Math 115 B: Calculus I
MWF 11-11:50, T 12:35-1:50; Wright 103
CRN 20138, Spring 2010

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Office Hours I will be in my office to answer questions on Mondays 1-3, Wednesdays 10-11 and Thursday 11-12. I am also available by appointment. In fact, if my door is open feel free to come in.

Text *Calculus: Single Variable, Fourth Edition*, McCallum, Hughes-Hallett, Gleason, et al. ISBN: 0-471-48482-2, We will cover most of chapters 1 through 5, and part of chapter 6.

Blackboard This course is listed on blackboard with course ID Math115Brandl and course name Calculus I. There may be other Calculus I classes still listed - be sure to select the one with my last name in the ID.

Computers We will be using a computer software package called Maple in this course. I am not assuming that you have any prior knowledge of this software. We will only make use of a small percentage of what Maple has to offer, but if you continue on in mathematics, you will see that it is a very powerful tool. Maple is available on the laptops in our classroom, the Math computer lab in Wright 103 and the labs in Magale. You can also purchase a copy for your own use at a substantial discount - let me know if you further information about this.

Worksheets You will usually be completing a worksheet during the Tuesday class period. You are encouraged to work together on the worksheets, and to get help from me if you get stuck. If you must miss class, you may get a copy of the worksheet from blackboard. Worksheets are due in class on the day they were given. You may turn in late worksheets for half credit, up until the day of the exam on the material covered. I will not accept any worksheets after Thursday of prep week. Bear in mind that the material on the worksheets is fair game on the exams, so even if you are not able to turn a worksheet in on time, you should still complete it. Solutions to the worksheets will be posted on blackboard.

Homework Homework assignments for the semester are posted on blackboard and on my web-page, however I reserve the right to make adjustments from time to time. Homework will generally be due on Mondays and Fridays. You may turn in your homework in class, but you have until 3:00p on the due date to turn it in. There will be an envelope on the board outside my door where you can drop off your homework. I encourage you to work with each other on homework. I also encourage you to get assistance from me, from other faculty members and students, at the tutoring sessions in Wright 105 (see below), or from anyone else you know. However, copying of homework solutions from any source is not acceptable. In particular, you may not use the instructor's solutions manual. Homework will be graded for accuracy and completion. You may turn in late homework for half credit up until the exam on the material covered, I will not accept any homework after Thursday of prep week.

Students With Disabilities It is the policy of Centenary College to accommodate students with disabilities, pursuant to federal law, state law, and the College's commitment to equal educational opportunities. If you need accommodations, for example seating placement or special arrangements for examinations,

you should inform me as soon as possible. Students with disabilities need to contact Disability Services (a division of Counseling Services), which is located in the ground floor of Rotary Hall to obtain services. Telephone 318-869-5466/5424.

Notes Calculus is the most important class you will ever take. OK, I'm a little biased, but applications of Calculus are everywhere. We will spend most of the term thinking about rates of change. For example velocity is the rate of change of position. Growth rates - of individual organisms and of populations are also important examples. In fact, in most of your college classes you will study things that change. If that change can be quantified then you have a calculus problem. My hope is that by the end of the semester you will see that Mathematics, in particular Calculus doesn't just live in your textbook, but is all around us. You will be doing a fair amount of computation in this course, but only insofar as it aids your understanding of the underlying concepts. True understanding isn't about memorizing a bunch of algorithms and formulas, but about knowing when and how to use them, and on interpreting the result. I will also emphasize mathematical communication. This includes reading and interpreting mathematical material, and expressing mathematical statements and solutions to problems in an appropriate manner.

This course satisfies Centenary College Mathematics Core, so our objectives for this term include the following:

1. You will be able to represent real-life problems through the use of mathematical formulas. In particular, you will be able to describe the manner in which objects or quantities change in terms of the derivative of a function.
2. You will be able to solve problems using symbolic manipulation. For example, you will learn techniques of differentiation and integration.
3. You will be able to interpret the meaning of mathematical representations, such as limits, first and second derivatives, and integrals.
4. You will be able to verify the validity of a mathematical argument.

The term will start with a review of some things you probably saw in your precalculus class (whether you took that course in high school, at Centenary or at another college). These include: Linear Functions, Exponential and Logarithmic Functions, Polynomials and Rational Functions, Trigonometric Functions, Composition of Functions, and the Inverse of a Function. If by the end of the second week you don't feel completely comfortable with these concepts please come talk to me. New techniques and concepts we will cover this term include: Continuity, Limits, The Derivative at a Point, the First and Second Derivatives of a Function, Interpretations of the Derivative (Graphical and Conceptual), Computing Derivatives, Implicit Differentiation, Linear Approximation, Optimization and Modelling, The Definite Integral and Interpretations of the Integral. There will also be lots of Story Problems :) The goal for this class is to master the concepts listed above, and to improve your proficiency in the language of mathematics.

I plan on being in class every day this term, and I expect that you do too. Please let me know in advance if you must miss class for a school sponsored activity. If you miss class due to an emergency, be

sure to contact me as soon as possible. Please remember that you are responsible for material covered in class, even if you are not here.

Honor Code I will ask you to write out the honor code and sign it on everything you turn in. Simply writing "H.C." or "Honor Code" is not sufficient. I take the honor code seriously, and I expect that you do too. To facilitate compliance with the honor code, I will also ask that there be one student per table during exams. This may mean that we will have to use additional classrooms on exam days. Use of the internet or electronic devises (phones, ipods etc.) will not be allowed during exams. However, calculators and Maple software will be allowed on some exams - I will be very clear about when they are and are not allowed.

Midterms There will be four midterm exams in this course. They are scheduled for **Tuesday, January 25**, **Tuesday, March 2**, **Tuesday, March 23**, and **Tuesday, April 13**. Please contact me immediately if you will not be able to be in class on one of these days.

Final Exam The final exam is cumulative, and scheduled for Thursday, May 6 from 8:00-11:00. Please contact me immediately if circumstances will prevent you from taking the finals exam at this time.

Grading Your grade in this course will be based on the following:

Homework	25%
Worksheets	15%
4 Midterms	40% (10% pts each)
Final Exam	20%

Your first homework assignment is given below. This will be due Friday (January 215).

1.1 *Functions and Change*	1,4,5,8,11,15,16,18,19,25,26,27,31
1.2 *Exponential Functions*	5,6,9,10,11,14,18,19,38