Calculus I
MATH 201 Section AA, Fall 2019
M,W 8:00am – 9:40am in NAC 5/101

Instructor: Jhevon Smith ("Jhevon" is fine.)
Email: JhevonTeaches@gmail.com (Do not email me at any other email address.)
Office Hour: W 7:00pm – 8:00pm, or by appointment in NAC 6/291B or NAC 8/133.
Office Location: NAC 6/291B
My Website: http://math.sci.ccny.cuny.edu/people?name=Jhevon_Smith
Class Website: http://math.sci.ccny.cuny.edu/pages?name=For+Math+201+AA+Fall+2019
Text: Thomas' Calculus: Early Transcendentals 14th edition, by Hass, Heil, and Weir; Pearson
Math Dept.: NAC 8/133   **Math Dept. website:** http://math.sci.ccny.cuny.edu/
Math 201 website: http://math.sci.ccny.cuny.edu/courses?name=Math_20100

Disclaimer: Consider this syllabus tentative. I do not expect to make changes, but I may have to depending on how the semester goes. I reserve the right to make updates to the syllabus at any point during the semester. However, I promise to inform you of any changes.

Course description: Limits, continuity, intermediate and mean value theorems, derivatives and their applications, antiderivatives, Riemann sums, definite and indefinite integrals, the Fundamental Theorem of Calculus, log and exponential functions.

Calculator/Technology: The use of calculators, smart phones or other electronic devices are NOT permitted in any quiz or exam, but may be useful in self-study.

Text: You do not need to purchase a physical text, but you will need paid access to the online homework system offered by the text; MyMathLab. By purchasing this access, you will gain access to the eText as well. More info on this later.

Grading: Grades will be assigned according to the following chart.

Letter Grade	G.P.A.	Grade	Letter grade	G.P.A.	Grade
A	4.00	94-100	C+	2.33	77-79
A$^-$	3.66	90-93	C	2.00	74-76
B$^+$	3.33	87-89	**C-**	**1.66**	**70-73**
B	3.00	84-86	**D**	**1.00**	**60-69**
B-	2.66	80-83	**F**	**0**	**Below 60**

Departmental policy demands that the final exam be worth 40% of your grade in this course. The other 60% will come from your in-class grade. The above table is a guide in order to facilitate performance metrics and the use of an electronic grading system. In general, grading will incentivize improvement over the course of the semester. The grade breakdown for our class is as follows:

Quizzes: 15% (In general you will have a quiz every week; two grades dropped)
Homework: 10% (Online via Pearson's MyLab; two grades dropped)
Participation: 5% (Based on attendance, but I'll notice if you participate further)
In-class tests: 30% (We will have two non-cumulative in class tests)
Final Exam: 40% (This will be a departmental cumulative exam given at the end of the course.)

Make-up Policy: There are no make-ups for missed quizzes or HW. Make-ups for exams will only be given if you missed the exam for a very compelling reason, such as severe illness or death. If such extenuating circumstances occur, you must inform me immediately, and provide proof of the situation. Afterwards, a make-up may be scheduled.

Attendance: Attendance will be taken at the beginning of class. You are *late* if you arrive after your name is called. You will be assigned a WU (failing) grade if you accumulate 5 unexcused absences or if you stop attending class without officially withdrawing (please don't do this, if you're thinking about it, come talk to me—or at least talk to your academic advisor).

To be excused for an absence (or lateness) you must email me no later than one day after that particular absence (or lateness) with the reason. Of course, proof is required where applicable. For example, if your absence or lateness was due to a doctor's appointment, I expect to see a doctor's note. If you miss a class, it is your responsibility to catch up. You can see me during my office hour to discuss what was done in class, or catch up on your own. It's up to you.

Work ethic: You are not to slack off (more on this in class)! You are to read ahead! Very Important! Read about each section before coming to class. Maybe even try some problems or watch some instructional videos. It's better if you have your mind working on the concepts before coming to class—it will be easier for you to keep up and ask intelligent questions. Start working hard from day 1, don't put yourself in a position where you'll have to catch up. Prevention is better than cure. I expect you to give 110% effort here. Even if you've taken calculus before—no, *especially* if you've taken calculus before. 100% might do if you're great at algebra.

Homework/quizzes/tests:

Homework will be submitted online through Pearson's MyLab. Information for accessing this can be found on the next page. I believe the price is ~$80. If you'd also like a paper version of the text, it'll cost ~$115 via a special discount for CCNY students.

Quizzes will be given during class, at the beginning, every week (when you don't have a test). In general, they will be short-answer, fill-in-the-blank type questions and you won't get partial credit. You will do your work on scrap paper and then write your answers on the sheet provided.

Tests will also be given during class. Their dates can be found in the topics list. The tests are not cumulative. You must show all your work for tests and you will be given paper/booklets in which to write. In general, partial credit will be given on tests.

The final exam will be cumulative and will be given during finals week. You must also show all your work on the final exam to be assessed for partial credit. The final will be a uniform final written by the Math Dept, but graded by me. I do not have any control over the questions that will be asked, so a part of my job is to prepare you for a potentially difficult final.

When going through each assessment, do not expect a homogeneous learning experience. This will not be the case and it is not good for you anyway. The text, my lectures, homework, quizzes and tests all have their place in helping you learn. Don't expect them to all be the same or cover the same material in the same way with the same level of difficulty. This is an unrealistic and unhelpful expectation. I will be forthcoming on what you will be tested on and how you will be tested, but other than that, I will not "teach to the test". So don't expect that.

Pearson | MyLab | Math

Student Registration Instructions

To register for Math 201-AA Fall 2019:

1. Go to https://www.pearson.com/mylab.
2. Under Register, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's course ID: smith32838, and **Continue**.
5. Enter your existing Pearson account **username** and **password** to **Sign In**.

   You have an account if you have ever used a MyLab or Mastering product.

   » If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.

   » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
   » If available for your course,
      • Buy access using a credit card or PayPal.
      • Get temporary access.

   If you're taking another semester of a course, you skip this step.
7. From the You're Done! page, select **Go To My Courses**.
8. On the My Courses page, select the course name **Math 201-AA Fall 2019** to start your work.

To sign in later:

1. Go to https://www.pearson.com/mylab.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password,** and **Sign In**.
4. Select the course name **Math 201-AA Fall 2019** to start your work.

To upgrade temporary access to full access:

1. Go to https://www.pearson.com/mylab.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password,** and **Sign In**.
4. Select **Upgrade access** for **Math 201-AA Fall 2019**.
5. Enter an access code or buy access with a credit card or PayPal.

Prerequisites: I also expect you to remember the math that you have done before this course. Math is cumulative. Each math class in a sequence builds on the class that came before it. The prereqs for this course are college algebra and precalculus. I will assume you are all experts at these lower-level math courses; not much choice here, we have a packed syllabus and we won't have time to go over too much prereq material, if any. If you're not an expert in these courses, become one—quickly; like by the end of the week. I have video lectures for a precalculus course I taught in spring 2019, which may help in your review. You can find the playlist for that course here: https://www.youtube.com/playlist?list=PLYoxM3oLTvxLx7IF_6KbnphUUiuXdIO5U

Blasphemies: At this level, certain mistakes will be considered unforgivable and will result in an instant zero in any problem where such mistakes are made (you lose your chance at partial credit). These are:

1. Canceling across sums
2. Distributing powers across sums
3. Dividing by zero
4*. While you probably won't be penalized outright for this, please use parentheses when appropriate. If you make a mistake because you were sloppy with parentheses (or notation in general) you will be punished heavily for it.

Contact: When necessary, I will contact you via the email you have in CUNYfirst. If this isn't the best email to use, you should email me from your preferred email address and inform me of this. Please check this email address regularly and read the emails I send you.

Feedback: I highly encourage you to give me feedback about my teaching or the class, whether positive or negative (just make it constructive please). You can email me or see me during my office hours. Talk to me. I'm here to help you learn and succeed.

Help: Besides your online HW platform (which has many resources to help you), there are MANY resources available to help you succeed in this class. Some of these are:

- First, there's me! Come see me during my office hours if you're having any difficulties. Drop by during my office hours or email me to set up an appointment.

- I'll be uploading solutions to tests and answers to quizzes on the webpage for the class (See "Class Website" on page 1), practice problems, as well as general advice on the class website. Be sure to check these out. The topics list towards the end of this document also has suggested problems for you to attempt from the text. These will not be collected, but it is highly recommended that you attempt them. You can see me or a tutor if you have issues. Which brings me to the next point.

- FREE Tutoring is available daily in Marshak 403—the Math/Physics Tutoring Center. You can find information about the tutoring center and its hours of operation here: http://math.sci.ccny.cuny.edu/pages?name=tutoring

- There are also online resources available. A great place to get math help, even at odd hours, is http://mathhelpforum.com/. There are a significant number of brilliant people from varying time zones who decide to spend their free time helping others with math. Take advantage of this great service. Another great resource on the web is https://www.wolframalpha.com/. You can use that site to check your answers. Brilliant site. https://www.symbolab.com/ is another great site to check your answers, especially if you know what you'd like to compute and like using templates. I use http://graph.tk/ if I need to graph something quickly. Some kids like

https://www.desmos.com/ for their graphing and computational needs. Of course, there are other online contenders like YouTube (where I'll also be posting videos of our lectures), Khan Academy, Paul's Online Math Notes, etc. Check them out. Google is your friend…and big brother. A quick Google search can do wonders.

- As of last semester, a friend of mine, professor Quinn Culver, is offering free math help available on his live stream, https://www.twitch.tv/quinnculver, which is running Sunday-Thursday from 9pm-midnight EST. If you check him out, be sure to tell him I sent you.

- And don't forget your classmates. You should get the contact information of at least one person that you can study with or get missed notes from if you are absent, etc. You're all in this together, help each other out.

Student Disability Services: If you have a disability that may affect your academic performance, please go to the Student Disability Services (SDS), A.K.A. The AccessAbility Center (AAC), office as soon as you possibly can. You may be entitled to extra time or other accommodations. Everyone should be given an equal opportunity to do well; be sure to see the SDS if you believe you may qualify for accommodations that will allow you to put your best foot forward. It is a good idea to touch base with them even if you have a disability that you don't think will affect your academic performance. You should see them within the first week of classes. For more information, see: https://www.ccny.cuny.edu/accessability

Some class rules: Please silence your cell phones and don't use them when in class. Eating in class is NOT allowed. Drinking is permitted, as long as you remove your garbage afterwards. If I catch you with a cellphone or smart watch in an exam, I will take away your exam and give you an F for that exam. If I catch you with a cellphone or smart watch in the final, I will take away your final and give you an F for the course. Similar, or more severe actions, will be taken if I catch you cheating by other means. Work hard, be honest. If you do the right things, cheating won't be necessary. And passing a class for real is a lot more rewarding anyway. This brings us to…

Academic Integrity: Any act of academic dishonesty will be dealt with by applying the most stringent penalties permitted. Cheating includes, but is not limited to, receiving help during exams and submitting homework without properly acknowledging persons who assisted you. Please read carefully the Policy on Academic Integrity posted on the CUNY website with URL http://www1.cuny.edu/portal_ur/content/2004/policies/image/policy.pdf

I really don't like cheating; the university doesn't like it either. Please don't do it. There, I asked nicely. Don't make me act on this warning. I will; and it's not comfortable for anyone.

More advice: Believe in yourself (i.e. have/get a "growth mndset"); listen to Jhevon; work hard AND work smart. Also remember that one of the definitions of insanity is to do the same thing over and over and expect different results. More on this in class. Be honest with yourself and seek help when you need it. The quizzes, homework and tests will let you know when you need help, NOT your personal feelings about how much you understand. Pay attention for more advice as the semester goes on. I have no incentive to fail you; I will give you advice that works. Ignore it at your peril.

Selected Events from the Fall 2019 Academic Calendar

For the full calendar: https://www.ccny.cuny.edu/registrar/fall-2019-academic-calendar

DATES	DAYS	
Aug 27 – Sep 02	Tuesday – Monday	Change of program period; late fees apply
Sep 02	**Monday**	**College Closed**
Sep 02	Monday	Last day to drop without the grade of WD;
Sep 03	Tuesday	Course Withdrawal drop period begins (A grade of "WD" is assigned to students who officially drop a class);
Sep 05	**Thursday**	**Classes follow a Monday schedule**
Sep 16	Monday	Last day to drop without the grade of "W"; Course withdrawal period ends (Last day for "WD" grades);
Sep 17	Tuesday	Course withdrawal period begins (A grade of "W" is assigned to students who officially drop a class) – No Refund; Assignment of "WN" grades for non- attendance;
Sep 30 – Oct 1	**Monday – Tuesday**	**No Classes Scheduled**
Oct 08 – Oct 09	**Tuesday – Wednesday**	**No Classes Scheduled**
Oct 14	**Monday**	**College Closed**
Oct 16	**Wednesday**	**Classes follow a Monday Schedule**
Nov 05	**Tuesday**	**Course withdrawal period ends. Last day to withdraw from a class with the grade of "W";**
Nov 28 – Dec 01	**Thursday – Sunday**	**College closed**
Dec 12	Thursday	Last day of Classes
Dec 16 – Dec 20	**Monday – Friday**	**Final Examinations – Day/Evening Classes**
Dec 27	Friday	Final Grade Submission Deadline for Fall 2019

Tentative syllabus for the course, with minimal set of practice problems (do more if needed!):

#	Section/Topic	Suggested problems from the text
1	Review of exponents and logarithms; exponential functions and logarithmic functions (done in class)	**1.5:** 1-5, 7-11 odd, 12-20, 21, 24, 29-36 odd **1.6:** 41-69odd
2	Review of functions, including trig functions (not done in class)	**1.1:** 3,6,7,14,17,18,19,27,47,49,50 **1.2:** 1,2,6,9,11,12,17,20,23,24,41,43,46,53, 54,60,69,70,72 **1.3:** 1,4,5,13,19,24,35,55,57,61,62 **1.6:** 7-16,25,32,33,77,85,86
3	The Limit of a function (including infinite limits and limits at ∞); Calculating Limits; Limit Laws; Asymptotes	**2.2:** 3,4,5,8,9,12,22,27,39,44,50,52,53,57, 60,62,64,65,78,81 **2.4:** 1,5,12,15,19,36,38,42,48,49,50 **2.6:** 3-9,16,17,20,25,27,29,37,39,53,57,67,69,75, 81,88,91
4	2.3 - The precise definition of a limit	8,9,16,22,30,49,57
5	2.5 - Continuity; The Intermediate Value Theorem (IVT)	5-10,17,18,24,29,32,37,49,56,57,63,64,65,69
6	Derivatives and rates of change; The Rate Problem	**2.1:** 2,3,5,7,13,15,18,23,25 **3.1:** 5,7,15,18,25,28,35,36,39 **3.4:** 3,7,13,15,19,26
7	3.2 - The derivative as a function	1,4,13,23,27-30,32,41,42,60
8	Basic differentiation formulas; The Chain, Product, and Quotient Rules	**3.3:** 1-8,17,26,28,35,45,47,55,59,60,65,69, 70,72,77,78 **3.6:** 1-8,13,17,21,23,26,30,35,40,45,48,79, 80,87-89,97,111-113
9	3.5 - Derivatives of trig functions	1,4,7,9,10,14,22,34,39,51,53,59,67,68
10	3.7 - Implicit differentiation	1,5,16,29,33,42,45,50,53,57
11	Derivatives of inverse functions, including inverse trig functions, and log functions; Logarithmic Differentiation	**3.8:** 4,7,9,15,22,35,41,46,54,62,67,70,84,94, 102 **3.9:** 1-8,13,14,15,17,21,31,39,42,43,46,56
12	4.5 - Indeterminate forms and L'Hôpital's rule	7,14,20,27-38,57,62,67,71,77,85
13	3.10 - Related rates	1,9,13,14,20,22,23,24,27,28,43,44
*	**Test #1; covers at most topics 1 through 13**	**October 30**
14	3.11 - Linear approximation and differentials	6,11,15,17,20,29,45,46,47,53,54,56,57,62, 64
15	4.1 - Maximum and minimum values; The Extreme Value Theorem (EVT)	5,6,7,15,16,18,28,33,35,40,71,74
16	4.2 - The Mean Value Theorem (MVT)	5,15,17,22,54,63
17	Derivatives and shapes of graphs; Curve Sketching	**4.3:** 3,7,14,19,45,59,64,71,74,84 **4.4:** 5,9,21,28,46,55,87,97,106
18	4.6 - Optimization	5,7,14,20,37,44,53
19	4.8 - Anti-derivatives and the Indefinite Integral	1,6,7,13,17,19,23,24,25,27,41,51,61,67,70,83,86, 91,97,104,108,113,123
20	5.2 - Sigma notation	1,7,14
21	5.1 - Areas and distance; The Area Problem	3, 8, 9
22	The definite integral; Infinite Riemann Sums	**5.2:** 37,40 **5.3:** 1, 3, 8,9,29,47,50,60,79,86
23	5.4 - The Fundamental Theorem of Calculus	1,6,10,18,26,34,45,52,56,67,85
24	The Substitution Method of Integration	**5.5:** 1,4,7,9,12,22,31,34,54,55,67,77 **5.6:** 3,6,13,14,17,27,39,43
25	5.6 - Areas between curves	49,63,69,87,95,101
*	8.2 - Integration by Parts (time permitting)	1 – 55 odd
*	**Test #2; covers everything after test 1**	**December 11**
*	**Final Exam: Date, Time, Location TBA**	**Schedule can be found [here (hyperlink)](#)**

Note: the text has chapter review problems and "Advanced Exercises" problem sets at the end of each chapter. You may practice some of these for extra challenge!

COURSE #: 20100	CATALOG DESCRIPTION:
COURSE TITLE: Calculus I CAREER: undergraduate CATEGORY: regular TERM OFFERED: Fall, Spring, Summer PRE-REQUISITES: Math 19500 or placement PRE/CO-REQUISITES: HOURS/CREDITS: 4HR/WK; 4 CR DATE EFFECTIVE: 08/01/18 COURSE SUPERVISOR: Sergiy Merenkov	Limits, continuity, derivatives, differentiation and its applications, differentials, definite and indefinite integrals. **Text:** Thomas' Calculus: Early Transcendentals, 14th Edition, by Joel R. Hass, Christopher E. Heil, Maurice D. Weir.

COURSE LEARNING OUTCOMES

After taking this course, the student should be able to:	Contributes to Departmental Learning Outcome(s):
1. Evaluate limits, including the use of L'Hôpital's Rule.	a, b, e1, e2
2. Differentiate algebraic and transcendental functions.	a, b, e1, e2
3. Solve Maximum and Minimum problems.	a, b, c, e1, e2
4. Solve Related Rates problems.	a, b, c
5. Apply methods of calculus to sketch curves.	a, b
6. Anti-differentiate algebraic and trigonometric functions.	a, b, c, e1, e2
7. Approximate integrals by Riemann sums.	e1, e2, g
8. Evaluate elementary integrals using substitution.	a

COURSE ASSESSMENT TOOLS

1. Term average, based mostly on in-class examinations: 60% of grade.
2. Comprehensive written final exam: 40% of grade.

DEPARTMENTAL LEARNING OUTCOMES

The mathematics department, in its varied courses, aims to teach students to

a. perform numeric and symbolic computations,
b. construct and apply symbolic and graphical representations of functions,
c. model real-life problems mathematically,
d. use technology appropriately to analyze mathematical problems,
e. state (e1) and apply (e2) mathematical definitions and theorems,
f. prove fundamental theorems,
g. construct and present (generally in writing, but, occasionally, orally) a rigorous mathematical argument.

Anonymous Questionnaire

What is your major? _____

Are you sure you need this class? _____ (think about it again, and answer).

What is the highest level of math you have to complete for your major? _____

How did you get into this class? (Passed the prerequisite course, placed here upon college entry, placed by an advisor, etc)

_____

_____

Are there any dates during the semester for which you will not be able to take an exam/quiz due to religious reasons? If so, please state the date(s) and occasion(s) below.

_____

_____

How good would you say you are at Algebra? _____ Precalc? _____ Calc 1? _____
(Enter 5 for "I can do it in my sleep!", 4 for "I'm not the best at it, but pretty awesome.", 3 for "I'm just OK; I'm good at the basics.", 2 for "I'm not the worst, but far from the best.", 1 for "The class was a blur that got more obscure over time!", 0 for "I haven't taken before!")

With the same scale as above, rate your comfort level with math in general: _____

Any general feelings or concerns towards this course? (For example, are you: Scared? Excited? Curious? Indifferent? Based on your perceived ability in math, what grade are you expecting? etc)

_____

_____

_____

Are there any other relevant comments that you wish to add?

_____

_____

_____