services/sscenter/disability/
2. Download and fill in the disability form at http://www.andrews.edu/services/sscenter/disability/accommodationsreqform.pdf . Preferably type answers. To save a digital copy, 1) print to file and save or 2) print and scan. Email the completed form and disability documentation (if any) to success@andrews.edu or fax it to (269) 471-8407.
3. Email sdestudents@andrews.edu to inform the School of Distance Education that a disability has been reported to Student Success.

Commitment to Integrity

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class, and also integrity in your behavior in and out of the classroom.

Commitment to Excellence

You deserve a standing ovation based on your decision to enroll in, and effectively complete this course. Along with your pledge of "commitment to Integrity" you are expected to adhere to a "commitment to excellence." Andrews University has established high academic standards that will truly enhance your writing and communication skills across the disciplines and in diverse milieu with many discourse communities in the workplace.

Honesty

Using the work of another student or allowing work to be used by another student jeopardizes not only the teacher-student relationship but also the student's academic standing. Lessons may be discussed with other students, tutors may help to guide a student's work, and textbooks, encyclopedias and other resource materials may be used for additional assistance, but the actual response must be the student's own work. A student who gives information to another student to be used in a dishonest way is equally guilty of dishonesty.

Any violation of this policy will be taken before the Higher Education Academic and Curriculum Committee for appropriate punitive action.

Part 6: Bibliography

Discussion questions were developed in conjunction with the following sources:

- World Science Festival (www.worldsciencefestival.com/)
- The Veritas Forum (www.veritas.org/)

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