

## Syllabus

### Calculus for Biological Sciences (Math 105)

**Professor:** Dr. Ken Owens

**Office Hours:** MWF 2:00-2:50 pm or by appointment

**Phone:** 826-4249

**email:** [kdo10@humboldt.edu](mailto:kdo10@humboldt.edu)

**Required Text:** *“Calculus for the Life Sciences” by Greenwell, Ritchey and Lial.*

**Required Calculator:** A calculator with a computer algebra system capable of doing calculus such as the TI 89, Casio Algebra FX2.0 or the HP 48G. Six of these calculators are available for rent in the math department beginning August 25<sup>th</sup> 8:30-11:30.

**Course description:** By using the secrets of calculus we can model changes in the world around us. However to unlock these secrets we need one new idea and this idea eluded western science for more than 2000 years. In our studies, we will use both technology and traditional techniques to uncover many of calculus' secrets. We will cover approximately one section of the text per lecture. So, plan on spending at least 2 hours per day six days per week on this course reading the text and doing homework problems. As questions come to mind, bring them to class or my office hours for discussion.

**Homework:** You will be expected to read the text material for the upcoming lesson before class and do the assigned problems. Homework problems will be assigned each day in-class and are due the following class meeting. Homework answers should be checked by the student with the solution manual and any questions should be discussed in class or in my office hours. Homework must be labeled with the section number and your name or **I will not grade it**. On each homework assignment, you will receive credit/no-credit and late homework will receive a no-credit grade.

**Teaching Methodology:** Learning calculus is like learning a foreign language. As your instructor I will explain the fundamentals and demonstrate how calculus works but it is up to you to practice, practice and practice. Just like learning a foreign language, you must learn to read, write and speak calculus by daily practice.

<b>Grading:</b>	Homework	20%
	Midterms	60%
	Final	20%

**It is your responsibility to take all scheduled exams. (See attached schedule.)** If you can't make an exam, the instructor **must** be notified as soon as you become aware of the situation and it is entirely up to his discretion as to whether to grant a make-up. Keep all of your returned assignments; it is your responsibility to track your progress.

If for any reason you are still on my class list at the end of the semester and have not completed the course work, I will assign you the grade of unofficial withdrawal UW. For grade point purposes a UW is equivalent to an F.

If you decide to drop, **it is your responsibility to do the paper work** to get yourself removed from my class list so that I don't have to assign you a grade.

Finally, If you are in good standing in the course and something unexpected happens and you can't finish the class, you may request an incomplete. This must be done in writing explaining your situation. Final grades will be available on the web shortly after the final and I will not send them to you otherwise.

**Tutoring Help:** There is a great deal of tutoring help available please see the following web site for more information. <http://www.humboldt.edu/~lit1/math99.html>

**Equal Access:** If anyone needs special accommodations due to a disability, please see me in my office hours and arrangements will be made.

**Academic Honesty:** I have a zero tolerance policy on plagiarism and cheating. At the discretion of the instructor, this type of activity may lead to failure on the compromised assignment or in the course.

**Math 105 Tentative Daily Schedule**

1	Monday, August 23	1.1, 1.2: Lines And Least Squares
2	Wednesday, August 25	1.3, 1.4, 1.5: Functions In Biology
3	Friday, August 27	2.1, 2.2: Exponentials And Logarithms
4	Monday, August 30	2.3: Exponential Growth Models
5	Wednesday, September 1	3.1: Limits
6	Friday, September 3	3.2: Continuity
	Monday September 6	Labor Day: No Class
7	Wednesday, September 8	3.3: Rates Of Change
8	Friday, September 10	3.4: Definition Of The Derivative
9	Monday, September 13	3.5: Graphical Differentiation
10	Wednesday, September 15	Review
<b>11</b>	<b>Friday, Sept. 17 in class</b>	<b>Midterm Exam 1</b>
12	Monday, September 20	4.1: Power And Sum Rules
13	Wednesday, September 22	4.2: Product And Quotient Rule
14	Friday, September 24	4.3: Chain Rule
15	Monday, September 27	4.3: Chain Rule
16	Wednesday, September 29	4.4: Derivatives Of Exponential Functions
17	Friday, October 1	4.5: Derivatives Of Logarithmic Functions
18	Monday, October 4	4.6: Derivatives Of Trig Functions
19	Wednesday, October 6	5.1: Increasing And Decreasing
20	Friday, October 8	5.2: Relative Extrema
21	Monday, October 11	5.3: Higher Derivatives
22	Wednesday, October 13	Review
<b>23</b>	<b>Friday, October 15 in class</b>	<b>Midterm Exam 2</b>
24	Monday, October 18	6.1: Absolute Extrema
25	Wednesday, October 20	6.2: Maximization
26	Friday, October 22	7.1: Anti Derivatives
27	Monday, October 25	7.2: Substitution
28	Wednesday, October 27	7.2: Substitution
29	Friday, October 29	7.3: Area And Definite Integral
30	Monday, November 1	7.4: Fundamental Theorem Of Calculus
31	Wednesday, November 3	8.1: Numerical Integration With Technology
32	Friday, November 5	8.3: Volume by Integration
33	Monday, November 8	8.4: Improper Integrals
34	Wednesday, November 10	Review
<b>35</b>	<b>Friday, Nov. 12 in class</b>	<b>Midterm Exam 3</b>
36	Monday, November 15	14.1: Sequences
37	Wednesday, November 17	14.1: Sequences
38	Friday, November 19	14.2: Equilibrium Points
	22-26	Thanksgiving: No Class
39	Monday, November 29	14.2: Equilibrium Points
40	Wednesday, December 1	14.3: Stability
41	Friday, December 3	14.3: Stability
42	Monday, December 6	Review
43	Wednesday, December 8	Review
44	Friday, December 10	Review
	<b>Friday, Dec. 17 10:20-12:10</b>	<b>Final Exam</b>

