Math 174 – Calculus II

(4 Semester Hours)

Point Loma Nazarene University – Spring 2016

Time and Place:	Class:	MWF	8:30-9:25 a.m.	in RLC 103
	Lab:	T	7:25-9:10 a.m.	in LW 213

Instructor: Professor Greg Crow

Phone Number: 849-2604

Office Number: Rohr Science 220

Office Hours (in RS216): As posted in Canvas (with a paper sign-up sheet beside my office door).

My email is **gcrow@pointloma.edu**. I will be checking this on a regular basis (between 8:00am and 5:00pm) and this is the most reliable way to reach me other than office hours.

Textbook: *Calculus* by James Stewart (Cengage, 8th edition)

Needed Supplies: Scientific calculator

Catalog Course Description:
A continuation of Calculus I supported by the use of computer graphics and a symbolic computer algebra system. Methods of integration, sequences, series, elementary differential equations, polar coordinates and parametric equations.
Prerequisite(s): MTH 144 or MTH 164.

Learning Outcomes for this Course:

1. Students will be able to demonstrate facility with analytical concepts.
2. Students will be able to demonstrate facility with algebraic structures.
3. Students will be able to use technology to solve problems.
4. Students will be able to speak about their work with precision, clarity and organization.
5. Students will be able to write about their work with precision, clarity and organization.
6. Students will collaborate effectively in teams.
7. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.
8. Students will be able to gather relevant information, examine information and form a conclusion based on that information.
9. 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.

Course Philosophy:
Mathematics requires active participation. Participation means: asking questions, making conjectures and checking them, providing solutions to problems, sharing ideas with classmates.

Grading:
Grades for the course will be based on:

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

Grading Scale:
Course grades will be assigned according to the following scale:

	Grading Scale in percentages			
	A	**B**	**C**	**D**
+		(87.5, 90.0)	(77.5, 80.0)	(67.5, 70.0)
	[92.5, 100]	[82.5, 87.5]	[72.5, 77.5]	[62.5, 67.5]
-	[90.0, 92.5)	[80.0, 82.5)	[70.0, 72.5)	[60.0, 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 mid-term 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 and will be due at the start of the last class day of the following week. A homework assignment is late if it is not received at the start of class on the due date. Habitually late homework (more than two) will not be accepted; however the two lowest homework scores will be dropped. Please be sure that your homework is stapled together and the problems are in order. Homework will be scored on a combination of completeness and correctness. A random selection (the same for all people) of the problems will be graded on any homework assignment. No homework will be accepted for any reason whatsoever after 4:00 p.m. on April 29th, 2016.

Lab (15%): The lab grade consists of weekly lab reports (30%), one lab mid-term exam (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. Habitually late reports (more than two) 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 on any lab report.

Exams (15% each) and Final Exam (25%): Tests and the Final Exam will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class.

No examination shall be missed without prior consent by me or a well documented emergency beyond your control. A score of zero will be assigned for an examination that is missed without prior consent 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.

Final Exam Date and Time:
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. 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 change the exam date and time for that particular student.

The Final Exam is COMPREHENSIVE
Friday, May 6th, 2016 from 7:30-10:00 a.m.

Cell Phones:
Turn off any cell phone, pager or things that are distracting while you are in class. Also, do not text or work on other classes while in class (to do so is disrespectful to me and your classmates) and it is not the best use of class time.

General Advice:
The key to success in this class is to attend lectures regularly and do your homework. 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.

Sources of Help:
1. Me. If you have questions, ask me. See office hours.
2. Other classmates. Form study groups! Work together!

University Mission:
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.

Attendance:
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 in which a student is registered is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements to be met. There are no allowed or excused absences except as approved in writing by the Provost for specific students participating in certain university-sanctioned activities. Excused absences still count toward the 10%-20% limits, but allow students to make up work, quizzes, or tests missed as a result of a university-sanctioned activity. Activities of a unique nature, such as labs or other activities identified clearly on the syllabus, cannot be made up except in rare instances when instructors have given advanced, written approval for doing so. Whenever the number of accumulated absences in a class, for any cause, exceeds ten (10) percent of the total number of class meetings, the faculty member should send an e-mail to the student and the Vice Provost for Academic Administration (VPAA) warning of attendance jeopardy. If more than twenty (20) percent of the total number of class meetings is reported as missed, the faculty member or VPAA may initiate the student's de-enrollment from the course without further advanced notice to the student. If the date of de-enrollment is past the last date to withdraw from a class, the student will be assigned a grade of W or WF consistent with university policy in the Grading section of the catalog. There are no refunds for courses where a de-enrollment was processed. For more details see the PLNU catalog: http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Class_Attendance

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.

Academic Accommodations:
While all students are expected to meet the minimum academic standards for completion of their courses as established by the instructors, students with special needs may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Students can also reach the Disability Resource Center by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. Once the student files documentation, the Disability Resource Center contacts the student's instructors and provides written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the university in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with special needs and guarantees all qualified students equal access to the benefits of PLNU programs and activities. For more details see the PLNU catalog:
http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Accommodations

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

Academic Honesty:
The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Any violation of the university's commitment is a serious affront to the very nature of Point Loma's mission and purpose. Violations of academic honesty include cheating, plagiarism, falsification, aiding academic dishonesty, and malicious interference. The details of PLNU's meaning of each of these words can be found in the PLNU catalog at:
http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Honesty

A student remains responsible for the academic honesty of work submitted in PLNU courses and the consequences of academic dishonesty beyond receipt of the final grade in the class and beyond the awarding of the diploma. Ignorance of these catalog policies will not be considered a valid excuse or defense. Students may not withdraw from a course as a response to a consequence.

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic dishonesty (http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Honesty).

Copyright Protected Materials:
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.

Spring 2016

Class Schedule:

	Sun.	Monday	Tuesday	Wednesday	Th.	Friday	Sat.
January	3	4	5	6	7	8	9
	10	11 New Student Orientation	12 Introduction, Review (Monday Schedule)	13 6.1 Inverse Functions	14	15 6.2 Exponential Functions and Their Derivatives	16
	17	18 **Martin Luther King Jr. Day (No Classes)**	19 Lab 1	20 6.3 Logarithmic Functions	21	22 6.4 Derivatives of Logarithmic Functions	23
	24	25 6.5 Exponential Growth and Decay	26 Lab 2	27 6.6 Inverse Trigonometric Functions	8	29 6.7 Hyperbolic Functions	30
	31	1 6.8 Indeterminate Forms and l'Hospital's Rule **Spiritual**	2 Lab 3 _____	3 7.1 Integration by Parts **Renewal**	4	5 7.2 Trigonometric Integrals **Week**	6
February	7	8 7.3 Trigonometric Substitution	9 Lab 4	10 **Exam 1**	11	12 7.4 Integration of Rational Functions by Partial Fractions	13
	14	15 7.7 Approximate Integration	16 Lab 5	17 8.1 Arc Length	18	19 8.2 Area of a Surface of Revolution	20
	21	22 8.3 Applications to Physics and Engineering	23 Review	24 8.4 Applications to Economics and Biology	25	26 9.1 Modeling with Differential Equations	27
	28	29 9.2 Direction Fields and Euler's Method	1 Lab Exam	2 9.3 Separable Equations	3	4 **Exam 2**	5
March	6	7 **Spring**	8 _____	9 **Break**	10 —	11 **Week**	12
	13	14 9.4 Models for Population Growth	15 Lab 6	16 9.5 Linear Equations	17	18 9.6 Predator-Prey Systems	19
	20	21 10.1 Curves Defined by Parametric Equations	22 Lab 7	23 10.2 Calculus with Parametric Curves	24	25 Easter Recess	26
	27	28 Easter Recess	29 Lab 8	30 10.3 Polar Coordinates	31	1 10.4 Areas and Lengths in Polar Coordinates	2
April	3	4 10.4 Areas and Lengths in Polar Coordinates	5 Lab 9	6 **Exam 3**	7	8 11.1 Sequences	9
	10	11 11.2 Series	12 Lab 10	13 11.3 The Integral Test and Estimates of Sums 11.4 The Comparison Tests	14	15 11.5 Alternating Series	16
	17	18 11.6 Absolute Convergence and the Ratio and Root Tests 11.7 Strategy for Testing Series	19 Review	20 11.8 Power Series	21	22 11.9 Representations of Functions as Power Series	23
	24	25 11.10 Taylor and Maclaurin Series	26 Lab Final Exam	27 11.11 Applications of Taylor Polynomials	28	29 Review	30
May	1	2	3	4	5	6 **Comprehensive Final Exam 7:30-10:00 a.m.**	7