Department of Mathematics

Title of Course: Analytic Geometry & Calculus I   **Class hours: 4**
Course: MAT 301   **Lab hours: 2**
Semester: Summer 6W1 2023   **Instructor: Ivan Retamoso**
Credits: 4   **Tel#: 212 776 6432**
Website: **Office: S-642D**
https://openlab.bmcc.cuny.edu/calculus-mat-301-a081-summer-6w1-2023/   **Email: iretamoso@bmcc.cuny.edu**

MAT 301-A081 (8519) is a **"in person" course** which will run in BLACKBOARD.

We will meet **in person** on Monday, Tuesday, Wednesday, and Thursday, from 10:00 am to 12:00 pm at Fiterman 407. Additionally, you must attend **in person** MAPLE Lab sessions on Monday, Tuesday, Wednesday, and Thursday from 8:00 am to 9:40 am at Fiterman 410, these sessions will be led by our Maple TA.

Classes will start on Tuesday May 30.

You are expected to devote 20-26 hours per week for this **Calculus** course. Check your BMCC email and announcements in BLACKBOARD, at least twice a day, be updated. Assignments and Exams will be given in BLACKBOARD, so make sure you are able to sign into BLACKBOARD from day one.

In order to complete this course, you must do the following:

- **Take EXAM 1, EXAM 2, and FINAL EXAM in BLACKBOARD.**
- **Submit all Homework Assignments in WeBWorK.**
- **Submit all Maple Lab Assignments in BLACKBOARD.**
- **Go through all DESMOS activities in BLACKBOARD.**

My Office Hours: I will be available for Virtual Office Hours via ZOOM on Fridays from 6:00 pm to 7:30 pm, The ZOOM links will be posted in BLACKBOARD.

Course Description: An integrated course in analytic geometry and calculus applied to functions of a single variable. A study of functions; limits; continuity; related rates; differentiation of algebraic and transcendental functions; Rolle's Theorem; The Mean Value Theorem; Maxima and Minima; curve sketching; differentials; and introduction to integration.

MAT 301 has a computer laboratory component. Students utilize computer software such as graphing packages, a computer algebra system, and a mathematical word processor to complete laboratory assignments associated with their calculus course.

Prerequisites / Co-requisites: Precalculus (MAT 206) or the equivalent with departmental approval.

Student Learning Outcomes:

Course Student Learning Outcomes	Measurements
1. Students will be able to calculate the limit analytically and geometrically. They will use the limit to determine continuity.	1. Homework assignments and/or take home projects; Quizzes and/or Midterm Exams; Final Exam; Lab Projects.
2. Students will be able to use the concept of the limit to compute the derivative. Students will be able to calculate the derivative for algebraic and transcendental functions. Students will use implicit and explicit differentiation to solve applied problems.	2. Homework assignments and/or take home projects; Quizzes and/or Midterm Exams; Final Exam; Lab Projects
3. Students will be able to compute higher order derivatives and apply this to curve sketching and optimization problems.	3. Homework assignments and/or take home projects; Quizzes and/or Midterm Exams; Final Exam; Lab Projects.
4. Students will be able to use the Fundamental Theorem of Calculus to compute the definite integral.	4. Homework assignments and/or take home projects; Quizzes and/or Midterm Exams; Final Exam; Lab Projects.

General Education Outcomes and Assessment:

General Education Learning Outcomes	Measurements
Communication Skills - Students will be able to write, read, listen and speak critically and effectively.	Assignments and/or take home projects; exams and/or Midterm Exam; Final Exam and Lab Projects.
Quantitative Reasoning - Students will be able to use quantitative skills and the concepts and methods of mathematics to solve problems.	Assignments and/or take home projects; exams and/or Midterm Exam; Final Exam and Lab Projects.
Information & Technology Literacy - Students will be able to collect, evaluate and interpret information and effectively use information technologies.	Assignments and/or take home projects; exams and/or Midterm Exam; Final Exam and Lab Projects.

Free Tutoring:
For Help (Free Tutoring) with this course you can click the link below.
https://www.bmcc.cuny.edu/students/lrc/virtual-learning-center/

Calculator:

Scientific Calculator (Such as Texas Instrument model TI-30XIIS or similar) is needed for this course. As an alternative, you can use the following free DESMOS scientific calculator: www.desmos.com/scientific

Required Text: zero cost OER Textbook can be downloaded as a PDF file and read online or offline, by clicking the link below.
https://openstax.org/details/books/calculus-volume-1

Also, you can get the Textbook by downloading the free **OpenStax + SE** app.

For IOS (Apple) go to:
https://apps.apple.com/us/app/openstax-with-studyedge/id1473661166?book=calculus-volume-1

For Android go to:
https://play.google.com/store/apps/details?id=com.openstax.openstax&hl=en

Homework: We will use **WeBWorK** for homework assignments. This is a Free-Open Source Platform!
You can log into **WeBWorK by** clicking the link below:

http://webwork.bmcc.cuny.edu/webwork2/2023_Summer_MAT301_A081_Retamoso/

To log into **WeBWork**, if your name is: Adam Smith

your user Id is: asmith

your password is: your CUNY Id number.

Use of Technology:

Students will be using MAPLE, a computer algebra system which will help them visualize various concepts developed in class.

Final Grade computation:

Exam 1:	20%
Exam 2:	20%
DESMOS Activities:	5%
Homework (WeBWorK):	20%
MAPLE Assignments:	15%
Final Exam:	20%

Your Final Grade will be based on:

https://www.bmcc.cuny.edu/academics/policies/grading-policies/grading-system/

Outline of Topics

Syllabus

Academic Adjustments/Students with Disabilities:
Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities (Room N320; 220-8180). BMCC is committed to providing equal access to all programs and curricula to all students.

BMCC Policy Statement on Plagiarism:
Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure of how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's web site, www.bmcc.cuny.edu.