IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Fall 2025**	Instructor Name:	**Leobardo Rosales Jr**
Course Title & #:	**Math 170: Introductory Calculus with Applications**	Email:	**leobardo.rosales@imperial.edu**
CRN #:	**11448**	Webpage (optional):	**Canvas**
Classroom:	**2700-2722**	Office #:	**3900**
Class Dates:	**8/12-12/4**	Office Hours:	**Thursdays 4:50-5:50pm in 3900**
Class Days:	**TR**	Office Phone #:	
Class Times:	6:00pm-8:35pm	Emergency Contact:	**Silvia Murray 760-355-6201**
Units:	4	Class Format/Modality:	face-to-face

Course Description

This course presents a study of the techniques of calculus with emphasis placed on the application of these concepts to business and management related problems. Students take this course to prepare for courses for which calculus is recommended and/or required, as well as to study the ideas and concepts of advanced mathematics as applied to a modern computerized society. Topics covered include pre-calculus concepts, applications of derivatives and integrals of functions including polynomials, rational, exponential and logarithmic functions, differential equations, and functions of several variables.(C-ID: MATH 140) (CSU, UC credit limited. See a counselor.

Course Prerequisite(s) and/or Corequisite(s)

Successful completion of College Algebra or appropriate placement as defined by AB 705.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Demonstrate problem solving strategies by identifying an appropriate method to solve a given problem, correctly set up the problem, perform the appropriate analysis and computation, and share their interpretation of the conclusion or the outcome, using correct grammar or in an oral presentation. This outcome will be assessed through selected exercises on exams throughout the semester.

Course Objectives

1. Pre-calculus Review, including the real number line and order, absolute value and distance on the real number line, exponents and radicals, factoring polynomials, and fractions and rationalization.
2. Functions and their graphs, including exponential and logarithmic functions.
3. Limits and intuitive limit definition of derivative.
4. Increments, tangent lines, and rate of change.
5. Rules of differentiation including sum, product, quotient, and the chain rule.
6. Implicit differentiation.

7. Applications of differentiation such as marginal analysis, optimization, and curve sketching.
8. Antiderivatives, indefinite and definite integrals.
9. Multiple techniques of integration including substitution.
10. Area between curves.
11. Approximating definite integral as a sum.
12. Applications of integration in business and economics.
13. Functions of several variables, including partial derivatives and extrema of functions of two variables.

Textbooks & Other Resources or Links

Recommended textbook:

- Lial, Greenwell, Ritchey. 2022. *Calculus with Applications*. 12th Pearson. ISBN: 9780137342402.
- I will provide more information on the first day of class.

Course Requirements and Instructional Methods

This course will consist of lectures, quizzes, assignments, three tests, and a final.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a 16-week class. For this class that means approximately 12 hours of class and out-of-class time per week.

Course Grading Based on Course Objectives

There will usually be two quizzes every week and weekly assignments. Every fourth week there will be a test. In particular, Test 1 will be at the end of the fourth week. At the end of the class there will be a comprehensive Final. Your grade will be computed as follows:

- Assignments 30%
- Quizzes 10%
- 3 Tests 30%
- Final 30%

The following grading scale will be used: 90% and above is an A, 80% and above is a B, 70% and above is a C, and 60% and above is a D. Below 59% is an F.

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Accessibility Statement

Imperial Valley College is committed to providing an accessible learning experience for all students, regardless of course modality. Every effort has been made to ensure that this course complies with all state and federal accessibility regulations, including Section 508 of the Rehabilitation Act, the Americans with Disabilities Act (ADA), and Title 5 of the California Code of Regulations. However, if you encounter any content that is not

accessible, please contact your instructor or the area dean for assistance. If you have specific accommodations through ***DSPS***, contact them for additional assistance.
We are here to support you and ensure that you have equal access to all course materials.

Course Policies

1. The definition of an excused absence is one which is out of your immediate control. This can include but is not limited to illness, accident, and appointments set by official agencies. It does not include sleeping-in or forgetting about class.
2. If you do not attend any of the first **four** class meeting without an excused absence, then you will be dropped from the class. Send me an email if you must or have missed any of the first four class meetings before 8am of the following day.
3. Assignments will be due through Canvas. Send me an email if you cannot or did not submit an assignment due to an excused absence.
4. Quizzes will be due through Canvas. Send me an email if you cannot or did not take a quiz due to an excused absence.
5. If you miss a test due to an excused absence, then your score for that test will be replaced by your score for the next test, or in case of Test 3 by the score on your Final. Send me an email if you cannot or did not take a test due to an excused absence.
6. Attending the Final is absolutely mandatory. There is no make-up or replacement for the Final.
7. All general rules, including rules of etiquette, of Imperial Valley College apply.

The following are Academic Honesty policies.

1. You are encouraged to work closely on Assignments with other students.
2. You are encouraged to work closely on the Quizzes with other students.
3. Tests are closed notes, closed friends and enemies. Electronic devices may not be used without prior approval.
4. The Final is closed notes, closed friends and enemies. Electronic devices may not be used without prior approval.

The first violation of these rules shall result in zero points for the assessment in question. The second violation shall result in an automatic fail for the course. Particularly egregious violations may result in further disciplinary measures.

Other Course Information

To be updated

Financial Aid

Your Grades Matter! In order to continue to receive financial aid, you must meet the Satisfactory Academic Progress (SAP) requirement. Makings SAP means that you are maintaining a 2.0 GPA, you have successfully completed 67% of your coursework, and you will graduate on time. If you do not maintain SAP, you may lose your financial aid. If you have questions, please contact financial aid at finaid@imperial.edu.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit http://www.imperial.edu/studentresources or click the heart icon in Canvas.

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Anticipated Class Schedule/Calendar

Week	Lecture 1	Lecture 2
1 Aug 12,13	Introduction Lines	The Basic Functions
2 Aug 19,21	Algebra Review Test 0	Limits
3 Aug 26,28	Rates of Change and Derivatives	Derivative as a Function Simplification and Addition Rules
4 Sep 2,4	Exponential and Logarithm Functions Test 1 Practice Problems	Test 1
5 Sep 9,11	The Product and Quotient Rules Economics Functions	The Chain Rule Exponential Growth and Decay
6 Sep 16,18	Implicit Differentiation Limits Involving Infinity	Maximum and Minimums Determining Signs Through Factoring
7 Sep 23,26	Shapes of Graphs	Curve Sketching
8 Sep 30,Oct 2	Related Rates Test 2 Practice Problems	Test 2
9 Oct 7,9	Applications of Derivatives	Antiderivatives
10 Oct 14,16	Definite Integrals	The Fundamental Theorem of Calculus
11 Oct 21,23	The Substitution Rule	Integration by Parts
12 Oct 28,30	Riemann Sums Test 3 Practice Problems	Test 3
13 Nov 4,6	Areas Between Curves Improper Integrals	Applications of Integration
14 Nov 11,13	Functions of Several Variables	Partial Derivatives
15 Nov 18,21	Local Extremums	Absolute Extremums Over Level Curves
Thanksgiving Nov 25,28		
16 Dec 2,4	Final Practice Problems	Final

*****Subject to change without prior notice*****

Updated 11/2024