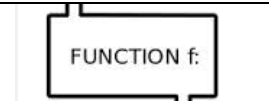

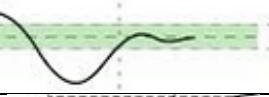
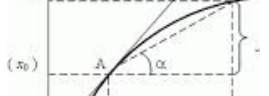



<b><i>MAT 181 Calculus I</i></b> <b><i>Course Syllabus</i></b> <b><i>Siena Heights University</i></b>	
<b>Instructor:</b>	<b>Dr. Jeff Kallenbach</b>
<b>Phone:</b>	<b>264-7641</b>
<b>Office:</b>	<b>SC29B</b>
<b>Hrs:</b>	<b>M-F 11:00-12:00</b>
<b>Course Meets:</b>	<b>M-F 12:00-12:50 Science Building Rm 23</b>
<b>Prerequisites:</b>	<b>Successful completion of Pre-Calculus</b>
<b>Text:</b>	<b><i>Calculus &amp; Analytic Geometry, early Transcendentals</i> by James Stewart, 7<sup>th</sup> Edition, Thompson, 2010; <a href="http://www.stewartcalculus.com">www.stewartcalculus.com</a></b>
<b>Handheld:</b>	<b>A TI-NSpire CAS or TI CX CAS will be the handheld model of choice.</b>
<b>Course Management:</b>	<b><a href="#">Engrade</a> will be used for this course. Other resources of use may be found at <a href="#">my web site</a>.</b>

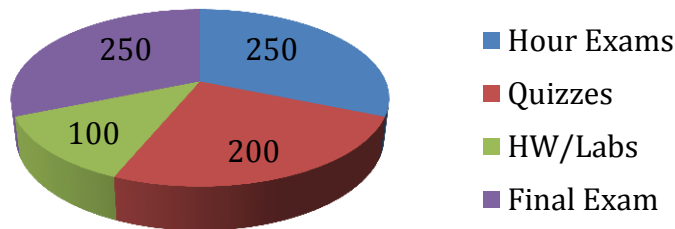
**The instructor reserves the right to make changes to this syllabus without notice**

**Course Objectives:** We begin with an overview of functions that most students will have learned in their pre-calculus course (function representations, domains and ranges, the basics of graphs, categories of functions like polynomials, trigonometric functions, exponentials and logarithms). We then discuss the concept of a limit of a function, both intuitive and formal epsilon-delta definitions, and develop the idea through our catalog of functions from the first unit. We then move to continuity with formal definitions and theorems. Next we cover derivatives of continuous functions, beginning with the definition in terms of limits, and follow with the rules, theorems, and shortcuts with all of our functions. Applications such as velocity/acceleration, exponential growth, and related rates are treated at the end of this unit. We wrap up Calc I with the development of the concept of area, the definition of anti-derivative, the Fundamental Theorem, the Mean Value Theorem, and integration by substitution.

### Topics Covered

Functions	
Graphs	
Limits	
Derivatives	
Applications	

## Grades



Grading Scale	
A	[90, +∞)
B	[80,90)
C	[70,80)
D	[60,70)
E	(-∞, 60)

### Method of Evaluation

- **Hour Exams** – 4 or 5 of them, evenly space during the semester. 50 minutes in length. Together will constitute 250 of your 800 grade points.
- **Homework quizzes** – A few times per week, we will have a quiz consisting of 2-3 problems directly from uncollected homework problems from the sections currently under discussion. All homework quizzes together will count for  $\frac{1}{4}$  of your grade. No makeup quizzes will be given. To allow for the bad day/missed class, the two lowest HW quiz scores will be dropped.
- **Homework/TI labs** – From time to time during the semester I will assign some homework to be collected, and we will have a computer assignment/lab on the TI Calculator. Each collected assignment will be graded on a scale of 1-10. Your percentage on these homework & labs together will make up the 100 points of your grade.

#### **Standards for graded homework:**

- Work should be neat, organized, and legible – one column only
  - Use filler paper or remove ragged edges
  - Write on one side of paper only
  - Use pencil and eraser (not pen)
  - Number each problem
  - Show work so that I can follow your steps and so that you don't need to recreate your work when studying homework for the exam
  - Leave space for my comments
  - **STAPLE** your papers together
- **Final Exam** – 250 points, comprehensive, time & location TBA

**Practice Problems:** Practice problems will be assigned for each section that we cover. They will be listed on board at the end of class, and on [Engrade](#) calendar entry for that date. I'll also try to keep a master problem list for the course up to date on [Engrade](#), working a couple weeks ahead if you

would like to try to keep up on things. In general these problems will NOT be collected, but will be covered on the homework quizzes we have frequently (see above).

### **Late Work:**

Collected assignments are to be submitted at the beginning of the class session on the due date (unless otherwise specified). No late assignments will be accepted unless prior arrangements are made with the instructor.

### **Course Methods:**

- The focus of this class is on learning through daily activities. In this pursuit, we'll use technology: calculators (e.g., TI-Nspire) to enhance your understanding of the concepts being developed. **We will review and discuss daily assignments** to provide instant and interactive feedback on your learning. Students should keep a notebook of worked examples and written homework assignments. Students are expected to be active participants in class discussions. *Successful completion of this course requires a substantial amount of out of class study (About 2 hours outside of class for every hour in class).* Students are encouraged to form study groups and visit the Math Lab (Science 26). **Homework is assigned for every section, and you should plan to complete it once that section is covered in class unless otherwise stated. We will be discussing the assignment at the beginning of the next class, before proceeding to the next topic.** Mainly odd-numbered problems will be assigned, so you will be able to check to see if you've gotten to the correct answer.

### **On Getting Through the Course**

- Come to class prepared: review notes, read book, do problems.
- You should not miss class if at all possible. However, if you must, a pdf of the notes for the missed class will usually be posted in Engrade. Be sure to make use of those postings when needed.
- **USE YOUR GRAPHING CALCULATOR** whenever possible (even if not assigned). Graphs & Numerical tables provide concrete visual representations of important concepts, patterns & abstract relationships. Technology gives you the freedom to explore realistic problems & examples, and to spend your time learning concepts, w/o getting bogged down by difficult and/or tedious hand calculations.
- **Ask** questions **DURING** class: if you're confused, seek clarification. One of the things I get paid for is answering your questions.
- **Answer** questions **DURING** class. Lead group discussions and help others: tell us what you've learned and let us learn from you.
- Study in groups as **SOON** after class as possible: help -- but don't copy from each other ...we call that plagiarism and the results of that are undesirable.

### **Learning Outcomes**

The **Mathematics Department** has identified the following five learning outcomes to be achieved by majors and minors in its program.

1. Students will read and understand mathematics, differentiating between correct and incorrect mathematical reasoning. (Reading, listening, following my discussions).
2. Students will effectively communicate mathematics to others, both in writing and speaking. (Presentations and written work)
3. Students will demonstrate abilities to work independently and in-groups to develop mathematical models using appropriate technologies.
4. Students will demonstrate mastery of the content of the course. (Quizzes and exams)