\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**YEAR COURSE OFFERED:** 2017 – 2018

**SEMESTER COURSE OFFERED:** Fall/Spring/Summer

**DEPARTMENT:** MATH

**COURSE NUMBER:** 1431

**NAME OF COURSE**: Calculus I

**NAME OF INSTRUCTOR:** [Jennifer J May](http://www.math.uh/edu/~jen)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course**.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# Learning Objectives

Upon successful completion of this course, students will understand and be able to apply the ideas of differential and integral calculus to problems involving instantaneous rates of change,  properties of curves, areas bounded by curves, and motions of accelerated bodies.  They will develop proficiency in the rules and techniques of single-variable calculus, including derivatives of various combinations of functions, the chain rule, substitution, the mean value theorems, and the fundamental theorem of calculus.  Students will be able to use graphical information and symbolic expression simultaneously in solving mathematical problems.  They will be able to translate ordinary language descriptions of problems into mathematical expression, derive solutions by rigorous mathematical methods, interpret their results, and explain them.

# Instructor Information

* Instructor: Jennifer J May
* Office: PGH 641
* Office Hours: Office hours are held in CASA in [Garrison Gym](http://www.uh.edu/maps/buildings/?short_name=gar) ; Time / Days TBA – these hours will be posted in the CASA calendar

\*\* NOTE: For other times make an appointment at least 24 hours in advance – including online office hours (available for distance learning students only)

* Email: [jen@math.uh.edu](mailto:jen@math.uh.edu) [please note, you must put math 1431 in your subject line else email will not be opened due to security reasons]

# Major Assignments/Exams

|  |  |
| --- | --- |
| ASSESSMENTS |  |

Test 1 - 5% [completed online]  
Tests 2, 3, 4 - 15% each [scheduled outside of class time via CASA]  
Final exam- 25% [scheduled outside of class time via CASA]

Homework, Classwork, Discussion Board Postings and Recitation Quizzes – 10%

Online Quizzes - 10%

Online Poppers and Attendance - 5%

**Note**: The percentage grade on the final exam can be used to replace your lowest test score

**GRADING SCALE**

University of Houston standard grading scale will be used to determine your letter grade in this course. If x is your semester numerical score, then your grade will be:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A |  | B− |  | D+ |  |
| A− |  | C+ |  | D |  |
| B+ |  | C |  | D− |  |
| B |  | C− |  | F | Below 60 |

**INSTRUCTIONS FOR POPPERS [please also see website]**

* Popper questions will be dispersed between the two live sessions given by your instructor each week. The poppers will be due within 48 hours in the EMCF tab in your CASA account, starting the 2nd week of school.
* The purpose of the poppers is to give the students a chance to practice problems with their instructor and receive an “attendance” grade for the class.
* No popper paper is necessary for the online course.
* If you cannot attend the live sessions, they will be recorded for you to watch at your convenience and you must answer the popper questions on your own within 48 hours of the original class. So for example, if 10 popper questions were given on Monday, you will have to answer those 10 questions by 11:59PM on Wednesday. Typically half the popper questions occur the first night and half the 2nd.
* The total number of questions for the course will be counted, 85% of the total number of questions will be the 100%. For example, *if* there are 5 questions each class for 24 classes, which is 120 questions. Your grade will be calculated out of 120(.85) = 102 points.

**INSTRUCTIONS FOR QUIZZES**

* The quizzes are located in the CASA CourseWare course website under the “Online Assignments” tab.
* The quizzes will close on the due dates given on CourseWare at 11:59 pm and will not re-open.
* One of the lowest quizzes will be dropped.
* You have 20 times to take each quiz.
* There is a 60 minute time limit for each quiz.
* The following table shows what sections each quiz covers.
* All of the quizzes are open starting the first day of classes.

|  |  |  |  |
| --- | --- | --- | --- |
| **Quiz** | **Sections Covered** | **Quiz** | **Sections Covered** |
| Quiz 1 | 1.2 | Quiz 14 | 3.6 |
| Quiz 2 | 1.3 | Quiz 15 | 4.1 |
| Quiz 3 | 1.4 | Quiz 16 | 4.2-4.3 |
| Quiz 4 | 1.4-1.5 | Quiz 17 | 4.4 |
| Quiz 5 | 1.6 | Quiz 18 | 4.5 |
| Quiz 6 | 2.1 | Quiz 19 | 5.1 |
| Quiz 7 | 2.2 | Quiz 20 | 5.2 & review |
| Quiz 8 | 2.3 | Quiz 21 | 5.3 |
| Quiz 9 | 2.4 | Quiz 22 | 6.1 |
| Quiz 10 | 3.1 | Quiz 23 | 6.2 |
| Quiz 11 | 3.2-3.3 | Quiz 24 | 6.3 |
| Quiz 12 | 3.4 | Quiz 25 | 6.3 |
| Quiz 13 | 3.5 | Quiz 26 | 6.4 |

**INSTRUCTIONS FOR HOMEWORK/LAB QUIZZES**

* There are weekly assignments due every week starting the week of January 24th.
* There are several grades that count in the homework category:
  + Written homework, problems from the textbook or assigned according to the instructor and turned in as one pdf in the assignments tab in your CASA account. Failure to submit correctly and on time will result in a 0. No exceptions. Homework is due every Wednesday – do not wait until the last minute to try to upload however, technical difficulties are no excuse for late homework.
  + See [https://www.math.uh.edu/~bekki/Math1431and1432\_usingCASA.pdf](https://www.math.uh.edu/~bekki/Math1431and1432_usingCASA.pdf%20) for how to upload the homework.
  + Electronic multiple choice problems assigned by your instructor and entered on CourseWare under the EMCF tab, these will be due every Wednesday.
  + Lab quizzes given every week in recitation. Your TA will record the lab sessions if you are unable to attend. Five questions are given on night 1 of lab and the other 5 are given on night 2 of lab. You will have 48 hours to make up the missed lab questions before those questions are locked and answers can no longer be submitted.
  + Lab quizzes are due within 48 hours of the lab session in the EMCF tab.
  + Two of the lowest homework assignment scores will be dropped.

**DISCUSSION BOARD PARTICIPATION**

* We are an online community – you are NOT doing this alone, but because you chose to do this course online you must need the flexibility of WHEN you do it… thus, participation in the discussion board is very important!
* There is a class discussion board located on CourseWare at <http://www.casa.uh.edu>.
* Students are expected to post a question or reply to a post every week for your discussion board participation grade. Please do not force me to put a number value on how often. It is part of your job as a member of this team.
* Students are responsible for the content covered in the discussion board, just as if the question was asked in class.
* You can also link a forum to your email so you can get updates when a new post is available.
* Please only post on the titles your instructor creates. Creating your own separate post may result in a “no response”
* Posts must be related to the course content to count towards your grade.
* See <https://www.math.uh.edu/~bekki/Math1431and1432_usingCASA.pdf> for instructions on using the discussion board.
* When posting or replying to the discussion board remember that live people are on the other end that have real feelings and CAN NOT read your mind – so be specific in how you need help.
* The discussion board supports MATHJAX and there are easy keyboard shortcuts to type math, here’s a few examples: [Mathjax](file:///C:\Users\jen\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\VN2OJDS7\•%09https:\www.math.uh.edu\~bekki\Using%20MathJax%20on%20Courseware%20Discussion%20Board.pdf)
* NOTE: the discussion board is for classroom and content questions. Email should be reserved ONLY for personal issues. Else, please post to the discussion board so that everyone benefit from the question being asked.

**LATE ASSIGNMENT, MAKE-UP AND INCOMPLETE POLICIES**

* This course is a cumulative course. You as a student need to keep up with the reading, homework assignments and exams. Thus late work or make-ups will not be accepted.
* The following is calculated for the final grade:
* Two of the lowest homework assignments are dropped.
* One of the lowest quizzes is dropped.
* 85% of the total number of popper questions will be the 100%.
* The final exam score can replace the lowest exam score.
* Incomplete policy: A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work.

**EXAM INFORMATION**

MIDTERM EXAMS

## Test 1: Covers pre-requisite materials and will be ONLINE August 21 - 30.

## Test 2: Covers chapters 1 and 2 and will be in the CASA testing center September 20 - 25.

**Test 3:** Covers chapter 3 and will be in the CASA testing center **October 14, 16 - 17**

**Test 4:** Covers chapters 4 and 5 and will be in the CASA testing center **November 16 - 18**

* The tests will be given in CASA located on the second floor of Garrison or in CBB, see the exam scheduler for details.
* You can access the scheduler for these exams by logging into Courseware.
* The exams given in CASA will consist of both multiple choice and written questions.
* The multiple choice questions will be machine graded.
* The written questions (free response) will be graded by the instructors and teaching assistants.
* There will be a practice test on Courseware for each exam. 5% of your practice test score will be added to your exam score as bonus.
* The scheduler will be available approximately 2 weeks prior to the start of the exam cycle. Exam dates are listed above.

**FINAL EXAM**

* A **comprehensive final exam** will be given in CASA.
* The final will include chapters 1 through 6.
* You can access the scheduler for this exam by logging into Courseware.
* Dates: **December 10, 11 and 12**

# Required Reading

* Course webpage: <http://www.casa.uh.edu> and <https://www.math.uh.edu/~jen>
* The textbook, online quizzes, and additional help materials will be made available by logging into CourseWare at [http://www.casa.uh.edu](http://www.casa.uh.edu/) . The first portion of these materials are freely available for the first two weeks of class. All students must purchase a Course Access Code and enter it on CourseWare by the end of the second week (September 4th) of class to continue accessing the course learning materials. A Course Access Code must be purchased for $55 from the University Bookstore.

# 

# List of discussion/lecture topics

# Chapter 1  Limits and Continuity 1.1     A Review of Functions 1.2     An Intuitive Introduction to Limits 1.3     Definition of Limit and Arithmetic Rules 1.4     Continuity 1.5     The Intermediate Value Theorem 1.6     Limits of Trigonometric Functions and the Pinching Theorem Chapter 2  Differentiation 2.1     The Definition of the Derivative 2.2     Derivatives of Polynomials and Trigonometric Functions 2.3     Differentiation Rules 2.4     Implicit Differentiation Chapter 3  Applications of the Derivative 3.1     Related Rates 3.2     The Mean-Value Theorem 3.3     Intervals of Increase and Decrease 3.4     Extreme Values 3.5     Concavity and Points of Inflection 3.6     Curve Sketching Chapter 4  The Transcendental Functions 4.1     Inverse Functions 4.2     The Exponential Function 4.3     Natural Logarithm Function 4.4     Inverse Trigonometric Functions 4.5     Hyperbolic Functions Chapter 5  Further Applications of the Derivative 5.1     Optimization 5.2     Differentials 5.3     L’Hospital’s Rule

# Chapter 6  Integration 6.1     The Definite Integral 6.2     The Fundamental Theorem of Calculus 6.3     Basic Integration Rules 6.4     Integration by Substitution

# STUDENT DISSABILITY ACCOMMODATIONS AND SERVICES

# The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students who have a disability. In accordance with Section 504 and ADA guidelines, University of Houston strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please visit The [Center for Students with DisABILITIES (CSD)](http://www.uh.edu/csd/) website at <http://www.uh.edu/csd/> for more information.

# Academic Adjustments/Auxiliary Aids: The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students who have a disability. In accordance with Section 504 and ADA guidelines, University of Houston strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please visit The [Center for Students with DisABILITIES (CSD)](http://www.uh.edu/csd/) website at <http://www.uh.edu/csd/>  for more information.

# Accommodation Forms: Students seeking academic adjustments/auxiliary aids must, in a timely manner (usually at the beginning of the semester), provide their instructor with an approved current Student Accommodation Form (paper copy or [online version](http://www.uh.edu/csd/services/online_accommodation_form.html), as appropriate) before an approved accommodation can be implemented.

# Details of this policy, and the corresponding responsibilities of the student are outlined in [The Student Academic Adjustments/Auxiliary Aids Policy (01.D.09)](http://www.uh.edu/af/universityservices/policies/sam/1GenAdmin/1D9.pdf) document under *[STEP 4: Student Submission (5.4.1 & 5.4.2), Page 6]*. For more information please visit the Center for Students with Disabilities [FAQs](http://www.uh.edu/csd/services/faq_online_form.html) page.

# Additionally, if a student is requesting a (CSD approved) testing accommodation, then the student will also complete a Request for Individualized Testing Accommodations (RITA) paper form to arrange for tests to be administered at the CSD office. CSD suggests that the student meet with their instructor during office hours and/or make an appointment to complete the RITA form to ensure confidentiality.

# \*Note: RITA forms must be completed at least 48 hours in advance of the original test date. Please consult your [counselor](http://www.uh.edu/csd/about/staff.html) ahead of time to ensure that your tests are scheduled in a timely manner. Please keep in mind that if you run over the agreed upon time limit for your exam, you will be penalized in proportion to the amount of extra time taken.

**UH CAPS Statement**

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS ([www.uh.edu/caps](http://www.uh.edu/caps)) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus.       <http://www.uh.edu/caps/outreach/lets_talk.html>