

Fort Valley State University
College of Arts and Sciences
Department of Mathematics & Computer Science
Fall Semester, 2017

MATH 1150-01: Calculus for Business and Economics (4 Credit Hours.)

Instructor: Dr. Samuel Cartwright

Email Address: cartwris@fvsu.edu

Meeting times: Class- 8:00—9:40 TTR

Office Hours: MW 8:00-10:00am & MTWTR 11:00-12:00pm & F 8:00-10:00am

Textbook: Calculus Volume 1, by Gilbert and Herman, <https://openstax.org/subjects/math>.

Course Description:

Students use the basic concepts of limits, continuity, differentiation, integration, maximization, minimization, and partial derivatives to model and solve real-world problems from the world of business and economics, the social sciences and life sciences. With the aid of a graphing calculator (TI-83 or equivalent) regression techniques and other data analytic measures are used to enhance students' understanding of mathematical ideas in algebraic, numerical and graphical modalities. Properties and uses of a library of elementary functions are explored.

Prerequisite: Passing MATH 1111, or MATH 1113 with a grade of C or above

Departmental Major Area Learning Outcomes:

This course addresses the following major area learning outcomes in mathematics:

I. Students will apply the concept of function together with the traditional computational techniques to solve real world problems (Course Learning Outcome II, Objectives 1 – 10)

V. Students will use graphing calculators and computers to perform numerical and symbolic computations, visualize data and mathematical objects, and solve mathematics problems. (Course Learning Outcome IV, Objectives 9, 10)

Course Learning Outcomes:

I. Students will describe and interpret real-world data sets using algebraic and geometric relationships

Objectives:

1. Translate real-world problem situations into mathematical models.
2. Use algebraic and geometric models to solve "Break-Even analysis" type problems.
3. Determine equations that model price-supply/demand.
4. Use graphical means to determine the equilibrium point, quantity and/or price.
5. Determine the rate of change of two linearly related variables
6. Determine the ratio (average rate of change) of non-linearly related variables
7. Use regression analysis to analyze numerical data and determine the line of "best fit."
8. Use regression models to interpolate between points in a data set and/or extrapolate points outside the data set.

II. Students will use the properties and characteristics of the collection of Elementary Functions to model and solve real life problems

Objectives:

1. Apply the concepts of elementary functions (their graphs and concepts of transformations) to mathematical models.
2. Determine maximum and minimum values using the properties and characteristics of quadratic functions.
3. Use exponential or logarithmic functions to model growth and decay (compute interest, salaries, etc.)

III. Students will apply techniques of limits and derivatives to solve real-world problems.

Objectives:

1. Use algebraic and graphical means to analyze and evaluate limits.
2. Use infinite limits and limits at infinity to describe the behavior of functions.
3. Determine whether a function is continuous.
4. Use the properties of continuity to solve inequalities and interpret problem situations.
5. Distinguish the average rate of change from instantaneous rate of change.
6. Use the four-step method to find the derivative of a function.
7. Determine if a function, f , is differentiable at $x = a$.
8. For a given differentiable function, determine the differential of x , dx .
9. Use the concepts of derivatives to determine marginal cost, average cost and the marginal average cost.
10. Using the properties, find the derivative of explicit and implicit functions.
11. Solve problems involving related rates, relative rate of change and percentage rate of change.

IV. Students will explore graphical properties using the first and second derivatives.

Objectives:

1. Find the absolute maximum and minimum values of a function.
2. Use l'Hopital's Rule for different indeterminate forms
3. Use graphing strategies to analyze rational and logarithmic functions.
4. Model average cost.
5. Use the four-step approach to solving optimization problems.

V. Students will find the anti-derivative and solve problems involving indefinite integrals.

1. Define the anti-derivative.
2. Find the indefinite integral of basic functions.
3. Perform integration by substitution.
4. Construct a slope field for a given differential equation.
5. Examine solutions of first-order differential equations used to model the limited or logistic growth sales and corporations.

Proposed Class Schedule:

<i>Weeks</i>	<i>Topic</i>
2 – 4	<i>Unit 1: Limits (and Introduction) Exam 1 TBA</i>
5 – 7	<i>Unit 2: The Derivative Exam 2 TBA</i>
8 – 11	<i>Unit 3: Rates and Extrema Exam 3 TBA</i>
14 -16	<i>Unit 4: Limits and Antiderivatives Test 4 TBA</i>
	<i>Comprehensive Final Exam TBA</i>

Grading Policies:

There will be assessments throughout the semester: homework, quizzes, semester exams and a comprehensive final. The final grade will be tabulated by weighted mean. These five categories that will constitute the course grade breakdown is listed below.

Grade Breakdown:

A: 90-100 B: 80-89 C: 70-79 D: 65-69 F: 64 and below

- Homework Average 20 %
- Quiz Average 20 %
- Exam Average 40 %
- Final 20%

Periodic Homework:

There will be periodic homework given throughout the semester. Homework will account for 20% of the final grade. Due homework will be collected at the beginning of class, graded and then returned during the next class meeting.

Quizzes:

There will be a series of pop-quizzes given during the semester. These quizzes will account for 20% of the final grade. Pop-quizzes will be given towards the end of class or at the beginning of class. Students are required to review notes from previous prior to coming to class.

Semester Exams:

There will be five semester exams given during the semester. These exams do include the midterm exam but not final exam. Each exam will be announced at least one week before its administration to allow students time to review and prepare.

Final Exam:

The final exam will be given on the last day of class. The final exam will account for 20% of the final grade. The final exam will be announced at least one week before its administration to allow students time to review and prepare.

Attendance: Attendance will be taken daily. In accordance with the FVSU Policy on attendance, your grade will be adversely affected by excessive unexcused absences. A point will be deducted from your overall class average for **each unexcused absence** in excess of the number of absences allowed according to the class policy. Also, tardiness will increase the number of unexcused absences; be advised that each three tardy arrivals will equate to one unexcused absence. A person is considered tardy

if he/she enters the class after the roll has been called. You are expected to remain in class during the entire class period.

FVSU's current policies and practices regarding plagiarism and academic dishonesty: Student Academic Dishonesty. Expulsion or suspension from the University or any lesser sanction may be imposed for the commission of offenses involving cheating or defraud on examinations. Examples of such offenses include giving assistance not authorized by the instructor in the preparation of an essay, laboratory report, examination or other assignment included in an academic course; taking or attempting to take, steal, or otherwise procure in an unauthorized manner, any material pertaining to the conduct of a class, including but not limited to examinations, laboratory experiments, and roll books; and plagiarizing.

Plagiarism. The appropriation of someone else's ideas, passages arguments, interpretation of events or factual information, in either hard copy or electronically, demonstrates a lack of integrity and is unacceptable at Fort Valley State University. Other examples of plagiarism include submitting someone else's work/assignment as one's own, submitting purchased papers as one's own, and submitting papers from the Internet as one's own. Students who are guilty of plagiarism are subject to disciplinary action. Acts of plagiarism must be reported to the Department Head, Dean, and Vice President for Academic Affairs and the Vice President for Student Affairs for appropriate action.

DISABILITY

FVSU is committed to the full inclusion of individuals with disabilities. To that end, the policies and procedures of FVSU ensure that a person with a documented disability is not, on the basis of that disability, denied full and equal access to academic programs, nor excluded from participation in co-curricular activities, or otherwise subjected to discrimination in such programs and activities. The policies for individuals with disabilities at FVSU are designed to ensure full compliance with all pertinent federal and state legislation, specifically to include Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. If a student requires disability accommodations, he/she **must** register with the Office of Disability Services. To register online please visit: <http://www.fvsu.edu/disability-services/>. You may also call (478) 822-1072, or visit the Royal C. Peabody Bldg. Room 125.

INVOLUNTARY WITHDRAWAL POLICY

If after the mid-semester period, the instructor verifies that a student has accumulated the following number of unexcused absences from the class, the student is subject to involuntary withdrawal from the class and will receive a final course grade of "WF."

- The student is absent 20 or more days for a class (including labs) that meet 4 days per week.
- The student is absent 15 or more days for a class that meets 3 days per week.
- The student is absent 10 or more days for a class meets 2 days per week.
- The student is absent 6 or more days for a class meets 1 day per week.

Telephone Usage: Refrain from bringing your cell phone to class. The use of headphones and cellular phones is not permitted in class – no text messaging, taking of photos of exams, or responding to calls during class time will be allowed.

Wearing of Hats/Scarves in Class: Men and women are asked to remove all hats, “doo rags”, scarves and hoods upon entering class. Repeated requests to remove such head gear, your cap, “do rag” hat or scarf will result in dismissal from class.

Administrative Withdrawals from Class (WF):

Students who fail to attend class for an extended period of time may be administratively withdrawn from class. A “WF” is recorded on the student’s transcript in this case. The policy for administratively withdrawing a student from this course is as follows:

- Unexcused absence for 6 consecutive class hours OR
- Unexcused absence for a total number of 8 class hours.

Note: For this course (a 3 CR course that meets twice a week), we define one day absence = 1.5 class hours absence.

Disclaimer: The above schedule and procedures are subject to change in the event of extenuating circumstances.

Unit 1 Limits - CALCULUS FOR BUS. & ECON. ...

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CALCULUS FOR BUS. & ECONOMICS Section 01 Fall 2017 CO

Unit 1 Limits

Lesson 1 A Preview of Calculus

Lesson 2 The Limit of a Function

Lesson 3 The Limit Laws

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Course Name | Content | Announcements | Assignments | Quizzes | Grades | Checklist | Attendance | Course Action

Class Progress | Communications

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Syllabus

Add time and location
Add a description

Link to Syllabus | Link to Syllabus | Edit | Add Edit

Professor Contact Information

Course Information

- Grading Standards & Criteria for CALCULUS FOR BUS. & ECONOMIC 6 Section 01 Fall 2017 CO
- Repeat to be Covered
- Generate Schedule for CALCULUS FOR BUS. & ECONOMIC 6 Section 01 Fall 2017 CO
- Student Services and Resources and Course Policies for CALCULUS FOR BUS. & ECONOMIC 6 Section 01 Fall 2017 CO
- Discussion
- Administrative Workshop

Workshop: Aug 15 2017 12:30 AM - From Aug 21 2017 11:30 AM

This is a required activity to verify your participation in the class. Class Roster for this class may be blocked until the activity has been completed.

You have until the 28th day of June to complete the quiz.

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FAIR VALLEY STATE UNIVERSITY CALCULUS FOR BUS. & ECONOMICS Section 01 Fall 2017 CO
The University of Applied Sciences

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Content Overview

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- Class Overview

Enroll

- 1 of 4 New Items
- 1 of 43 Items and One Alternate

Calendar

Thursday, December 14, 2017

Upcoming events

There are no events to display. Click to go to next.

Rules & Stats

Current Item

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Student Survey

Posted: Dec 22, 2017 12:28 PM

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