THE CITY COLLEGE OF NEW
DEPARTMENT OF MATHEMATICS
MATH 201-CALCULUS I
FALL 2023

Course Supervisor:	Cheikhna Mahawa Diagana	**Email:** cmahawa@ccny.cuny.edu
Office: MR 213	**Phone:** (212) 650-5119	**Office Hours:** MW 12:00 - 2:00 pm & by Appointment

Course Pages: https://math.sci.ccny.cuny.edu/courses?name=Math_20100
Lecture Location: All Lectures are **in-person** except it is stated otherwise. However, we encourage instructors to record lectures on **BB/Zoom** for students to watch the missing lectures in case of illnesses. **Blackboard Collaborate Ultra (BCU)** is encouraged to be used. To access the BCL follow these steps:

1. Go to https://www.ccny.cuny.edu/
2. On the right side of the screen, click on: **Login**
3. Then, on the new page, Choose the third column: **Student**. Then Move down and click on Blackboard.
4. On the new page, Use your CCNY credential i.e xxxxx000@login.cuny.edu with the same password you are using; and you are on Blackboard.
5. Finally, Click on your course i.e. 2023 Spring Term (1) MATH 20100 AB[10142] (City College).
6. To attend the lecture follow these steps: On the Left of the new page, Choose Tools → Blackboard Collaborate Ultra. Then Choose i.e Lecture 1 under Session.
7. To access the recorded lectures, do the following: (1) On the left of the page (session), Click on the sign looks a classic tape (3 horizontal lines) (2) Then hit on recording.

Textbook: Stewart: Early Transcendentals (9th ed.), Clegg and Watson. ISBN: 9781337613927.

Objectives: This course is primarily designed for undergraduate students.The course involves in both con- ceptual/theoretical and application. We Also illustrate these theoretical concepts with examples.Therefore, doing homework consistently and attending the lectures are the best way to prepare the exams. In addition, this course prepares students for Math 212: Calculus II.

Prerequisite/Corequisite: Grade of C or higher in Math 19500, or placement by the Department.

Grading Policy: WebWork/Written HW ($< 10\%$), perhaps close to 5% , Quizzes (15%) , Tests (35%), and Final (40%) according to departmental policy. Term grade is calculated as

Term Grade = WebWork/Written HW $\cdot X$ % + Test average $\cdot Y$ % + Quiz average $\cdot Z$ % + Final $\cdot$ 40%

Note: The **Written HW** is not mandatory; however, 60% of class work must be preserved, your choice.

Webwork Instruction: We will be using WebWork online open source homework system. There is no charge for this program. It is available at https://webwork.ccny.cuny.edu/webwork2/22_Sp391_H/. I recommend you bookmark this or put it in your favorites so you make sure to go to the correct web address. To login follow these steps:

1. https://webwork.ccny.cuny.edu/webwork2/22_Sp391_H/ .
2. Username: is your CCNY domain typed in **all lowercase letter** as in your **citymail userid and password.**
3. Password: is the one that goes with your Username as in your **citymail userid and password.**
4. Use only the part of your email that comes before the @ symbol. Again, it must be all lowercase. It will not work with Capital letters.
5. **Beware of autocomplete or automatic capitalizing**, especially if you use any hand-held device to log on.
6. you cannot change your userid or password on the system, or the email address you want it to use.
7. If you change your domain password on CCNY's site, then it will automatically change on Webwork.
8. Also NOTE that your passwords expire every 180 days, so you may suddenly be unable to logon after successfully using the system in the past. In that case, you must change your password by going to https://reset.ccny.cuny.edu/student/ and filling in the request form, or go to the Service Desk on the first floor of the Cohen Library in NAC 1/301 in order to be able to use the system again.

Exam Format:

- Final Exam will be a **comprehensive departmental group final** for all sections, **day** and **evening**.
- No **electronic devices** of any kind are **ALLOWED** during the exams.

Note: Please see the latest department handbook on what information to include your syllabus/ course information. If you have any question, please reach out to: cmahawa@ccny.cuny.edu

Important Dates: There is no classes in the following dates:

- Monday, 2/12/2024 College is closed.
- Monday, 2/19/2024 College is closed.
- Friday, 03/29 /2024 - Tuesday, 04/30/2024 No classes scheduled.
- Monday, 04/22 /2024 - Monday, 04/30/2024 Spring recess.
- Thursday - Wednesday 05/16/2024 -05/22/2024 Final Examination.

These are tentative Examination dates. They are subjected to change.

Test 1	September 27 - 29, 2023
Test 2	October 25 - November 2, 2023
Test 3	November 27 - 30 , 2023?
Quizzes*	every lecture
Final Exam (in person)	**TBD in December**

Quizzes*: Short quizzes should be given in every lecture. We will be using **Gradescope** to grade the quizzes since it is quick and effective.

Time	Sec	Topic to be covered	Problem
1	1.1	Functions and Their Graphs.	1-4,7,9,12,15,18, 24, 35, 40, 41,43,47-49, 66, 68,8, 85, 86
1	1.2	A catalog of Essential Functions.	1-4, 5,7, 9,12
1	1.3	New Function and Old functions.	1-3, 5, 6, 13, 17, 23,33,34,35,37,43,45,55, 57, 59
1	1.4	Exponential Functions.	1-3, 9, 13, 15, 17, 19, 29, 30
1	1.5	Inverse Functions and Logarithms.	2-8, 10,15,17,19, 20, 23,26, 30, 35, 41,44(b), 46,57,69
0.5	2.1	Tangent & Velocity Problem.	2, 5, 7
2	2.2	Limit of a Function.	3,4, 5,8,9, 2,22,27,39,44,50
1	2.3	Calculating Limits using Limit Laws	1,2, 3,7,10,14,18,19,22,25,32,34,39-42,44,52,53,61,62,67
1	2.4	The Precise Definition of a Limit.	1-4, 17, 18
1.5	2.5	Continuity	1,3,6,7,11,13,16-18,21-24,26,28,31,37,45,47-50,53,55-58,73
1.5	2.6	Limits Involving Infinity; Horizon Asy.	1,3,5,7,10,17,21-23,25,26,28,29,32,35,36,38-41,49,57,59,67
2	2.8	The Derivative as a Function.	1,3,21-32,39,41-44,49,65
1	3.1	Derivatives of Poly and Expon Fun.	3,8,11,14,17,19,25,31,33,34,37,41,53,59-63,75,85,86
2	3.2	Product Rules and Quotient Rules .	1,3-30,31,34,35,37,45,46,49,52,53,63*
1	3.3	Derivatives of Trigonometric Fun.	1,3,6,12,13,17,22,25,29,37,41,45,48,49,52,53,57,58,61,62
2	3.4	The Chain Rule.	8,10,13,14,19,23,25,27,29,33,37,41,43,53,58,68,69,71,73,84
1	3.5	Implicit Differentiation.	1, 4, 7, 9, 10, 14, 22, 34, 39, 51, 53, 59, 67, 68
2.5	3.6	Derivatives of Log and Inverse Trigonometic Fun.	3,5,9,11,13,17,21,27,29,35,38,39,45,47,49,56,58*,59,63,65,75
	A46	Derivatives of Inverse Function (**Appendix F**).	**Page 225:** 83-86
1	3.7	Rate of Change in Natural & Social Sci.	1,5,6,7,8,9,11, 35*
1.5	3.9	Related Rates.	1-7,9,12,15,17,25
1	3.10	Linearization and Differentials.	1-5,11,13,17,19,21,27,29,31-36,41,42,51,52
1	4.1	Maximum and Minimum Values.	1,2,3,5,7,11,17,19,27,31,35,42-44,51,53,55,59,66*
1	4.2	The Mean Value Theorem.	1,5,6,9,11,15,17,23,29,30,39
1	4.3	What Deriva Tell us about Graph Shape.	1,7-9,11,12,17,23,26,27,30,31,35,37,39,41,43,44,46,54,60,63,84
2	4.4	Indeterminate Forms & L'Hopital's Rule.	1-4,5,7,9,11,13,15,18,19,21,23,25,27,33,34,37,41,47,51,53,56,75*
2	4.5	Summary of Curve Sketching.	1-8, 11,13,15,21,23,25,27,29,31,34,37,45,51,52,55,67,71,76*
1	4.7	Optimization Problems.	1,3,4,7,8,11,14,18-21,25,26,41,81
1.5	4.9	Antiderivatives.	1,6,7,13,17,19,23,25,27,41,51,61,70,83
1	5.1	Area and Distance problems.	1-3,7-9,13,15-23, 25*
1	A36	Sigma Notation/Finite Sum (**Appendix E**).	1-10, 12,14,17,19,20, 22, 24,27,28,34,36,41,43,45,48-50
1	5.2	The Definite Integral.	1-8,11,14,19,21,23,25,27-34-36,39,41,43,46,52,57,59,61,62,67
1.5	5.3	The Fundamental Theorem of Calculus.	3-6,9,13,15,20,25,31,33,35,37,421,42,49,51,53,63,6771,73,75,77
1	5.4	Indefinite Integrals & Net Change Thm.	1,3,7,9,17,24,31,38,44,46,53,59,61,69
2.5	5.5	The Substitution Rule.	1-8,14,16,21-27,29,32,3537,39,45,51,59,65,70,75,77,84*,93*,98*
1	6.1	Areas Between Curves .	1-7,9,11,13,17,19,21,24,24,30,35,37,41,42,44,61,64*,65*,69*
49.		**Total hours**.	

Course Learning Outcomes (CLO):

After taking this course, the student should be able to:	Contributes to Departmental Learning Outcome(s):
1. Evaluate limits, including the use of L'Hopital'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. Apply methods of calculus to sketch curves.	a, b
5. Anti-differentiate algebraic and transcendental functions.	a, b, c, e1, e2
6. Approximate integrals by Riemann sums.	e1, e2, g
7. Evaluate elementary integrals using substitution.	a

Department Learning Outcomes (DLO):

(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 mathematical argument.

Student with Disability: Students with physical or emotional disabilities should contact the accessibility center in NAC 1/218, 212-650-5913 or `accessabilityexams@ccny.cuny.edu` if they are in need of accommodation. Student will take his/her exams to accessibility center or arrange with the instructor if students' accommodation are approved.

Academic Honesty: Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Students will face the administrative consequences when they are suspected of such plagiarism of any type .i.e, cheating ...etc. For more information refer to both CCNY and CUNY academic integrity policies at `https://www.ccny.cuny.edu/about/integrity`

Agreement of Content of this syllabus : By signing this document, you agree and acknowledge the content of this syllabus. I pledge that I have observed the CCNY honor code, and that I have neither given nor received unauthorized assistance during the examination. I also pledge that I read and understand this syllabus.

_____   _____

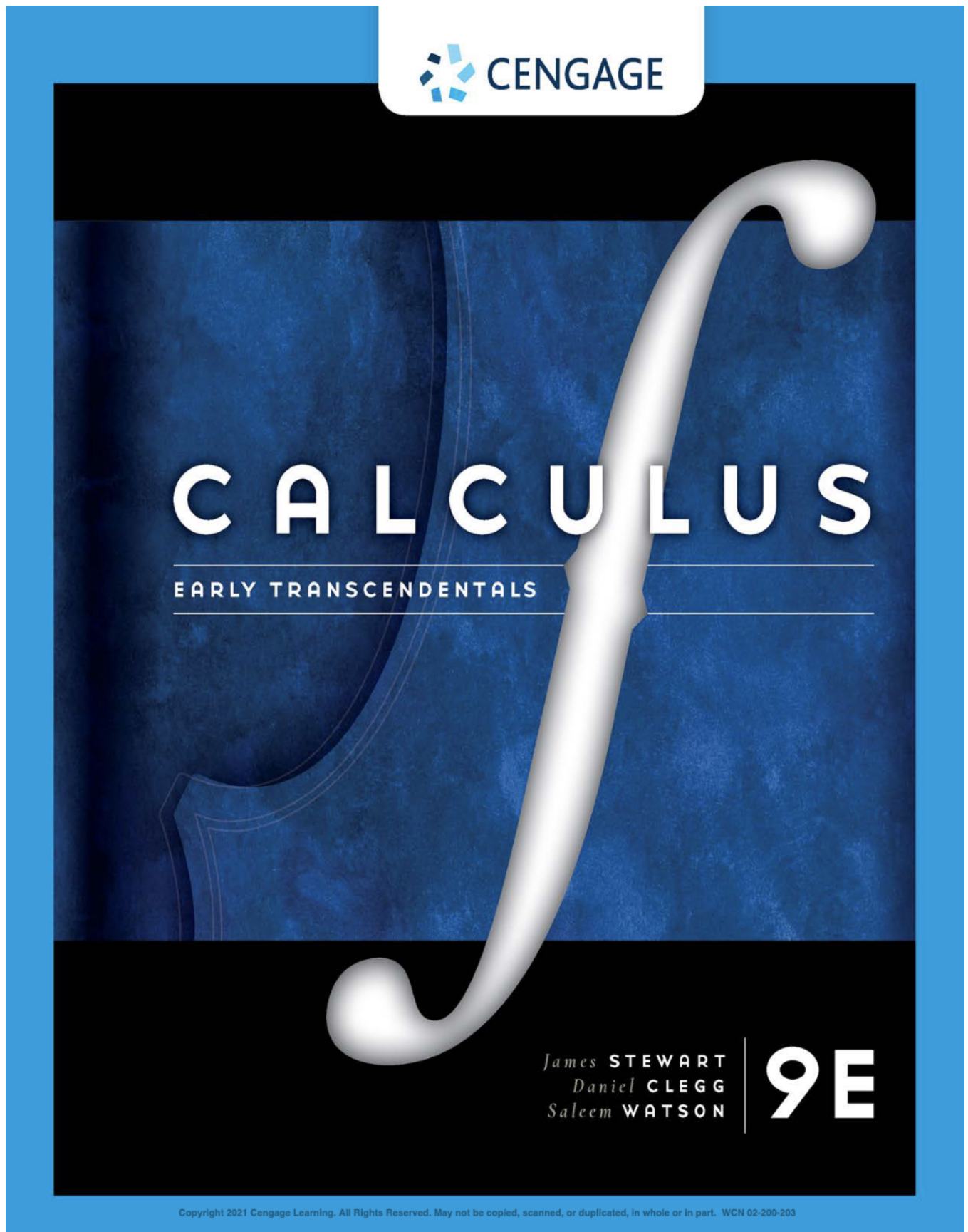Student Signature   Date

_____   _____

Instructor Signature   Date

Figure 1: Textbook