Course Syllabus
MTH 125, Calculus I

1. INSTRUCTOR INFORMATION

Name: **Adrian Seaver**

Office: **No On-Site Office (call / email for appointment in Math Lab or alternate location)**

Remind App: Text **@sp18mth125** to the number **81010** or go online at **remind.com/join/mth125seav**
(students that send their major, favorite movie and food before next week gets +2 on 1st Test)

E-mail address: **adrian.seaver@calhoun.edu**

Phone number: **(256) 829-8657**

Office hours: **Available before/after class or by appointment during the week (text / call / email)**

Website: Web access and activities will be managed through **Blackboard**

2. COURSE DETAIL

a. Course Name, Number, and Hours: **MTH 125 Calculus I - 4 Semester Credit Hours**

b. Section and Reference / Synonym: **Section 400, CRN # 5289**

c. Class meeting time: **Tues / Thurs @ 5:00pm – 6:40pm, Room 1307**

d. Prerequisite/Course Description:

PREREQUISITE: A minimum prerequisite of high school Algebra I, Geometry, Algebra II, and Trigonometry with an appropriate mathematics placement score is required. An alternative to this is that the student should successfully pass with a "C" or higher in MTH 113, Precalculus Trigonometry or MTH 115, Precalculus Algebra and Trigonometry.

This is the first of three courses in the basic calculus sequence taken primarily by students in science, engineering, and mathematics. Topics include the limit of a function; the derivative of algebraic, trigonometric, exponential, and logarithmic functions; and the definite integral and its basic applications to area problems. Applications of the derivative are covered in detail, including approximations of error using differentials, maximum and minimum problems, and curve sketching using calculus.

e. Textbook: **Calculus, 11th edition, by Ron Larson and Bruce H. Edwards**
Brooks/Cole (Cengage Learning), 2014 (Chapters 1, 2, 3, 4, 5: See topic outline for sections covered)

f. Course Objectives: The objective of this course is to provide an understanding of concepts, develop competent skills, and demonstrate applications in the following areas:

    i. Limits and continuity of functions
    ii. Differentiation
    iii. Antidifferentiation
    iv. Basic integration

This course seeks to lay a foundation in these areas upon which subsequent calculus courses can build.

3. COURSE SUPPORT MATERIALS

a. **WebAssign is software that will be used for homework in this course**. Homework assignments and other instructional tools are available via this web-based structure (videos, HW helps, etc.)

b. Online resources (especially if missing class) at **http://www.khanacademy.org**

c. Online HW solutions for odd numbered exercises at **http://www.calcchat.com**

d. Library and LRC resources and services are accessible on-line at **http://lib.calhoun.edu/lib**

4. INSTRUCTIONAL METHODS

Instructional methods may include, but not be limited to lectures (with handouts), class discussions, and computer-generated material. The facilities of the Mathematics Learning Center may be utilized.

WebAssign will be used for homework in this course, but I highly encourage you to complete some of the book exercises given in each section handout as well. Chapter exams, sample exams, and/or quizzes will likely be paper-based.

	CHAPTER 1 LIMITS AND THEIR PROPERTIES	
1/9	1.1	A Preview of Calculus
1/11	1.2	Finding Limitis Graphically and Numerically
	1.3	Evaluating Limits Analytically
1/16	1.4	Continuity and One-Sided Limits
1/18	1.5	Infinite Limits
1/23	TEST	
	CHAPTER 2 DIFFERENTIATION	
1/25	2.1	The Derivative and the Tangent Line Problem
1/30	2.2	Basic Differentiation Rules and Rates of Change
2/1	2.3	Product and Quotient Rules and Higher-Order Derivatives
2/6	2.4	The Chain Rule
2/8	2.5	Implicit Differentiation
2/13	2.6	Related Rates
2/15	TEST	
	CHAPTER 3 APPLICATIONS OF DIFFERENTIATION	
2/20	3.1	Extrema on an Interval
2/22	3.2	Rolle's Theorem and the Mean Value Theorem
2/27	3.3	Increasing and Decreasing Functions and the First Derivative Test
	3.4	Concavity and the Second Derivative Test
3/1	3.7	Optimization Problems
3/6	3.9	Differentials
3/8	TEST	
	CHAPTER 4 INTEGRATION	
3/13	4.1	Antiderivatives and Indefinite Integration (a)
		Separable Differential Equations (b) - problems 57 – 64
3/15	4.2	Area
3/20	4.3	Riemann Sums and Definite Integrals
	4.4	The Fundamental Theorem of Calculus
3/22	4.5	Integration by Substitution
4/3	4.6	Numerical Integration
4/5	TEST	
	CHAPTER 5 LOGARITHMIC, EXPONENTIAL, AND OTHER TRANSCENDENTAL	
4/10	5.1	The Natural Logarithmic Function: Differentiation
	5.2	The Natural Logarithmic Function: Integration
4/12	5.3	Inverse Functions
4/17	5.4	Exponential Functions: Differentiation and Integration
	5.5	Bases Other Than e and Applications
4/19	5.6	Inverse Trigonometric Functions: Differentiation
	5.7	Inverse Trigonometric Functions: Integration
4/24	5.8	Hyperbolic Functions
	6.2	**Differential Equations: Growth and Decay**
4/26	TEST	

5. **WITHDRAWAL POLICY**

If a student has excessive absences or is likely to earn a grade of F, he/she is encouraged to withdraw from the course after consulting with the instructor. Instructors will not withdraw students for any reason. **Failure to officially withdraw from the course could result in a grade of F and adversely impact financial aid.** Withdrawing from a course is the responsibility of the student; therefore, a grade of F will not be changed to a grade of W. A student may withdraw through the final drop day which is Monday, *__April 9__* for this semester.

6. **GRADING PLAN**

Chapter Tests – 32%
Homework – 20%
Quizzes – 30%
Final Exam – 18%

7. **GRADE SCALE**

A – Excellent   (90% – 100%)
B – Good   (80% – 89%)
C – Average   (70% – 79%)
D – Poor   (60% – 69%)
F – Failure   (Below 60%)

8. **ONLINE HOMEWORK POLICIES**

Online homework is a ***required*** portion of this course and ***MUST*** be completed for each chapter. All sections of online homework for a given chapter ***MUST be completed prior to (or on the date of) the test for that chapter*** with a grade of 50% or better (on EACH section). For example, when I download HW grades the morning after your 1st test, you will need to have a grade of 50% or better on ***each individual***

section from chapter 1 (sections 1.1 – 1.5) to avoid penalty. Keep in mind that even if you are absent on the day of the test, you still MUST have the homework completed by the date of the test to avoid penalty (– 3 points on your test grade).

Also, as a bonus, those who complete *each individual section* of a given chapter's online HW with a 100% grade will be given + 5 points to their grade for that test (good bonus – half a letter grade).

9. **OTHER ASSIGNMENT INFO**

The final exam for this course will cover all material (comprehensive) with a bigger portion of the exam concentrated on the material in the last chapter.

Tentative Test Dates:

Test 1 – Sections 1.1-1.5: Thursday, January 26   Test 3 – Sections 3.1-3.9: Thursday, March 16
Test 2 – Sections 2.1-2.6: Tuesday, February   Test 4 – Sections 4.1-3.6: Thursday, April 14

Holidays for the semester. The school will be closed and class cancelled on the following dates:

Spring Break – March 27 – 31 (Tuesday Mar. 28 and Thursday Mar. 30 for this class)

10. **DATE, TIME, AND LOCATION OF FINAL EXAM**

Tuesday, May 8 @ 5:00 pm – 7:00pm (same classroom)

11. **ATTENDANCE POLICY**

The maximum number of absences for this course is 7 or 4-consecutive

Attendance is taken for each class meeting. In general, students should have no more than <u>seven</u> absences for a 15-week term. Furthermore, any student missing 5 or more classes in a row **will not pass the course**. Communication with the instructor concerning absences is essential. If a student has excessive absences, he/she is encouraged to withdraw from the course after consulting with the instructor. Instructors will not withdraw students for any reason. *Failure to officially withdraw from the course could result in a grade of F and adversely impact financial aid.* Withdrawing from a course is the responsibility of the student; therefore, a grade of F will not be changed to a grade of W.

Military personnel who are involuntarily called to active duty for unscheduled and/or emergency situations and those individuals called for jury duty will be excused with official documentation. College-related events which the student is required to attend by the club sponsor and which have been approved by the appropriate Dean, will also be excused. Official documentation will be required.

If a student registers during the drop/add period, attendance is counted from the first class meeting following registration. *I will also award minor extra credit for attendance* (likely credit will be + 3 pts. on final grade for students that missed 0 times, + 2 pts. for those missing 1 time, +1 for those missing twice => includes unexcused or excused absences).

Please contact me before class if you expect to miss class (unless a last-minute or emergency situation arises). Students are responsible for activities missed during any absence, whether excused or unexcused, and make-up work will be governed by the instructor as stated below. It is the ***student's responsibility*** to keep a record of his/her absences and to understand specific policies detailed in each course syllabus.

12. **MAKEUP POLICY/HOW TO MAKE UP MISSED WORK**

Please contact me as soon as possible before missing class (or as soon as possible after class) in order to make up missed work / tests. If you miss a **test** (also counted as an absence), you must complete the test **within 1 week** (don't forget that online HW is still due on the day the test is given in class to avoid penalty). Make-up tests will be administered in the testing center (Huntsville), and you will need to bring your student ID. The testing center hours are typically Mon-Thurs 8-5:30.

Quizzes (which will be shorter and of which the lowest grade will be dropped) will only be made up on class days (before or after class) and follow similar guidelines.

13. **DISABILITY STATEMENT**

If you have a disability that might require special materials, services, or assistance, please contact Calhoun's Disability Services Office in the Chasteen Student Center, Room 218 (Decatur Campus) or call (256) 306-2630 or (256) 306-2635.

16. **COMMUNICATION**

Calhoun Community College will communicate campus-wide information via SPACE student e-mail. This is the official method that you will receive information related to your enrollment at Calhoun. You have a SPACE e-mail account, which you can access from www.calhoun.edu. Your username is your "C" number. Your initial password is cal and the last 5 digits of your "C" number. You will be prompted to change the password. Your email address will be your first initial + last name + last 5 digits of your "C" number@calhoun.edu (Example: jsmith23456@calhoun.edu)

17. **CHEATING AND PLAGIARISM**

Cheating and plagiarism are considered violations of the Student Code of Conduct. These violations are subject to disciplinary action by the College up to, and including, dismissal. Please refer to the Student Handbook, page 16, for the definitions of cheating and plagiarism. The Student Code of Conduct can be found in the Student Handbook. It is available at www.calhoun.edu. Please click on Catalog under the Quick Links section in the upper right hand corner.

18. **HOW TO MAKE A TUTORING APPOINTMENT**

To make an appointment with a Tutor, login to your MyCalhoun. Under the Quicklaunch, click the TutorTrac/SAGE Icon. Click Search Availabilities; Choose a Center (i.e. STAR Decatur or STAR Huntsville); Click Choice Required (Your semester schedule will pop up). Click on the class that you want to receive tutoring; click the Reason, and Press Search. You will see the schedule availability of all tutors that teach that particular subject. To select your day and time, simply click on the time that you would like to attend. On the appointment entry page, add your phone number, notes, check both boxes beside the save button and PRESS SAVE.

19. **GENERAL COMMENTS BY INSTRUCTOR**

1. Mobile phones (and headphones) should be turned to "silent" or "vibrate" during class and <u>put away</u>.

2. The Mathematics Lab is located on the Main Floor in the new building. The purpose of the Mathematics Lab is to provide <u>free</u> tutoring and to assist mathematics students with class, lab, and homework assignments. The staffed hours of the Lab may vary from semester to semester but are supposed to be from 9-9 Mon-Thurs (and 8-12 Sat morning).

3. Food / Drinks are allowed in class in which case they do not create a problem for others or disrupt the class. This policy may be revised if necessary.

4. Please try not to be late for class. If I can make it on time, I expect you can as well. I know it may be hard for some of us to get here after work, but the earlier we get started, the earlier we get out. *If tardiness becomes a problem, I will be forced to mark students absent for repeat offenses*.

5. Please try not to leave class early unless absolutely necessary. I hope to avoid the distraction of students leaving during normal class time. If a situation arises in which you have to leave early, please inform me before class and try to sit close to the door so as to minimize distraction. *If leaving early becomes a problem, I will be forced to mark students absent for repeat offenses*.

6. Expect regular quizzes. I will drop your lowest quiz, but you can reasonably expect a quiz every week (especially if a chapter test is not given that week). Quizzes are typically short and will only take a small portion of class time.

19. **NOTES TO STUDENTS IN MY PREREQUISITE CLASSES**

- Summary: Calculus is a more advanced class than pre-calculus
- You will likely need a book (recommend an actual hard-copy book, not electronic)
- Students are expected to take more initiative in going through the material and working through examples outside of class time
- I highly recommend keeping up with homework assignments (and additional exercises if possible)

THIS SYLLABUS IS EFFECTIVE SPRING SEMESTER, 2018