![Chaminade University of Honolulu logo]

MA-210-02-1: CALCULUS I
COURSE SYLLABUS – SPRING 2021

Instructor:	Matthew Cochran
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Office:	Henry Hall Office 123A
Office Phone:	739-8361
Course Time:	Tuesday and Thursday from 11:30 to 12:50. Monday from 1:30 to 2:20.
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 Hawaiʻi 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, naʻauao, 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; *ʻAi,* sustain mind and body; *Paʻa Naʻau,* 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	Feb 01	1	Introduction; Review	
	Feb 02	2	Preview of calculus	1.1
	Feb 04	3	Finding limits graphically and numerically	1.2
2	Feb 08	4	Finding limits analytically	1.3
	Feb 09	5	Finding limits analytically	1.3
	Feb 11	6	Continuity	1.4
3	Feb 15	H1	**Presidents' Day**	
	Feb 16	7	Continuity	1.4
	Feb 18	8	Infinite limits	1.5
4	Feb 22	E1	**EXAM 1 – Chapter 1**	
	Feb 23	9	Derivative and slope	2.1
	Feb 25	10	Basic differentiation rules	2.2
5	Mar 01	11	Activity	
	Mar 02	12	Product rule; Quotient rule	2.3
	Mar 04	13	Chain rule	2.4
6	Mar 08	14	Activity	
	Mar 09	15	Chain rule	2.4
	Mar 11	16	Implicit differentiation	2.5
7	Mar 15	17	Activity	
	Mar 16	18	Related rates	2.6
	Mar 18	19	Related rates	2.6
8	Mar 22	E2	**EXAM 2 – Chapter 2**	
	Mar 23	20	Extrema	3.1
	Mar 25	21	First derivative test	3.3
9	Mar 29	22	Activity	
	Mar 30	23	First derivative test	3.3
	Apr 01	24	Second derivative test	3.4
10	Apr 05	25	Activity	
	Apr 06	26	Limits at infinity	3.5
	Apr 08	27	Curve sketching	3.6
11	Apr 12	28	Activity	
	Apr 13	29	Optimization problems	3.7
	Apr 15	30	Optimization problems	3.7
12	Apr 19	E3	**EXAM 3 – Chapter 3**	
	Apr 20	31	Antiderivatives	4.1
	Apr 22	32	Area	4.2
13	Apr 26	33	Activity	
	Apr 27	34	Area	4.2
	Apr 29	35	Riemann sums	4.3
14	May 03	36	Activity	
	May 04	37	The fundamental theorem of calculus	4.4
	May 06	38	Substitution	4.5
15	May 10	39	Substitution	4.5
	May 11	40	Numerical integration	4.6
	May 13	41	Review for final	
		FE	**FINAL EXAM**	