

# MATH 151.01: CALCULUS I

## COURSE SYLLABUS (WINTER 2018)

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**CLASS SESSIONS:** Tuesday, Thursday 8:30-10:30

**OFFICE:** 247 James McDivitt Hall

**OFFICE HOURS:** <http://bit.ly/ScheduleAJT>

**ONLINE:** MyMathLab Course Code = **See Handout**

**REQUIRED MATERIALS:** MAT 151 Coursepack, MyMathLab Student Access, LARGE 3-ring binder, LARGE eraser, pencils, highlighters, TI-84 Calculator. **Please note: Access to a computer with Internet is required for this section of Math 151.** We will be doing homework, projects, and possibly some quizzes online, outside of class. School computers can be used to satisfy these requirements.

**OPTIONAL TEXTBOOK:** *Calculus: Early Transcendental Functions*, 2nd Edition (Briggs, Cochran, Gillet); ISBN: 0-321-94734-7 – **Textbook Zero Note:** This textbook is available online within MyMathLab.

### **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. Graphing calculator required.

### **PREREQUISITE:**

An earned grade of  $\geq 2.0$  in JC's MAT 141, course placement, or instructor approval.

### **CORE 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.

**MATH 151 GENERAL EDUCATION OUTCOMES:** GEO 3 – Demonstrate Computational Skills and Mathematical Reasoning

## **COURSE REQUIREMENTS**

### **IN-CLASS WORK, QUIZZES, & ACTIVITIES:**

Typically, there will be an item from every class session submitted for credit. These may be individual or group, and with or without notes. In addition, there may be activities that will reinforce our work in class and include technological applications.

### **HOMEWORK:**

The single best way to *learn* math is to *do* math. This is where homework fits into the process, as it is the regular practice that fosters learning of skills and concepts. *Graded* (with partial credit) homework sets (usually assigned, at-home worksheets) will be assigned regularly, and will consist of similar book-sourced problems and instructor-designed exercises. Since homework 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). Online homework, through the MyMathLab system, will also be part of your grade, and these assignments will occur frequently with announced due dates.

**NOTE: Late homework will not be accepted**, so you must make arrangements for submitting your work by class time if absence is unavoidable.

### **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.

### **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.

<u><b>Grading Scale:</b></u>	
90 -100%	4.0
85 - 89%	3.5
80 - 84%	3.0
75 - 79%	2.5
70 - 74%	2.0
65 - 69%	1.5
60 - 64%	1.0
55 - 59%	0.5
0 - 54%	0.0

<u><b>Grade Calculation:</b></u>
In-Class Work: 20%
Online MyMathLab Homework: 15%
Chapter Exams: 40%
Cumulative Final Examination: 25%

## **COURSE POLICIES**

### **ACADEMIC HONESTY POLICY:**

You are *encouraged* to talk to each other, but **all your submitted work must be your own**. In other words, “group-work” is a great way to learn material, but anything you submit for a grade must be done by you - reflecting your own thought processes, not those of someone else. If I suspect you of academic dishonesty, I will follow JC's Academic Honesty Policy and take appropriate action up to and including assigning a **failing grade** for the paper, project, report, exam, or the course itself (as deemed appropriate).

### **INCOMPLETE GRADE POLICY:**

(Excerpt from JC Policy) "A student may request an incomplete from the instructor. The incomplete will 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." The policy can be seen here: <https://www.jccmi.edu/policies/>

**Note:** Requesting an “Incomplete” grade is not a valid strategy for avoiding failure

### **EXTRA CREDIT:**

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

**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 involving other students and group participation and therefore 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:

1. Go to the “Course Notes and Handouts” page on MyMathLab. Click on the lecture notes for the section(s) missed and filling out the associated coursepack notes pages.
2. Scanning and submitting a single PDF file of the worksheets that were due for that class by the start of class time. I recommend free phone apps such as *CamScanner* or *GeniusScan* for this.
3. Downloading and printing the new worksheets that were passed out in class which are due for the next class.
4. Emailing the instructor regarding your absence.

## **ADDITIONAL INFORMATION**

### **CLASSROOM EXPECTATIONS:**

*The following are 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.

### **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 Alana during office hours.
- *Jackson College's Center for Student Success (CSS):* Free tutoring in *Federer Room C* of the Potter Center 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](http://www.Calculus-Help.com), [www.wolframalpha.com](http://www.wolframalpha.com), [www.mathway.com](http://www.mathway.com), & [www.symbolab.com](http://www.symbolab.com). I recommend these for *checking* your homework.

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

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