MA-210-01-1: CALCULUS I
COURSE SYLLABUS – FALL 2021

Instructor:	Matthew Cochran
Email Address:	matthew.cochran@chaminade.edu
Office:	Henry Hall Office 123A
Office Phone:	739-8361
Course Time:	Tuesday and Thursday from 8:30 to 9:50. Wednesday from 9:30 to 10:20.
Course Room:	TBA
Prerequisites:	MA-110: Pre-Calculus or placement test
Required Text:	Larson and Edwards, Calculus of a Single Variable, 10th ed., Brooks/Cole, Belmont CA, 2013. ISBN-13: 978-1285060286 ISBN-10: 1285060288
Other Materials:	Scientific calculator

COURSE DESCRIPTION:
This is the first part of a three-semester sequence of differential and integral calculus. Major topics include limits and continuity, differentiation and integration of algebraic and trigonometric functions, and basic applications.

EVALUATIONS AND GRADING SCALE:

Exam 1	20%
Exam 2	20%
Exam 3	20%
Final	20%
Quizzes and Homework	20%

90%	–	100%	A
80%	–	90%	B
70%	–	80%	C
60%	–	70%	D
0%	–	60%	F

Incomplete grades (I) will be given in accordance with college regulations as outlined in the college catalog. Withdrawals (W) from the class are the responsibility of the student and deadlines are set by the college.

EXAMS:
There will be three examinations and a final as part of the requirements for the course. Material for exams will be drawn primarily from quizzes and homework assignments. Hence, the best way to review for an exam is to review previous quizzes and homework assignments.

Make-up exams will only be given under extenuating circumstances beyond the student's control. Persons missing an exam due to illness or injury must present a doctor's certificate. Make-up exams must be completed within one week of the scheduled exam date or on the day the student returns to school (whichever comes first). Scheduling is the responsibility of the student.

HOMEWORK AND QUIZZES:
To be successful in this course, it is essential that you complete all homework assignments. Be prepared to spend three hours or more on homework every week. If you are having trouble, get help from the instructor or your classmates. Do not fall behind.

A ten-minute quiz will be given during many classes. Material for the quizzes will be drawn from recent homework assignments. Hence, the best way to prepare for quizzes is to do homework. Quizzes may be given at the beginning of class, so show up on time. Make-up quizzes are not given.

ATTENDANCE:
Regular attendance is expected of all students. Read material prior to lecture. If a topic is still not clear after it has been discussed in class, ask questions. Time will be spent working through homework problems and reviewing for exams in addition to lecturing. You will work with partners in class. It is important that partners engage in discussion of their work and avoid working as isolated individuals.

STUDENT LEARNING OUTCOMES:
Upon successful completion of the course, students will demonstrate:

1. Gain understanding of the concept of limits
2. Gain understanding of the continuity of functions
3. Gain understanding of the concept of the derivative and its relation to the behavior of a function
4. Develop skills to compute derivatives, and demonstrate a comprehension of general rules for differentiation
5. Develop skills to use derivatives in critical point analysis, graph sketching, and optimization problems
6. Gain understanding of the concepts of indefinite and definite integration and the Fundamental Theorem of Calculus
7. Develop skills to calculate integrals using the substitution method when appropriate
8. Develop skills to solve applied problems using integrals

PROGRAM LEARNING OUTCOMES

Learning Outcomes for the Minor in Mathematics

1. Students will generalize and apply mathematical concepts that are integrated into disciplines or appear in everyday life.
2. Students will distinguish and apply mathematical perception and practical skills in logical thinking, carrying out deductive and inductive reasoning.
3. Students will utilize the more advanced mathematical knowledge and computational skills to the study of other disciplines, numerically, analytically and graphically.
4. Where relevant, students will be able to initiate the growth of their own mathematical maturity to undertake higher-level studies in mathematics and related fields.

MARIANIST VALUES:

The Natural Sciences Division provides an *integral, quality education:* sophisticated integrative course content taught by experienced, dedicated, and well-educated instructors.

- We *educate in family spirit* – every classroom is an Ohana and you can expect to be respected yet challenged in an environment that is supportive, inclusively by instructors who take the time to personally get to know and care for you.
- We e*ducate for service, justice and peace,* since many of the most pressing global issues (climate change, health inequity, poverty, justice) are those which science and technology investigate, establish ethical parameters for, and offer solutions to.
- We *educate for adaptation and change.* In science and technology, the only constant is change. Data, techniques, technologies, questions, interpretations and ethical landscapes are constantly evolving, and we teach students to thrive on this dynamic uncertainty.

The study of science and technology can be formative, exploring human creativity and potential in the development of technologies and scientific solutions, the opportunity to engage in the stewardship of the natural world, and the opportunity to promote social justice. We provide opportunities to engage with the problems that face Hawai‘i and the Pacific region through the Natural Sciences curriculum, in particular, those centered around severe challenges in health, poverty, environmental resilience, and erosion of traditional culture. The Marianist Educational Values relate to Native Hawaiian ideas of *mana, na’auao, ohana,* aloha and aina. We intend for our Natural Sciences programs to be culturally-sustaining, rooted in our Hawaiian place, and centered on core values of *Maiau*, be neat, prepared, careful in all we do; *Makawalu,* demonstrate foresight and planning; ‘*Ai,* sustain mind and body; *Pa‘a Na‘au,* learn deeply.

TITLE IX COMPLIANCE:

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

DISABILITY ACCESS:
If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the Counseling Center by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Counseling Center at (808) 735-4845 for further information (counselingcenter@chaminade.edu).

MUSIC DEVICES AND MOBILE PHONES:
Unless specifically permitted by your instructor, use of music devices and mobile phones is prohibited during all Natural Science and Mathematics classes at Chaminade, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class.

WEEKLY SCHEDULE:

Week	Date	L#	Lecture Topic	Reading
1	Aug 24	1	Course Intro; Review	
	Aug 25	2	Preview of calculus	1.1
	Aug 26	3	Finding limits graphically and numerically	1.2
2	Aug 31	4	Finding limits analytically	1.3
	Sep 01	5	Practice/activity	
	Sep 02	6	Continuity	1.4
3	Sep 07	7	Infinite limits	1.5
	Sep 08	8	Review	
	Sep 09	**E1**	**EXAM 1 – Chapter 1**	
4	Sep 14	9	Derivative and slope	2.1
	Sep 15	10	Basic differentiation rules	2.2
	Sep 16	11	Product rule	2.3
5	Sep 21	12	Quotient rule	2.3
	Sep 22	13	Practice/activity	
	Sep 23	14	Chain rule	2.4
6	Sep 28	15	Chain rule	2.4
	Sep 29	16	Practice/activity	
	Sep 30	17	Implicit differentiation	2.5
7	Oct 05	18	Related rates	2.6
	Oct 06	19	Related rates	2.6
	Oct 07	20	Review	
8	Oct 12	**E2**	**EXAM 2 – Chapter 2**	
	Oct 13	21	Extrema	3.1
	Oct 14	22	First derivative test	3.3
9	Oct 19	23	Second derivative test	3.4
	Oct 20	24	Practice/activity	
	Oct 21	25	Limits at infinity	3.5
10	Oct 26	26	Curve sketching	3.6
	Oct 27	27	Optimization problems	3.7
	Oct 28	28	Optimization problems	3.7
11	Nov 02	29	Differentials	3.9
	Nov 03	30	Review	
	Nov 04	**E3**	**EXAM 3 – Chapter 3**	
12	Nov 09	31	Antiderivatives	4.1
	Nov 10	32	Practice/activity	
	Nov 11	**H1**	**Veterans Day – No Class**	
13	Nov 16	33	Area	4.2
	Nov 17	34	Area	4.2
	Nov 18	35	Riemann sums	4.3
14	Nov 23	36	The fundamental theorem of calculus	4.4
	Nov 24	37	Practice/activity	
	Nov 25	**H2**	**Thanksgiving Recess – No Class**	
15	Nov 30	38	Substitution	4.5
	Dec 01	39	Numerical integration	4.6
	Dec 02	40	Review for final	
Finals	Tuesday	**FE**	**FINAL 8:30 – 10:30**	