Course Syllabus
Fall 2015
Math B6A: Calculus I (4 units)

Professor: Rafael Espericueta  Prof's Email: resperic@bakersfieldcollege.edu
CRN: 71917  Webpage: http://www2.bakersfieldcollege.edu/resperic/

Class Meetings: In MS 104, on Mon & Wed from 6 – 8:05 pm.

Topics Covered
Limits, differentiation and its applications, integration and its applications. For more details, see the Student Learning Outcomes below. We will cover chapters 1 through 6 in the text.

Prerequisites: MATH B1B or an equivalent precalculus course with a grade of “C” or better or qualifying score on placement assessment. Transferable.

Text: Calculus for Scientists & Engineers, by Briggs et al.
This text for is used for the entire calculus sequence (6A, 6B, 6C). This includes an access code for MyMathLab, where assignments must be completed. You may want to only purchase an access code for MyMathLab— it gives you access to the complete text online, and costs far less.

Office Hours: These will be in the classroom where we usually meety, MS104.
Mondays & Wednesdays: 3:25 – 4:20 PM, 5:10 – 6:00 PM
Tuesdays & Thursdays: 3:40 – 4:20 PM, 5:25 – 6:00 PM

Rafael's Calculus I Website
Your instructor created the following website for courses given long ago, but might be useful still. http://www2.bakersfieldcollege.edu/resperic/online/mathb6a/course_map.htm

Please read carefully: This classes utilizes a software called MyMathLab. You will be required to purchase and use this software for the class (instructions on last page). This software contains online homework and quizzes. This software is NOT optional. Any student who is registered in this course during the first week must show at least 60% completion of current MyMathLab work by September 4. Failure to do this will result in being dropped from the course for lack of academic progress. Those who get registered during the second week will be granted a one week extension based on the day they enrolled.

Wait-listed students: Students on the wait list are not eligible to attend lecture (but they MUST show up for the beginning of lecture on the first day of class, or they will be dropped from the wait list). Wait list students are responsible to check the roster daily to see if they became officially enrolled in the course. If this happens, you are responsible to get registered on MyMathLab and complete at least 60% of the current online homework within 1 week of the day of your registration.

Warning: Any student, officially enrolled or wait-listed, who does not show up to the beginning of lecture on the first day of class will be dropped. Registering on MyMathLab does not protect you from being dropped because of not showing on that first day. You may register for this course on MyMathLab without paying immediately. Once you access your account, you have about two weeks before you need to pay, so there is no excuse not to get started immediately!
**Required for Class:** MyMathLab (since this software contains an e-text for the book, you do NOT need to purchase a hard copy of the text, and it costs far less to only purchase the access key). You will also need a scientific or graphing calculator. Cell phones used as calculators are NOT ALLOWED on any in-class exam.

**Attendance & Participation:** Regular attendance is essential to succeed in this course. Lectures will help you grasp the course material and give you a chance to ask questions about anything that isn't clear. Attendance will be taken for every lecture up to the last day to withdrawal. If for some reason you miss class, you are responsible to obtain information from your classmates about what you missed. Contacts from the class should be made prior to missing a class. You may be dropped from the course for being absent for two or more weeks of classes (total of 4 days) prior to the last day to withdrawal.

**Dropping**
If you need to drop the class for any reason, it is entirely your responsibility to do so. Check with the Office of Admissions and Records to see what their policy is concerning dropping the class, if you need to exercise this option. If you don't drop the class, you may end up with an 'F' on your transcript. On the other hand, you may be dropped if you accrue 8 unexcused absences.

**Grading**
Your grade will be computed as follows:
- Homework: MyMathLab assignments (online): 15%
- Chapter Quizzes: 15% (online, 6 in total)
- Midterm Exams 30% (in class, 2 of 'em @ 15% each)
- Final Exam: 40% (in class)

**Final Exam Times:** (in MS 104) Wednesday, December 9, from 6 - 8 pm.

**MyMathLab**
In another attachment, you'll see detailed directions for getting started in MyMathLab.

**Accommodations**
Students with disabilities who believe they may need accommodations in this class are encouraged to contact Supportive Services on the first floor of the counseling building, 395-4334, as soon as possible to better ensure such accommodations are implemented in a timely manner.

**FERPA**
The Family Education Rights and Privacy Act (FERPA) is a federal law that prohibits the instructor from sharing student information (grades, class progress, etc..) with anybody except the student. This means that I cannot share your information with family members (parents, siblings, spouses, etc…).

**Student Learning Outcomes:**
1. Find limits, if they exist, both graphically and analytically. Recognize both graphically and analytically, when a limit does not exist.
2. Determine intervals over which a function is continuous. Be familiar with various kinds of discontinuities including removable, infinite and jump discontinuities.
   Define a function with a removable discontinuity in a way that extends it to be continuous.
3. Determine derivatives of all types of functions either by definition, or by derivative rules. Derivative rules include the power rule, product rule, quotient rule, and chain rule. Types of functions should include polynomial, rational, trigonometric, radical, and piecewise defined. Also determine a derivative by implicit differentiation.

4. Apply derivatives in solving problems. Application problems should include problems involving tangent lines to curves, the Mean Value Theorem, related rates, local maxima and minima, absolute maxima and minima, optimization, curve sketching, and Newton’s method.

5. Use limits and continuity to determine asymptotes (horizontal, vertical, and/or slant) and dominant terms. Use the first derivative test to determine critical points, then intervals over which a function is increasing or decreasing. Use the second derivative test to determine inflection points, then intervals over which a function is concave up or down. Sketch curves of polynomials and rational functions.

6. Use differentials to calculate linearization and to estimate change.

7. Understand the concept of Riemann sums and their connection to the definite integral.

8. Know the properties of integrals and use them to evaluate integrals by finding the antiderivative, or using u-substitution.

9. Know the Fundamental Theorem of Calculus, Parts I and II, and be able to apply the results.

10. Apply integration in solving problems. Application problems should include initial value problems, finding area between two curves, and finding volumes of solids of revolution by disks, shells, or washers. The student should know the Mean Value Theorem for Integrals and be able to find the average value of a function.