


MAC 2311(Calculus and Analytical Geometry I) Ref#5218
IN THIS CLASS LIES ARE NOT TOLERATED!! IN THIS CLASS YOU MUST BE HONORABLE AND LOYAL!!
IN THIS CLASS STUDENTS ARE PREPARED TO SERVE!!
REMEMBER... easy pays \$7.50. Live is actions and consequences

Course Modality:

MAC 2311 - 2 Calculus and Analytical Geometry 1
Miami Dade College | Summer 2023 | Lecture

Class Details			
Status	Open 	Course ID	202725
Class Number	5218	Offer Nbr	1
Session	Six Week - Second	Career	Undergraduate
Units	5 units	Dates	6/19/2023 - 7/28/2023
Instruction Mode	MDC Live	Grading	Graded
Class Components	Lecture Required	Location	*North Campus
		Campus	North Campus

Meeting Information			
Days & Times	Room	Instructor	Meeting Dates
TuTh 8:00AM - 1:30PM	TBA	Manuel Carames	06/19/2023 - 07/28/2023

Enrollment Information	
Enrollment Requirements	Requisites for MAC 2311: Prerequisites of (MAC 1106 and MAC 1114) or (MAC 1114 and MAC 1140) or MAC 1147 with a grade of "C" or higher.

MDC LIVE. Attendance is not required but recommended!
Lectures **WILL NOT be recorded. You will hear the classes through CANVAS.**

Link to Canvas training for you: <https://www.youtube.com/watch?v=Wd5eITWoNwo>
<https://community.canvaslms.com/t5/Student-Guide/tkb-p/student>

COURSE SYLLABUS: [mac2311Summer2023Ref5218](#)

Course Information

Class Number: MAC2311

Credit: 5

Term: Summer 2023

Term Dates: June 19 – July 28 / 2023

Class Date & Time: T, R 08:00 AM to 01:30 PM

Everything will be closed 07/26/2023 at 11:59 PM.

NO midTerm NEITHER finalExam!!!

Instructor Information

Name: Manuel Carames

Inbox: mcarames@mdc.edu (do not use other emails)

Phone: 305-237-1013

Very important NOTE. Please, READ IT!

You **MUST ACCESS** your HW and Exams **ONLY THROUGH CANVAS**, otherwise **YOU WON'T SEE YOUR GRADES!!**

You enroll in the course by clicking on the **Assignments** tab link in Canvas. The first time you click on a Canvas link, you will be prompted to either create a Pearson account, or to login to your existing account. This only happens the first time and is what connects your student's Pearson account and Canvas account, which allows for automatic grade return.

Every time thereafter, when you click on an assignment link in Canvas, it will go directly to the assignment, and the grade will automatically transfer to Canvas.

With all of the above being said, if a student does not follow the above directions, and instead goes directly to the myMathLab website to access an assignment, that grade will not automatically transfer,

and would need to be manually transferred **WHAT I WILL NOT DO!!**

Any student that needs assistance at any time can contact [Pearson Student Support](#) for immediate assistance.

I hope that helps.

Office Hours:

M, W, 06:00 PM 09:50 PM

T, R 03:00 PM to 04:00 PM

Response Policy: 24 hours Monday through Friday when the college is in session.

My Educational Philosophy:

Honor; Loyalty; Truthfulness; Decency; Hard Working; AND ...

Explain everything with the necessary rigor using 5 cents instead of 5 dollars words.

Some very important REFLEXIONS:

- 1. Join the Robotics Club. Be a problem solver!!**
- 2. Be cultured to be free. Jose Martí.**
- 3. A day will come when the false tolerance will be so intense that the intelligent will be prohibited from thinking so as not to offend the imbeciles. Dostoevsky.**
- 4. "I fear the day that technology will surpass our human interaction. The world will have a generation of idiots." Albert Einstein.**
- 5. You must fail, until you get right, that is how you cement learning.**
- 6. "Self-esteem comes from achievement and not for lax standards and false praise." Condoleezza Rice.**
- 7. "Opportunity is missed by most people because it is dressed in overalls and looks like work." Edison.**
- 8. Education: is living a few years of your life like most people won't, so that, you can spend the rest of your life like most people can't.**
- 9. and remember... life is actions and consequences.**

Course Description

This course includes topics in analytic geometry, limits, continuity, differentiation of algebraic and transcendental functions and their inverses, differentials, indeterminate forms and L'Hopital's Rule, introduction to integration and the fundamental theorem of calculus, basic rules of integration and integration by substitution, and applications of definite integrals and derivatives.

Prerequisites

MAC1106 and MAC1114, or MAC1140 and MAC1114, or MAC1147 with a grade of "C" or better or departmental permission. Fulfills Gordon Rule computational requirement

Course Competencies

Competency 1:

The student will demonstrate knowledge of limits by:

- a. Computing limits at a point and at infinity algebraically,*
- b. Finding limits using L'Hopital's Rule,*
- c. Applying the definition of continuity,*
- d. Determining where a function is continuous or discontinuous.*

Competency 2:

The student will demonstrate knowledge of differentiation by:

- a. Defining the derivative of a function as a limit,*
- b. Finding the derivative of a function using the definition,*
- c. Finding the equation of the line tangent to a curve at a point using a derivative,*
- d. Finding the rate of change of a function using a derivative,*
- e. Finding derivatives of polynomial, trigonometric, exponential, logarithmic, and hyperbolic functions using differentiation rules,*
- f. Finding derivatives using the chain rule,*

- g. Implicitly differentiating equations,**
- h. Computing higher order derivatives,**
- i. Determining maximum and minimum points of a function and intervals where it increases or decreases,**
- j. Determining points of inflection of a function and intervals where it is concave upward or concave downward,**
- k. Using the first and second derivative tests to find local extrema,**
- l. Applying Rolle's theorem and the mean value theorem,**
- m. Solving optimization problems,**
- n. Solving problems involving related rates.**

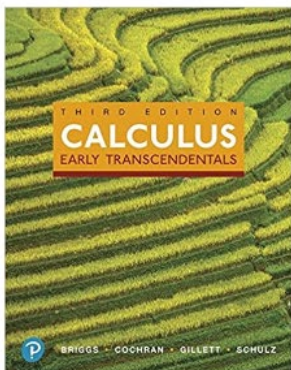
Competency 3: The student will demonstrate knowledge of integration by:

- a. Finding antiderivatives involving polynomial, trigonometric, inverse trigonometric, exponential, logarithmic, and hyperbolic functions,**
- b. Evaluating a definite integral as a limit of a Riemann sum,**
- c. Computing the average value of a function over an interval,**
- d. Computing definite integrals using the fundamental theorem of calculus,**
- e. Solving applied problems using definite integrals,**
- f. Finding indefinite integrals with a change of variables,**
- g. Finding the area or regions under and between curves,**
- h. Finding the volume of solids of revolution.**

Required Textbook and Materials

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Title: eBook - Calculus: Early Transcendentals



Author: Briggs, Cochran, Gillett & Schulz

Edition: 3rd

Publisher: Pearson

ISBN: 9780135904145

Course Content:

2 Limits

- 2.1 The Idea of Limits 38
- 2.2 Definitions of Limits 45
- 2.3 Techniques for Computing Limits 53
- 2.4 Infinite Limits 63
- 2.5 Limits at Infinity 72
- 2.6 Continuity 82

3 Derivatives

- 3.1 Introducing the Derivative 109
- 3.2 The Derivative as a Function 118
- 3.3 Rules of Differentiation 130
- 3.4 The Product and Quotient Rules 138
- 3.5 Derivatives of Trigonometric Functions 147
- 3.6 Derivatives as Rates of Change 155
- 3.7 The Chain Rule 168
- 3.8 Implicit Differentiation 177
- 3.9 Related Rates 184

4

Applications of the Derivative

- 4.1 Maxima and Minima 198
- 4.2 Mean Value Theorem 207
- 4.3 What Derivatives Tell Us 214
- 4.4 Graphing Functions 228
- 4.5 Optimization Problems 236
- 4.6 Linear Approximation and Differentials 247
- 4.7 L'Hôpital's Rule 257
- 4.9 Antiderivatives 273

5

Integration

- 5.1 Approximating Areas under Curves 287
- 5.2 Definite Integrals 302
- 5.3 Fundamental Theorem of Calculus 316
- 5.4 Working with Integrals 330
- 5.5 Substitution Rule 337

6

Applications of Integration

- 6.1 Velocity and Net Change 351
- 6.2 Regions Between Curves 364
- 6.3 Volume by Slicing 373
- 6.4 Volume by Shells 387

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Supplemental Textbook and/or Materials:

Create an account for free in "Mathematica"

Course Work Requirements

Homework and Exams.

Everything will be closed 07/26/2023 at 11:59 PM

Take HW as many times as you want. The system will record your best grade. Exams you can take once, and they are timed.

Grading

**Your final grade is a weighted grade: 40% HW, and 60% exams.
Do not ask me about your grade. CALCULATE IT.**

Grading Criteria

Grading Scheme | Letter Grade

> 85	A
75 - 80	B
65 -74	C
< 65	F

Food for Thoughts

**"Philosophy [nature] is written in that great book whichever is before our eyes -- I mean the universe -- but we cannot understand it if we do not first learn the language and grasp the symbols in which it is written. The book is written in mathematical language, and the symbols are triangles, circles and other geometrical figures, without whose help it is impossible to comprehend a single word of it; without which one wanders in vain through a dark labyrinth." Galileo Galilei.
The place of mathematics in life is determined by the fact that it permits one to translate an everyday intuitive approach to reality**

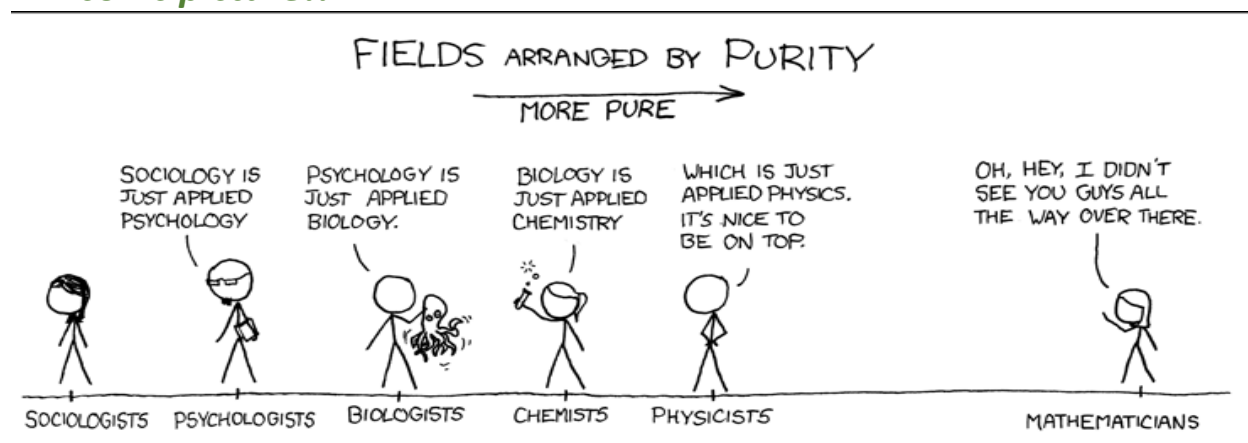
based on purely qualitative and hence approximate descriptions into language of exact definitions and formulas from which quantitative conclusion can be drawn.

So true it is that the scientific level of any discipline is determined by the extent to which it uses mathematics.

The real language of science is no at all elementary algebra or geometry. Higher mathematics plays a far greater role. It is no accident that the development of differential and integral calculus by

Newton was intimately bound up with his development of the foundations of theoretical (we can also say mathematical) physics. Newton saw the concepts of higher mathematics as a (literal!) translation of the basic concepts of mechanics into mathematical language.

An iconic picture!!



Miami Dade College's Learning Outcomes

This course addresses the following MDC learning outcomes:

Learning Outcome #1:

Communicate effectively using listening, speaking, reading, and writing skills.

Learning Outcome #2:

Use quantitative analytical skills to evaluate and process numerical data.

Learning Outcome #3:

Solve problems using critical and creative thinking and scientific reasoning.

Learning Outcome #6:

Create strategies that can be used to fulfill personal, civic, and social responsibilities. This outcome is heavily addressed. This outcome is

heavily reinforced in this course. I constantly teach that it is they personal, civic, and social responsibility to take education seriously by putting forth the effort needed for them to succeed. In this class, as in life, only you are responsible for your actions and the result of them. Do not put the blame on anyone other than yourself. One should not subscribe to the “Book of Excuses”. In truth, everyone has the same opportunity and should look for answers within themselves to find solutions to their own problems. Do not find excuses, FIND REASONS. Being respectful of others indicates you respect yourself. Do this by speaking intelligently, dressing appropriately, and admitting your weaknesses truthfully. Education makes you strong; it remains in your brain, and no one can take it away from you. Select a major that fulfills your personal goals but that also addresses society’s need to answer certain burning questions.

Learning Outcome #8:

Use computer and emerging technologies effectively.

Learning Outcome #10:

Describe how natural systems function and recognize the impact of humans on the environment.

**Miami Dade College Policies and Guidelines
Students' Rights and Responsibility Handbook**

This handbook provides you with the basic information you need to know as a student at Miami Dade College. Please review the Students' Rights and Responsibilities site to learn about policies addressing code of conduct, grade appeals, religious observations, services for students with special needs, and many other areas.

Academic Dishonesty

Please carefully review the Academic Dishonesty policies in the Students' Rights and Responsibilities site.

This site identifies "cheating on an examination" as one action included under academic dishonesty. In this course, you are expected to complete quizzes and exams independently and without access to the course's online content or your own study notes. Having multiple browser windows open, accessing previous quizzes or course readings, and using your course notes while taking a quiz or exam constitute cheating. The Canvas system records all course activities. Activity logs when you are taking quizzes/exams that show access to other course components makeup evidence of cheating and may cause a failing grade for the corresponding quiz or exam.

You may have access to content in completed quizzes/exams. Copying, photographing, or any form of duplicating content in any assessment violates the integrity of the assessment. Such action will be viewed as academic dishonesty and may result in a failing grade for the corresponding quiz or exam.

Plagiarism is another action identified as academic dishonesty. Presenting the work or ideas of someone else as one's own constitutes plagiarism, which is why students are always expected to cite their

sources. Through the use of tools such as Turnitin, non-original work can be easily identified; if not sourced, this constitutes evidence of plagiarism and may result in a failing grade for the corresponding assignment.

Course Withdrawal

After registering, students may change their schedules during the drop/add period. The dates for this period are listed on the Academic Calendar that may be found as a link on the Miami Dade College homepage.

Incomplete Grades

An Incomplete is given only where extenuating circumstances exist, such as documented medical problems or a death in the family, and is issued solely at the discretion of the instructor. If the instructor agrees to grant an Incomplete, a written agreement must be completed between the instructor and the student, specifying the coursework to be completed, in what manner, and by when. Failure to fulfill the terms of the contract by the end of the next major term will result in an "F" for the course. A student may not remove an Incomplete by registering in a subsequent term to re-take the course.

For more information on Incomplete grades, please refer to the Students' Rights and Responsibilities.

Class Activities - Recorded

Class lectures may be recorded and made available to students enrolled in the same class. Students who do not wish to be recorded, please contact the class instructor in the first week of class to discuss alternative arrangements.

Adding Photo to Your Canvas Profile

Students are highly encouraging to use photos taken within five years to reflect their current appearance when assigning their Canvas profile picture.

The photo should be a colored JPEG file with proper brightness, contrast, and exposure.

The background should not contain distracting objects.

It would be best to be the only subject in the photo with no other people in the focus or the background.

Photos should not include captions, watermarks, or image-distorting overlays and filters.

Students may be held accountable for posting offensive pictures or containing inappropriate content or images.

If the Canvas profile picture does not comply with these guidelines, Miami Dade College, course instructors, and LMS administrators have the right to remove profile pictures.

Hurricane and Other Natural Disasters

In the event of a hurricane or other disaster, the class follows the schedule established by the College for campus-based courses. Please visit the MDC website or call the MDC Hotline (305-237-7500) for situation updates.