

**Syllabus**  
**MTH 1125 (TGAB) - Calculus I**  
**Fall 2018**

**Time:** MTWF 1:00 pm -1:50 pm  
**Place:** MSCX 130  
**Instructor:** Pat Rossi  
**Office:** McCall 227C; (334)670-3588; prossi@troy.edu  
**Office Hours:** MWF 10:00 - 11:50  
T 9:00 - 12:50  
Or By Appointment

**Text:** Calculus with Analytic Geometry, 11<sup>th</sup> Edition, by Larson and Edwards Brooks/Cole – Cengage Learning), plus a WebAssign License (Access Code).

**Textbook and WebAssign Options:**

There are two versions of the text: “*Single Variable*” and “*Full Textbook*.”

The “*Single Variable*” version of the text is identical to the first two-thirds of the “*Full Textbook*.” (For example, page 79 in the “*Single Variable*” version is the same as page 79 in the “*Full Textbook*,” and page 150 in the “*Single Variable*” version is the same as page 150 in the “*Full Textbook*,” etc.) The difference between the two is that the “*Full Textbook*” contains material that only those students who take Calculus III need to have. So if your course of study does not include Calculus III and you have no intention of taking Calculus III for your own enjoyment, then you don’t need the “*Full Textbook*” – the “*Single Variable*” version has everything that you need. (AND the “*Single Variable*” version is less expensive!)

**I repeat:** If your course of study does not include Calculus III and you have no intention of taking Calculus III for your own enjoyment, then you don’t need the “*Full Textbook*” – the “*Single Variable*” version has everything that you need.

**On the other hand:** If your course of study DOES include Calculus III (or if you’re seriously considering taking Calculus III for you own enrichment)), then you will need to buy the “*Full Textbook*.”

**Text Format:** Each version of the text is available in three formats:

**Hardback:** The traditional hardcover textbook

**Loose-leaf:** The pages of the text are not bound, and each page has three holes so that the pages can be kept in a three-ring binder

**ebook:** The text is in electronic format

**WebAssign Format:** WebAssign (an online homework program) is available in two formats:

**Multi-Term Access Code:** This enables you to use WebAssign for as long as you are enrolled in either Calculus I, II, or III. (Regardless of how many times you may have to take Calculus I, II, or III.)

**One-Term Access Code:** This enables you to use WebAssign for a single semester. So if you only take one semester of Calculus, the One-Term Access Code will be sufficient. At the end of the semester, the One-Term Access Code will expire.

**Textbook & WebAssign (Package) Options:**

The following options are offered at Troy University's Barnes & Noble Bookstore:

**Single-variable textbook formats and ISBNs (Calculus I and II only):**

ISBN 9781337275361: Hardback book (for MTH 1125/1126 only) This option does NOT come with a WebAssign License/Access Code

ISBN 9781337811064: Loose-leaf book (for MTH 1125/1126 only) This option DOES come with a Multi-Term WebAssign License/Access Code

**Full textbook formats and ISBNs (Calculus I, II, and III)**

ISBN 9781337275347: Hardback book (for MTH 1125/1126/2227) This option does NOT come with a WebAssign License/Access Code

ISBN 9781337604741: Loose-leaf book (for MTH 1125/1126/2227) This option DOES come with a Multi-Term WebAssign License/Access Code

ISBN 9781337652650: ebook - "Full Textbook" version (for MTH 1125/1126/2227) This option DOES come with a Multi-Term WebAssign License/Access Code

**One-semester/term WebAssign with ebook:**

ISBN 9781337621205

## Calculation of Final Average

Test Average	65%
Final Exam	30%
Homework Assignments	5%

## Assignment of Final Grade

Final Average	Grade
90-100	A
80-89	B
70-79	C
60-69	D
0 -59	F

**NOTE: Final Grades Cannot be Given Out Over The Phone**

## Tests

Tests will cover material introduced in class up to and including the class that is two days before the test. Tests will be returned to the students (to keep) after they have been graded, but will remain the permanent property of the Instructor even after they are returned to the students.

Test	Date
Test #1	Sept 14
Test #2	Oct 12
Test #3	Nov 2
Test #4	Nov 30

**Final Exam:** Our Final Exam will be on **Friday, Dec. 7, from 5 pm - 7:00 pm**. Students will not be allowed to take the Final Exam early. Exceptions WILL NOT be made for those who have made travel arrangements (e.g. purchased an airplane ticket) for a date on, or before, the Final Exam.

### Makeup Policy:

There will be no make-up tests given during the semester. Make-up tests will be given on Wednesday, December 5 at 10 am for those students who missed a test during the course. No student will be allowed to make up more than one missed test. Notice that these make-up tests are only given to students who missed a test (for whatever reason) during the course. This implies that you may choose to miss a test if you feel that you are not ready. Don't do this indiscriminately - You may need to miss a test later on in the course, due to extreme illness, etc. Nevertheless, the option remains. One catch - once you enter the room to take an exam, you must take the exam. You will not be allowed to enter the room, look at the exam, and then decide whether or not you want to take the exam.

## **Incomplete Policy**

A grade of “I” (incomplete) may be given in the case of illness or emergency situations occurring towards the end of the semester, which make it impossible for the student to complete all course work by the end of the semester in such a way that the student’s performance accurately reflects his or her mastery of the course. Such grades are given very sparingly, and only in a case of genuine hardship. Time limits for removing an incomplete can be found in the Undergraduate Bulletin. To receive a grade of “Incomplete,” a grade of “Incomplete” must be requested by the student and approved by the instructor. (i.e. The student must initiate the process.) See the undergraduate catalog for complete information.

**Homework Assignments:** Graded Homework Assignments will be from the <http://www.webassign.net> website. Each assignment, along with its due date, will be announced in class as well as through your Troy e-mail account (So check your e-mail regularly and keep your mailboxes cleaned out!). Instructions for registering for WebAssign will be set to you via email you Troy e-mail account.

## **Attendance Policy:**

More than six (6) absences (other than University Excused absences) will result in a grade of FA (Failure due to excessive absences).

## **AMERICANS WITH DISABILITIES ACT:**

Troy University supports Section 504 of the Rehabilitation Act of 1973 and the Americans With Disabilities Act of 1990, which insure that postsecondary students with disabilities have equal access to all academic programs; physical access to all buildings, facilities and events; and are not discriminated against on the basis of disability. Eligible students, with appropriate documentation, will be provided equal opportunity to demonstrate their academic skills and potential through the provision of academic adaptations and reasonable accommodations. Further information, including appropriate contact information, can be found at the link for Troy University’s Office of Human Resources at:

<http://www.troy.edu/humanresources/ADAPolicy2003.htm>

## **Cell Phones and Other Electronic Devices**

Use of any electronic device (cell phone, tablet, laptop, etc.) by students in the instructional environment is prohibited unless explicitly approved on a case-by-case basis by the instructor of record or by the Office of Disability Services in collaboration with the instructor. Cell phones and other communication devices may be used for emergencies, however, but sending or receiving non-emergency messages during a class meeting is forbidden by the University. Use of a communication device to violate the Troy University “Standards of Conduct” will result in appropriate disciplinary action (See pp. 42-52 of the Oracle.)

In order to receive emergency messages from the University or family members, devices must be in a vibration, or other unobtrusive mode. Students receiving calls that they believe to be emergency calls must answer quietly without disturbing the teaching environment. If the call is an emergency, they must move unobtrusively and quietly from the instructional area and notify the instructor as soon as reasonably possible. Students who are expecting an emergency call should inform the instructor before the start of the instructional period.

**Other Matters:** Behavior such as wearing headphones in class, sleeping in class, exiting class during a lecture, talking to classmates during the lecture, reading a newspaper during class time, reading a book other than the assigned text for the course during class time, or doing work not assigned in this class during class time will not be tolerated. (If you are sick, or need to use the restroom, raise your hand and ask to be excused.) Also, I do not “grade” students’ tests immediately after the test is turned in – please don’t ask me to grade yours. Also, I don’t show the solutions to problems on a test to students immediately after they turn in their test – please don’t ask me. The solutions are posted on my website within a reasonable amount of time after the test is given, so there is no need for me to work the problems out at the request of each person who asks.

### **Academic Honesty**

Academic misconduct shall be handled according to the guidelines listed in the *Oracle*.

### **Study and Preparation:**

To increase your chances for success, do the assigned homework when it's assigned and ask questions either in class or during office hours on exercises that you find difficult. Most of the homework that is assigned will not be collected and/or graded. Nevertheless, you are still expected to do the assignments - and to a great extent, your conscientiousness in this matter will determine your success in the course.

I highly recommend the services of the *Natural Science Center*. It is located in Room 126 of Eldridge Hall and the phone number is 670-3139. The *Center* has tutors available in Biology, Chemistry, Mathematics, and Physics. I encourage you to visit the *Center* early in the semester so that you can become familiar with their services. Through their tutors, they provide an invaluable service and many of my former students have benefitted greatly from their help.

For your benefit, **practice tests and other material are available on my website**. These practice tests are a good way to prepare for the tests, and you are encouraged to use them. Consider them to be a “tune up” for tests, rather than a substitute for doing the assigned homework. To get to my website:

1. My website address is: <http://www.pat-rossi.com>
2. On the left hand side, click “Academic Links for Troy University Students”
3. Under “Course Links” click “MTH 1125”

**Letters of Recommendation:** I will gladly write letters of recommendation for students who receive an “A” in the course, who have reasonably good attendance, who do not cause discipline problems, and who do not text/use cell phones, etc. in my class; provided that the letters are for graduate/professional school and/or employment in a field related to your academic major. Letters of recommendation for employment must be for positions that will be filled in the near future. (e.g., don’t ask me to write a letter of recommendation for a teaching position, when your date of graduation is over a year away.) Such letters are *confidential*. Also, if you want me to write a letter of recommendation, you must ask me *personally*. (i.e., do not put a note in my mailbox asking me for a letter of recommendation.) Oh – one more thing – the better I know you, the more I will be able to say about you in my letters of recommendation. *Therefore, it is to your advantage to come and see me, and ask for help during office hours.* This is how I get to know my students. Remember – I do not write letters of recommendation for students who have texted in my class. If I see you texting, etc. in my class, I put your name on my “Text List” in my office. When someone asks me for a letter of recommendation, I check my list. If your name is on my “Text List,” I will not write a letter in your behalf. **SO DON’T TEXT IN MY CLASS!!!**

**Important Dates** (Which Are Not Listed Elsewhere in the Syllabus)

Aug 20	Last Day to ADD a Course
Aug 20	Last Day to withdraw from the university without financial penalty (cannot be done on <i>Student Planning</i> )
Aug 20	Last Day to Drop a Course without financial penalty
Sept 3	Holiday (Labor Day) – no class
Oct 8	Last Day to Remove an Incomplete from Previous Term
Oct 22	Last Day to Drop a Course (may not be done on <i>Student Planning</i> )
Oct 22	Last Day to Withdraw (may not be done on <i>Student Planning</i> )
Nov 12	Holiday (Veterans’ Day) – no class
Nov 16	Last Day to file <b><i>Intent to Graduate</i></b> for Spring 2017 Semester
Nov 19-23	Fall Break/Holidays - Thanksgiving
Dec 4	Last day of classes
Dec 5	Dead Day

**Course Description:** Limits, continuity, the derivative, applications of the derivative, Rolle’s Theorem, Mean Value Theorem, maximum and minimum problems, the differential, anti-differentiation and the definite integral, the application of the definite integral to area problems. *Prerequisite: MTH 1114 with a grade of C or better, or advanced placement.*

**HOMEWORK EXERCISES**

**Set #1**

- p. 59            5-9 odds (use a calculator to *estimate* the limit - for #9, the calculator must be in ***radian mode.***)
- 21-27 odds (*estimate* the limit visually, based on appearance of the graph of  $f(x)$  )
- 45-55 odds (Do these the way that we did limits in class)
- p. 71            5-21 odds (Do these the way that we did limits in class)
- 41 - 45 odds (Do these the way that we did limits in class, and don’t worry about finding the “simpler function.”)
- 47-61 odds

**Set #2**

p. 83 11-23 odds (Do these the way that we did limits in class) (the answer to #15 is negative infinity)

**Set #3**

p. 92 1-9 odds  
p. 92 17-27 every other odd  
p. 92 33, 35 Find and graph any vertical asymptotes  
p. 92 37-45 every other odd

**Set #4**

p. 92 19-25 every other odd

**Set #5**

p. 206 17-35 every other odd  
p. 215 9-25 Every other odd (Graph asymptotes only. Don't worry about graphing intercepts, relative extrema, or points of inflection.)

**Set #6**

p. 206 5-15 odds; 19-33 every other odd  
p. 215 11-27 Every other odd (Graph asymptotes only. Don't worry about graphing intercepts, relative extrema, or points of inflection.)

**Properties of Limits****Set #7**

p. 71 37, 39 For each part, write down the property of limits that we use to do the problem. (e.g., "The limit of a sum equals the sum of the limits.")

**Continuity****Set #8**

p. 83 31, 33 (Look at the graph to determine the answer)  
39-51 odds (don't worry about "removable discontinuities")

## Derivatives

### Set #9

- p. 107      5 (do this visually, using the graphs)  
9-27 odds (Compute these using the *definition of derivative* (i.e. using the *limiting process*))  
29-35 odds (Do Part (a) only)

### Set # 10

- p. 118      5 (do this visually, using the graph), 7-59 every other odd (using the rules of derivatives)

### Set #11

- p. 118      9-57 every other odd (using the rules of derivatives)

### Set #12

- p. 129      5-55 every other odd , 9, 13, 1725, 29, 33, 39, 43, 47, 51

### Set #13

- p. 129      7-53 every other odd; 73, 75

## Trig Limits

### Set #14

- p. 71      63-73 odds

### Set #15

**Function Composition Handout** (from my website)

### Set #16

**Chain Rule Handout** (from my website)

### Set #17

- p. 140      11-31 every other odd; 35-53 every other odd

### Set #18

- p. 140      9-33 every other odd, 47-51 every other odd



**Set #19**

**Liebniz Chain Rule Handout** (from my website)

**Set #20**

p. 149      5-17 every other odd; 25, 29

**Set #21**

p. 149      7-19 every other odd; 27, 31

**Set #22**

p. 157      11- 29 odds

**Set #23**

p. 187      5-37 every other odd - skip #33

**Set #24**

p. 187      7-35 every other odd

**Higher Order Derivatives**

**Set #25**

p. 129      91-103 odds

**Curve Sketching**

**Set #26**

p. 196      3-13 every other odd; 17-25 every other odd; 53, 55

**Set #27**

p. 196      5-11 every other odd; 19-27 every other odd

**Set # 28**

p. 206      17-35 odds

**Set #29**

p. 215      9-33 every other odd; 5, 7

**Set #30**

p. 215      11-31 every other odd

**Abs Extrema**

**Set #31**

p. 171      23-31 odds

**Set #32**

**Applied Max/Min Handout** (from my website)

**Anti-derivatives**

**Set #33**

**Basic Anti-Derivatives - Part #1** (Handout from my Website)

**Set #34**

**Basic Anti-Derivatives - Part #2** (Handout from my Website)

**Set #35**

p. 255      11, 13, 15-35 every other odd

**Set #36**

p. 255      13-33 every other odd

**Differentials & Substitution**

**Set #37**

p. 240      19-27 odds

**Set #38**

**Elementary U-Substitution** (Handout from my Website)

**Set #39**

p. 305      5, 7, 9-29 every other odd; 39, 43

**Set #40**

p. 305      11-27 every other odd; 41, 45

**Summation Notation****Set #41**

p. 267      5-15 odds

**Set #42**

p. 292      9-23 odds; 29, 35

**Fundamental Theorem - Part #1****Set #43**

p. 292      75-85 odds

**Set #44**

p. 305      21, 25, 41, 59, 61-67 odds

**Set #45**

p. 277      13, 17, 21, 25, 33, 37, 41 odds

**Set #46**

p. 277      15, 19, 23, 27, 31, 35, 39, 43

**Set #47****Properties of Natural Logs Handout (from my website)****Set #48**

p. 321      21-33 every other odd; 43-63 every other odd

**Set #49**

p. 321      23-35 every other odd; 45-61 every other odd

## Set #50

p. 330          5-25 every other odd; 33, 37, 41

## Set #51

p. 330          7-23 every other odd; 35, 39

### **COURSE OBJECTIVES**

Upon completion of this course, the student should be able to:

1. Find the limit of functions.
2. Determine intervals of continuity of a function.
3. Perform the operation of differentiation on algebraic, trigonometric, exponential, and logarithmic functions.
4. Apply the concepts of the first and second derivatives to curve sketching.
5. Make applications of the derivative in maxima and minima problems.
6. Use differentials to make approximations and approximation errors.
7. Perform the operation of anti-differentiation.
8. Apply properties of the definite integral.
9. Appreciate and use vocabulary and symbols of mathematics as the basic language of science.
10. Recognize the relationship of mathematics to the emerging technological world.
11. Apply Rolle's Theorem and the Mean Value Theorem.

## **University Firearms Policy**

Regardless and in spite of recent changes in Alabama law related to the matter, it remains the policy of Troy University that no person other than authorized law enforcement officers shall be permitted to bring any firearm onto any campus, teaching, or service support property; owned or leased by the University, no matter whether they hold a permit to do so, or not. It has been determined that it is the University's prerogative to establish its policy related to this matter and therefore the current University policy on firearms remains in effect.

### **Questions on Grading:**

The instructor will entertain questions regarding grading of tests and assignments in his office, during office hours only. No questions regarding grading will be addressed during class.

**This syllabus represents a tentative plan for the instruction in this course. The instructor reserves the right to amend this syllabus if, in his opinion, such action will enhance and/or optimize learning. Any changes in this syllabus will be announced in class and/or on the instructor's website. This syllabus is a best possible assessment of the course aspirations, assignments and requirements at the time it was developed for this semester.**