Math 174: Calculus II (4.0 units)

Time & Place: 8:30 - 9:25 MWF in RLC 106 and

(Lab) 7:25 - 9:10 T in LW 213

Instructor: Dr. Catherine Crockett

email: catherinecrockett@pointloma.edu

office phone: 619-849-2723

Office Rohr Science, Room 226

Office hours: MWF 11-12, MW 1-2:30, TTH 3-4:30 or by appointment

Important Dates:	**Exam 1: February 2, (Friday) 8:30-9:25**
	Exam 2: March 3, (Friday) 8:30-9:25
	Exam 3: March 31, (Friday) 8:30-9:25
	Final Exam (comprehensive): May 1 (Monday) 7:30-10:00 am

Text: *Calculus* by James Stewart 8th edition

Needed Supplies: A scientific calculator.

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Department Mission

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

COURSE DESCRIPTION

A continuation of Calculus I supported by the use of computer graphics and a symbolic computer algebra system (Maxima). Topics will include: methods of integration, sequences series, elementary differential equations, polar coordinates and parametric equations.
Prerequisite(s): MTH 144 or MTH 164 or equivalent.

LEARNING OUTCOMES

- Students will be able to demonstrate facility with analytical concepts.
- Students will be able to demonstrate facility with algebraic structures.
- Students will be able to use technology to solve problems.
- Students will be able to speak about their work with precision, clarity and organization.
- Students will be able to write about their work with precision, clarity and organization.
- Students will collaborate effectively in teams.
- Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.
- Students will be able to gather relevant information, examine information and form a conclusion based on that information.
- Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

ASSESSMENT AND GRADING

Grades for the course will be based on:

Exams (3 at 150 points each)	450 points
Homework	150 points
Lab Grade	150 points
Final exam (comprehensive)	250 points
Total:	1,000 points

Grading Scale: Approximate minimal percentages required to obtain a given grade are:

Grades in percentages

	A	B	C	D	F
+		[87.5,90)	[77.5, 80)	[67.5, 70)	[0,60)
	[92.5,100]	[82.5,87.5)	[72.5, 77.5)	[62.5,67.5)	
-	[90, 92.5)	[80, 82.5)	[70, 72.5)	[60, 62.5)	

*A percentage score lower than 60.0% will result in a course grade of F. Failure to pass at least one of the three exams or the final exam will result in a course grade of F regardless of all other grade components.

Homework (15%): Homework will be assigned every class meeting. All homework assigned in a week will be due **at the start of class** the next Wednesday. A homework assignment is late if it is not received at the start of the class on the due date. No late homework will be accepted except by prior arrangement (with me) or with a documented emergency. However, the two lowest homework scores will be dropped.

The object of the homework is to learn how to do the problems so there should be calculations on your homework using the terminology and methods of the class and not just an answer. Please be sure that your homework is stapled together and the problems are in order. Homework will be scored on a combination of completeness (with work shown) and correctness. A random selection (the same for all people) of the problems will be graded on any homework assignment

Exams (15% each): There are three in-class exams. If you do not take an exam you will receive a zero for it. Late exams may be taken only by prior arrangement with me or a well-documented emergency beyond your control. The examination schedule is included in the daily schedule. I do not intend to accept excuses such as poor communication with parents, benefactors, sport team sponsors and/or travel agents.

Lab (15%): The lab grade consists of weekly reports (30%), one lab mid-term (30%) and a lab final exam (40%). Lab work will be assigned every lab meeting and will be due at the start of the next lab meeting. A lab report is late if it is not received prior to the start of lab on the due date. Late reports will not be accepted; however, the lowest lab score will be dropped. Please be sure that your lab reports are organized, coherent and readable. Lab reports will be scored on a combination of completeness and correctness. A random selection (the same for all people) of the portions of the lab will be graded an any lab report.

Final Exam (25%): The final is **comprehensive and is given on Monday, May 1 7:30 to 10:00 am**. The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor.

Class Enrollment: It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Side Note: Turn off any cell phone, pager or things that make noise while you are in class. Also, do not text or work on other classes while in class -to do so is disrespectful to your classmates and me. You may be asked to leave the class for such behavior, resulting in an absence.

General Advice:

You learn mathematics by doing it yourself. You should expect to spend approximately two hours outside of class for every one hour in class working on homework and going over concepts. When doing homework, please note it is normal to not be able to do every problem correct on the first attempt. Do not be discouraged, instead seek help.

For information about the class, homework assignments, handouts or grades, please log onto canvas.pointloma.edu. There you will find all of this class information. Please let me know if you can't access the class information or have any questions.

Sources of Help:

1. Me. If you have questions, ask me. See my office hours or email catherinecrockett@pointloma.edu
2. Other classmates. Form study groups! Work together!
3. The MLC (in Rohr science room 230)- schedule posted outside the room.

University Policies:

FINAL EXAMINATION POLICY

The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. This schedule can be found on the university website and in the course calendar. No requests for early examinations will be approved. Only in the case that a student is required to take three exams during the same day of finals week, is an instructor authorized to consider changing the exam date and time for that particular student.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

Credit Hour

In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for a 4-unit class delivered over 15 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See Academic Policies for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

If you have a diagnosed disability, please contact PLNU's Disability Resource Center (DRC) within the first two weeks of class to demonstrate need and to register for accommodation by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. See Disability Resource Center for additional information.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Class_Attendance in the Undergraduate Academic Catalog.

Course Schedule:

Please note this schedule is tentative. Any changes will be announced.

week	Monday	Tuesday	Wednesday	Thursday	Friday
1 1/9- 1/13	1/9 No class	1/10 Monday schedule Introduction, Review	1/11 6.1: Inverse Functions	1/12	1/13 6.2: Exponential functions and their derivatives
2 1/16- 1/20	1/16 No Class MLK	1/17 Lab #1	1/18 6.3: Logarithmic Functions	1/19	1/20 6.4: Derivatives of Logarithmic functions
3 1/23- 1/27	1/23 6.5: Exponential Growth and Decay	1/24 Lab #2	1/25 6.6: Inverse Trigonometric functions	1/26	1/27 6.7: Hyperbolic functions
4 1/30- 2/3	1/30 6.8: Indeterminate Forms and L'Hospital's rule	1/31 Lab #3	2/1 7.1: Integration by parts	2/2	2/3 7.2: Trigonometric integrals
5 2/6- 2/10	2/6 7.3: Trigonometric Substitution	2/7 Lab #4	2/8 7.4: Integration of rational functions by partial fractions.	2/9	2/10 **Exam #1**
6 2/13- 2/17	2/13 7.7: Approximate Integration	2/14 Lab #5	2/15 8.1: Arc Length	2/16	2/17 8.2: Area of a surface of revolution
7 2/20- 2/24	2/20 8.3 Applications to Physics and Engineering	2/21 Review	2/22 8.4: Applications to Economics and Biology	2/23	2/24 9.1: Modeling with Differential equations

8 2/27- 3/3	2/27 9.2: Direction Fields and Euler's method	2/28 **Lab Exam**	3/1 9.3: Separable Equations &	3/2	3/3 **Exam #2**
Spring Break- no classes					
9 3/13- 3/17	3/13 9.4: models for Population growth	3/14 Lab #6	3/15 9.5: Linear Equations	3/16	3/17 9.6: Predator-Prey systems
10 3/20- 3/24	3/20 10.1: Curves Defined by parametric equations	3/21 Lab #7	3/22 10.2: Calculus with Parametric Curves	3/23	3/24 10.3: Polar Coordinates
11 3/27- 3/31	3/27 10.4: Area and Lengths in Polar Coordinates	3/28 Lab #8	3/29 10.4: Area and Lengths in Polar Coordinates	3/30	3/31 **Exam #3**
12 4/3- 4/7	4/3 11.1: Sequences	4/4 Lab #9	4/5 11.2: Series	4/6	4/7 11.3: The Integral Test and the Estimates of Sums 11.4: The Comparison Tests
13 4/10- 4/14	4/10 11.5: Alternating Series	4/11 Lab #10	4/12 11.6: Absolutes Convergence and Raito and Root Tests 11.7: Strategy for Testing Series	4/13 Easter Break No class	4/14 Easter Break No class
14 4/17- 4/21	4/17 Easter Break No class	4/18 Review	4/19 11.8: Power Series	4/20	4/21 11.9: Representations of Functions as Power series
15 4/24- 4/28	4/24 11.10: Taylor and Maclaurin Series	4/25 **Lab Final Exam**	4/26 11.11: Applications of Taylor Polynomials	4/27	4/28 Review
Finals week 5/1- 5/5	5/1 **Final Exam** **7:30 to 10:00 am.**	5/2	5/3	5/4	5/5