ASU ARIZONA STATE UNIVERSITY

MAT 251: Calculus for Life Sciences

Instructor:	Email:
Homework site: http://pearsonmylabandmastering.com/	**ASU Blackboard site:** myasucourses.asu.edu
Office:	**Office Hours:**

The instructor reserves the right to make changes to this syllabus as necessary.
Any such changes will be announced in class and updated in the online syllabus.

ASU Catalog Description: Differential and integral calculus of elementary functions. Introduces differential and difference equations. Emphasizes applications to the life sciences. Not open to students with credit in MAT 210, 260, or 270. Prerequisite: MAT 170 with C or better, or ALEKS placement test indication.

Course Materials:
- Text: *Calculus for the Life Sciences*, by Bittinger, Neal & Quintanilla, custom edition for ASU, Pearson Custom Publishing, copyright 2008, ISBN 978-0-558-37131-9 (**optional**)
- Pearson My Lab access (**required** – includes e-book access with student solution manual)
- Graphing Calculator (**required**)

Lecture Schedule:

Week of:	sections	date	sections	date	sections

Section Topics:

2.1: Limits and Continuity Numerically & Graphically	**3.1:** 1st Derivatives to find Max and Min & Sketch Graphs	**5.1:** Integration
2.2: Limits and Continuity Algebraically	**3.2:** 2nd Derivatives to find Max and Min & Sketch Graphs	**5.2:** Areas & Accumulations
2.3: Average Rate of Change	**3.4:** Derivatives to find Absolute Max and Min Values	**5.3:** Fundamental Theorem of Calculus
2.4: Differentiation Using Limits of Difference Quotients	**3.5:** Max-Min Problems	**5.4:** Properties of Definite Integrals
2.5: Differentiation Techniques: Introduction	**3.7:** Implicit Differentiation	**5.5:** Integration by Substitution
2.6: Instantaneous Rate of Change	**4.1:** Exponential Functions	**5.6:** Integration by Parts
2.7: Differentiation Techniques: Product & Quotient Rules	**4.2:** Logarithmic Functions	**7.1:** Functions of Several Variables
2.8: Chain Rule	**4.3:** Apps: Exponential Growth	**7.2:** Partial Derivatives
2.9: Higher Order Derivatives	**4.4:** Apps: Exponential Decay	
	4.5: Derivatives of Exponential & Logarithmic Functions	

University Holidays (no classes, exams):

Other Important Dates: Academic Status Report #1 = _____, Academic Status Report #2 = _____, Course Withdrawal Deadline = _____, Complete Withdrawal Deadline = _____.

Attendance Policy:
- Attendance is mandatory and will be taken daily. Be on time. If you miss attendance, you are absent.
- A maximum of **4** absences is allowed for classes meeting twice per week; A maximum of **6** absences is allowed for classes meeting three days per week.
- The only absences that do not count toward this total of 4 are those for school-sanctioned activities, jury duty or religious observances. (In other words, these permitted absences are to allow for illness and emergency)
- Students who exceed the permitted number of absences will receive a grade of EN.

Grading Scale: This course utilizes +/- grading.

A+ = [97,100];	A = [93,97);	A- = [90,93);	B+ = [87,90);	B = [83,87);	B- = [80,83);
C+ = [77,80);	C = [70,77);	D = [60,70);	E = [0,60)		

Grades:

Online Homework	15%
Quizzes	15%
3 exams	70% (23.3 % each)

Course grades will be made available on Blackboard. Note that the most up-to-date homework grade will be found on the homework website, but will be updated on blackboard after each exam.

Homework: Short, basic skills-oriented practice problems are assigned through Pearson's MyMathLab software found at http://pearsonmylabandmastering.com – section id = _____ . Problems are assigned through this software program to provide immediate feedback on numerical and algebraic solutions, and there are links to the online text and student solution manual to support your understanding of the questions. The due dates for this work are listed on the site. You may work ahead on any of these assignments, but no due date extensions will be given.

Quizzes: Short quizzes will be given in class frequently. Quizzes will cover recent lecture material and may or may not be announced in advance. No make-up quizzes will be given. Missed quizzes will count as 0's in the student's grade.

Exams: The two mid-term exams, as well as the final exam will be taken in the classroom, and will be designed to take the average student approximately 45 to 50 minutes to complete. We will have extended access to the classroom so that a maximum of 75 minutes to take exams 1&2 will be available. This leaves 15 minutes to get to your next class if you have one scheduled. **It is your responsibility to make arrangements to be available for these tests** if you typically leave campus immediately following our course and intend to take more than 50 minutes for the exam. Note that calculators that perform symbolic algebra, such as the TI-89, may not be used on exams.

Exam	Date	Covers
Exam 1		2.1-2.9
Exam 2		3.1-3.2, 3.4-3.5, 3.7, 4.1-4.5
Final Exam (not cumulative)	See ASU Schedule of Examinations	5.1-5.6, 7.1-7.2

Make up tests: Make up tests are given at the discretion of the instructor and only in the case of verified medical or other **documented** emergencies. Students should notify the instructor **before the test is given** if possible. Call the Math Department Office (480) 965-3951 and leave a message or directly notify the instructor via email. If the event is not an emergency, the instructor must be notified in advance to request a make up. The instructor is **not** required to accommodate you.

Class Expectations
- Come to class <mark>on time</mark> daily with notes and a calculator
- Ask questions or come to office hours if you'd like further explanation or examples
- Review your notes daily to prepare for quizzes and upcoming tests
- Read the text in advance to prepare for the next day's new material
- Leave cell phones, mp3 players, and other electronics <u>off</u> and put away while in the classroom

Student Resources
- **Free Tutoring**: The Math Tutoring Center in PSA 116 (http://math.asu.edu/mathtutors) is open 6 days per week and is free for ASU students taking 100-200 level math courses. Bring your SunCard. See website for hours.
- **Private Tutoring**: Graduate students in the School of Mathematical & Statistical Sciences can tutor students at all levels. If you are interested in hiring a private tutor, send an email request to mathtutors@asu.edu. Please include your name, contact information and the course for which you would like tutoring. Costs vary.
- **Student Success Centers:** (http://studentsuccess.asu.edu) provides counseling, tutoring in math (and many other subjects), supplemental instruction, and other types of support to students. See the website for more information.

> Please feel free to come see me during office hours if you have any questions, concerns,
> or if you are registered with DRC and will require accommodations in this class.

First Year Mathematics Courses
Departmental and University Policies and Procedures

For semester deadlines related to enrollment, withdrawal or payments, see the academic calendar available at
http://students.asu.edu/academic-calendar

Course Withdrawal: A student who has not already received an EN grade may withdraw from a course with a grade of **W** during the withdrawal period. The instructor's signature is not required. It is a student's responsibility to verify that that they have in fact withdrawn from a class.

The grade of Incomplete: A grade of incomplete will be awarded only in the event that a documented emergency or illness prevents the student who is doing acceptable work from completing a **small** percentage of the course requirements. The guidelines in the current general ASU catalog regarding a grade of incomplete will be strictly followed.

Instructor-Initiated Drop: At the instructor's discretion, any student who has not attended class during the first week of classes may be administratively dropped from the course. However, students should be aware that non-attendance will NOT automatically result in their being dropped from the course. Thus, a student should not assume they are no longer registered for a course simply because they did not attend class during the first week. It is the student's responsibility to be aware of their registration status.

Final Exam Make-up Policy: The final exam schedule listed in the Schedule of Classes will be strictly followed. Exceptions to the schedule and requests for make-up final examinations can be granted only by the Department Chair, Associate Department Chair, or the Director of First Year Mathematics, and for one of the following reasons:
      1. Religious conflict (e.g., the student celebrates the Sabbath on Saturday)
      2. The student has more than three exams scheduled on the same day as the math final
      3. There is a time conflict between the math final and another final exam.

Honor Policy: The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the University or other sanctions as specified in the University Student Academic Integrity Policy. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, or facilitating such activities.

The grade of XE: A grade of **XE** is reserved for "failure for academic dishonesty." The XE grade may be petitioned after 1 year.

Ethics: It's highly unethical to bring to your instructor's attention the possible impact of your mathematics grade on your future plans, including graduation, scholarships, jobs, etc. For the university's complete policy regarding ethics, including cheating, plagiarism and other forms of academic dishonesty, see the Student Academic Integrity Policy at the following web address: http://provost.asu.edu/academicintegrity

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Student Conduct Statement: Students are required to adhere to the behavior standards of the Arizona Board of Regents Policy Manual Code of Conduct, Academic Affairs Manual ACD 125 Computer, Internet, and Electronic Communications, and the ASU Student Academic Integrity Policy. Students are entitled to receive instruction free from interference by other members of the class. If a student is disruptive, an instructor may ask the student to stop the disruptive behavior and warn the student that such disruptive behavior can result in withdrawal from the course. An instructor may withdraw a student from a course when the student's behavior disrupts the educational process according to procedures of the Student Services Manual SSM 201-10.