



Calculus I

MAT 151.02

Fall 2019

Number of Credits: 4

Office: JM 249

Days Class Meets: M/W

Contact Phone: 517-796-8472

Meeting Times: 7:00 – 8:50 am

Contact Email: priceallisonr@jccmi.edu

Location: GLH

Office Hours: see schedule on MML

Instructor: Allison Price

Online: MML ID – price99799

Course Description

First calculus course for business, mathematics, engineering and science students explores introductory plane analytic geometry, the derivative, the integral and their applications for algebraic, trigonometric, exponential and logarithmic functions.

Prerequisite(s)

MAT 141 or Precalculus equivalent

Course Goals

Insert an overview of the course direction, orientation or purpose. Description of student activities, the amount and relative difficulty of reading assignments, or the level of skill required of enrolling students are issues that can be included in this section.

Course Objectives

Students should be able to:

1. Demonstrate a basic understanding of:
 - a. Fundamental concepts of calculus; namely the limit, the derivative, and the integral.
 - b. Techniques of differentiation and integration, including manipulating algebraic, exponential, logarithmic, and trigonometric expressions as required by these techniques.
2. Critically analyze problems requiring application of the derivative and the integral, such as related rates and the area between curves.
3. Demonstrate facility with the appropriate technological tools, e.g., graphing calculator.
4. Demonstrate an awareness of the historical background specific to the course.

GENERAL EDUCATION OUTCOMES: The course goals and objectives incorporate specific General Education Outcomes (GEOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges and universities and reflect input from the professional communities we serve. GEOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs. The GEOs and course objectives addressed in this class include the following:

GEO3 - Demonstrate Computational Skills and Mathematical Reasoning

Textbook

- MAT 151 Course Pack
- MyMathLab Access
- Calculus; Early Transedentals, 3rd edition*

***Text Book Zero!** This text is available in a digital format and is included with your MyMathLab access and registration.

**Printed book is optional and available to rent or purchase through the JC Bookstore.*

Grading Policy and Scale

A 2.0 or "C" is a passing grade. Only courses with passing grades count toward graduation. Other colleges transfer in only courses with passing grades. Many financial aid sources, including most employers, require passing grades. Additionally, earning less than a 2.0 in a class results in being unable to participate in the next level of courses in a discipline that requires Math 151 as a prerequisite.

GPA	GRADE RANGE	GRADE CALCULATION
4.0	90-100%	In-Class Work / Worksheets: 20%
3.5	85-89%	Online MyMathLab Homework: 15%
3.0	80-84%	Project: 5%
2.5	75-79%	Chapter Exams: 40%
2.0	70-74%	Final Exam: 20%
1.5	65-69%	
1.0	60-64%	
0.5	55-59%	
0.0	0-54%	

Grading Procedure

IN-CLASS WORK, QUIZZES, & ACTIVITIES:

The single best way to learn math is to do math. This is where in-class work, quizzes, & activities fit into the process, as it is the regular practice that fosters learning of skills and concepts. Typically, there will be an item from every class session submitted for credit. Since coursework is all about practice and learning, “make explicit all work and reasoning” is the default setting in this course. You will receive no credit for solutions that appear to be copied from a solutions manual or online solution generator (e.g., Wolfram Alpha or Symbolab).

In-Class Worksheet Assignments are due during the following class period.

NOTE: Late work will not be accepted, so you must make arrangements for submitting your work by class time if absence is unavoidable. Links to assignments can be found on MyMathLab. Students are expected to print and complete any/all missing assignments by the next class period.

HOMEWORK:

- These assignments must be done outside of class time on a computer with internet access at MyMathLab (reachable through <http://www.mymathlab.com>). There are videos available on <http://www.youtube.com/priceallisonr> to help you navigate the MML system for completing homework assignments, using the help features, and more.
- Homework will be due every week, on the first class-day of the week. You can check MyMathLab for particular due dates.
- You have an unlimited number of tries to do the homework before you submit it (up until the due date). Thus, all of your homework should receive full credit, if you keep trying until you get a perfect score.

PROJECTS:

An important part of learning mathematics is learning how to communicate and collaborate on mathematical tasks. As a result, group projects will involve students working collaboratively on tasks that require time and effort outside of the class to complete, and may include in-class presentation of work and results. Project grades will be included in the in-class work category.

EXAMS:

Examinations are performances of student understanding; as such, they allow students to demonstrate mastery of the skills and concepts from the homework and lectures. Special requirements (e.g., technology use) and allowances (e.g., student-prepared notes sheets) will depend upon the particular topics and will be announced and discussed in class. The final exam is cumulative for the entire course.

Extra Credit Policy

There will be no opportunities for extra credit. Your grade calculation is based solely on your performance on course assignments listed above.

Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources.

Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization.

Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Absence Policy

Students are expected to attend all class meetings, arriving on time, and staying until the end. We do a variety of in-class activities which cannot be made up outside of class for any reason. Please remember that office hours are not a replacement for class time. If absence is unavoidable the student is responsible for doing the following:

1. Go to the "Course Materials" page (linked from our MyMathLab course). Click on the lecture notes for the section(s) missed and fill out the associated coursepack notes pages.
2. Scan and submit a single PDF file of any worksheets that were due for that class by the start of class time. I recommend free apps such as CamScanner or GeniusScan for mobile devices.
3. Download and print any new worksheets handed out in class, and complete them.
4. Email the instructor regarding your absence.

Incomplete Policy

A student may request an incomplete from the instructor, who will follow the JC Incomplete Policy. An incomplete may be granted only if the student can provide documentation that his or her work up to that point is sufficient in quality, but lacking in quantity, due to circumstances beyond the student's control. Furthermore, a written plan for making up the missing work within one semester must be completed by the student. Final determination of whether an incomplete will be given is the instructor's decision. Note: An "Incomplete" grade is not a way to avoid a failing one

Student Responsibilities & Classroom Expectations

The following are responsibilities and expectations that we can all share.

- We are each responsible for our work, our learning, and our behavior in class.
- This course will require consistent attendance and effort on your part. Mathematics is a subject that requires regular effort to understand and master.
- We are each respectful of everyone in the class (including ourselves).
- Please silence mobile devices, refrain from using any tobacco products, and come prepared (and on time) to ask/answer questions and work together.
- We are patient and persistent, even in the face of frustration (with others or ourselves).
- It is completely understandable and expected for students to be 'stumped' by problems at first. What separates successful students from unsuccessful students is almost entirely their willingness to be patient and persistent with the mathematics.
- We will communicate with each other promptly regarding problems or concerns.
- Regular, direct communication solves more problems than it causes. Please do not hesitate to contact me for any reason, and I will do the same.

Attendance Policy

In compliance with Federal Title IV funding requirements, as well as college initiatives, student attendance will be reported daily. Attendance records are available to students through JetStream. In addition, instructors may assign one of three non-transcripted participation/progress letters to each student during each of the three reporting periods (see below). Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

Participation/Progress Symbols

- H – The student is not doing acceptable work and needs **H**elp to be successful.
- Q – The student has not participated and the instructor believes they have unofficially withdrawn (**Q**uit). These students will be dropped/withdrawn from the class.
- V – The instructor **V**erifies that the student is participating and doing acceptable work.

School Closing Policy

We will adhere to Jackson College's school closing policy.

If the college is has not canceled school, our class will be held regardless of whether the high school has, or has not, canceled classes.

If weather conditions are too hazardous for you or a guardian to drive, please follow the Absence Policy.

Where to Get Help

At this level of mathematical sophistication, your fellow students and I are your best, most immediate resources for learning. Even so, there are many other sources to consider and investigate. Be creative, be resourceful, and share what you find -- we're all in this together!

I strongly suggest you start up a regular study group as soon as you are able with some of your classmates. At the very least, write down names and contact information for your peers and call on each other when needed. For more information on starting and maintaining a study group, check out the following link: <http://bit.ly/math-study-group>

Other sources of help:

- Office Hours: Meet with Allison during office hours.
- Jackson College's Center for Student Success (CSS): Free tutoring in 138 Bert Walker Hall is available most weekdays (<http://www.jccmi.edu/Success/Tutor/>). Remember, finding tutoring for upper-level mathematics often takes time and patience.
- Online Help & Computation Sites: There are several online sources for help, some of which are high-quality and easy to use, including: www.Calculus-Help.com, www.wolframalpha.com, www.mathway.com, & www.symbolab.com. I recommend these for checking your homework.

[Accommodations for students with disabilities](#)

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester.

Important Dates:

DATE	EVENT
SEPT. 3	CLASSES BEGIN
SEPT. 17	NO CLASSES – FACULTY AND STAFF IN-SERVICE DAY
OCT. 4	PATHWAYS SHOWCASES
NOV. 27 – DEC. 1	THANKSGIVING BREAK
DEC. 19	END OF FA19 SEMESTER
DEC. 21	GRADES DUE

Calendar

TENTATIVE TOPIC LIST: A brief (and tentative) list of the content covered in the course.

- Appendix A (Algebra Review) - (Reviewed as needed via MyMathLabb)
- Chapter 1 (Functions): §1.1 - 1.4 - (Reviewed as needed via MyMathLab)
- Chapter 2 (Limits): §2.1 - 2.7 – Weeks 1-3
- Chapter 3 (Derivatives): §3.1 - 3.11 – Weeks 4-8
- Chapter 4 (Applications of the Derivative): §4.1 - 4.9 – Weeks 9-11
- Chapter 5 (Integration): §5.1 - 5.5 – Weeks 12-15

**Calendar dates are an approximation and are subject to change.*

WEEK #	DATE	SECTION	TOPIC
1	9/4	2.1	The Idea of Limits
2	9/9	2.2	Definitions of Limits
	9/11	2.3	Techniques for Computing Limits
		2.4	Infinite Limits
3	9/16	2.5	Limits at Infinity
	9/18	2.6	Continuity
		Review	Review
4	9/23	Exam 1	Exam 1
	9/25	3.1	Introducing the Derivative
5	9/30	3.2	The Derivative as a Function

WEEK #	DATE	SECTION	TOPIC
	10/2	3.3 3.4	Rules for Differentiation The Product and Quotient Rules
6	10/7 10/9	3.5 3.6 3.7	Derivatives of Trigonometric Functions Derivatives as Rates of Change The Chain Rule
7	10/14 10/16	3.8 3.9 3.10	Implicit Differentiation Derivatives of Logarithmic and Exponential Functions Derivatives of Inverse Trigonometric Functions
8	10/21 10/23	Review Exam 2	Review Exam 2
9	10/28 10/30	3.11 4.1	Related Rates Maxima and Minima
10	11/4 11/6	4.2 4.3 4.4	The Mean Value Theorem What Derivatives Tell Us Graphing Functions
11	11/11 11/13	4.5 4.6 Review	Optimization Problems Linear Approximation and Differentials Review
12	11/18 11/20	Exam 3 4.9 5.5	Exam 3 Antiderivatives Substitution Rule for Indefinite Integrals
13	11/25	5.1	Approximating Area Under Curves
14	12/2 12/4	5.2 5.3 5.5	Definite Integrals The Fundamental Theorem of Calculus Substitution Rule for Definite Integrals
15	12/9 12/11	5.4 Review Exam 4	Working with Integrals Review Exam 4
16	12/16 12/18	Review Final	Review Final