Math 2123 – Section 1 MWF 8:30-9:20	**Calculus for Technology I** **Syllabus & Outline**	Oklahoma State Fall 2012

Instructor: **H.E. Bible**
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Office Hours: Posted on the course website

Course Objectives

1) To understand the definitions and principles in elementary calculus (primarily differentiation and integration)
2) To understand applications of calculus related to areas of technology
3) To further develop necessary mathematical skills for continued study, in particular for Math 2133 – Tech Calc II

Textbook/Graphing Calculator

- ***Technical Calculus with Analytic Geometry*** (Fourth Edition) by Peter Kuhfittig, Thomson Brooks/Cole, 2006. This is the same textbook used in Tech Calc II so you won't have to buy a book next semester for that course.
- A scientific or graphing calculator is recommended for this course. See Calculator section below.

MLSC: Mathematics Learning Success Center

The Mathematics Learning Success Center, MLSC, is an excellent resource for tutoring in this course. You are strongly encouraged to take full advantage of its services. You should go there regularly for free tutoring in this course. Hours of operation and location will be posted on the course website. There are other resources on campus that could provide tutoring help for the course. Visit with me if you are interested in these services.

Data Sheet & Course Contract

During the first two weeks of class you will be asked to complete a Data Sheet with picture ID and sign a Course Contract. This document is a very important requirement of the course. You should make it a high priority to complete it properly and return it on time. Copies of the document will be passed out during the first lecture. If you misplace the form, a copy is posted on the website.

Attendance

Educational studies show that the single most important factor contributing to success in a course is regular class attendance. Because of the importance of our class sessions as active learning opportunities, you are expected to attend and participate fully in all scheduled class meetings. Your attendance will be recorded by having you sign an attendance sheet distributed during each class period. Do not sign the attendance sheet for another student or ask another student to sign for you. This is a serious offense of academic misconduct and will be treated as such.

Proper attendance means arriving on time and remaining until the class is dismissed. It is your responsibility to be punctual. If you are late for whatever reason, please respect your classmates and do not enter and interrupt the class session already in progress.

Good attendance demonstrates your desire to learn and your dedication as a student. Missing more than 5 classes in a semester should be considered excessive absenteeism. Exceptionally good attendance might be rewarded at the end of the semester with a bonus of replacing a low exam score. See **Low Exam Replacement Policy** below.

Student Class Number

After the drop and add period ends and the roll is official, you will be given a **Student Class Number**. This number will be a two-digit number indicating you alphabetic order in the class. The Student Class Number is very important and helpful to your instructor in sorting and organizing the papers and recording grades. You should remember this Student Class Number and put it on all homework, quiz and exam papers. If you fail to put your correct Student Class Number on a homework, quiz or exam paper, you will earn a grade of zero on the paper. Numbers will be assigned in on **Wednesday, August 29**. Your **Student Class Number** will appear on the attendance signup sheet to the left of your name.

Examinations

There will be three (3) fifty-minute 100-point examinations and a 110-minute 200-point comprehensive final examination. All these exams will be given in the lecture classroom. You will need your calculator on the exams. The exams will be closed-book, but you will be allowed to use a 3" by 5" note card. All cell phones , ipods, ipads, PDAs and other electronic devices (other than a calculator) should be put away during the exams and quizzes. Bring your Student ID to all examinations for identification. Baseball caps or hats with wide brims are not allowed during any exam or quiz. A schedule of the exams dates is given in the attached Class Schedule. Review these exam dates now and plan your semester schedule accordingly.

Low Exam Replacement Policy

If you have five (5) or fewer total absences for the semester, you qualify for the Low Exam Replacement. This means that your lowest hour exam score may be replaced by a higher percentage score on the final exam if it improves your grade. Only one exam score is eligible for this substitution. Generally, all absences count toward the limit of five absences. However, under rare circumstances some absences might be excused using the same conditions described in the Makeup Policy below.

Quizzes

A total of six (6) 20-point quizzes will be given during the semester. Only your scores on the best five (5) of these will be counted. That is, if you take all six, you can drop your lowest score. Your quiz score has a maximum value of 100 points – the equivalent of a 50-minute exam. Most of these quizzes will be announced (closed-book, no notes) given during the last 10-15 minutes of class. Others may be take-home quizzes or unannounced pop quizzes. For credit on the take-home quizzes, you must be present when the quizzes are passed out and when they are collected. By the nature of a pop quiz, if you are not present for the quiz for whatever reason, there is no makeup. Generally, since one quiz scores is dropped, there should be no need for a makeup. If you miss a quiz, it will be the one that is dropped.

Homework

A total of twelve (12) 10-point homework sets will be collected and graded during the semester. Only your scores on the best ten (10) of these will be counted. Your homework score has a maximum value of 100 points – the equivalent of a 50-minute exam. Homework assignments are generally due on Fridays and are marked on the course outline with symbols like HW1, HW2, etc.

Homework assignments will be given for each section we cover and each homework set will consist of 1 to 3 of these sections. These assignments will be posted on the website. You should print these papers and work the problems on the printed paper. Due dates (usually on Fridays) for the homework sets and the sections they include are noted on the course outline. Since two of these scores will be dropped, there should be no need for makeups. If you miss a set, it will be one of the two homework scores that are dropped.

Only selected problems on the homework sets will be graded. Since you will not know what problems will be graded, you should always work all the problems on every set and turn in all pages to insure that you get the maximum points possible. **Remember, the main reason for working the homework is for practice and to help you learn the course material. Any grade that you may receive is only a secondary reward.**

These guidelines apply to homework papers:

- The papers are turned in at the beginning of the class. If you are late to class, you cannot submit the paper.
- You must attend the entire session and turn in the paper yourself - it cannot be turned in by a classmate. If you miss the class session, you miss the homework. No early or late homework will be accepted.
- The papers should be properly submitted to be graded. The pages should be in order, stapled in the upper left corner, with your name and Student Class Number on all pages. Submit the printed copy from the website, not a handwritten copy.
- It is your responsibility to know when sets are due and to turn in the proper papers (see Class Schedule).
- The homework you submit should be your own work. You can work with others or get help from tutors, but ultimately you should be able to work the problems yourself. Copying someone else's work is not allowed; more importantly, you don't learn anything from copying.

Course Grading

1.	Homework	100 points	best 10 homework scores out of 12
2.	Quizzes	100 points	best 5 quiz scores out of 6
3.	Exam 1	100 points	low score may be replaced with Final Exam percent according to the Low Exam Replacement Policy
4.	Exam 2	100 points	
5.	Exam 3	100 points	
6.	Comprehensive Final	200 points	
	Total	700 points	

Semester grades are not negotiable. They will be firmly and equitably assigned with no curving based solely on total points earned as follows: **700-630 A, 629-560 B, 559-490 C, 489-420 D, 419 and below F.**

Course Website

We will use the OSU Online Classroom system - Desire2Learn (D2L) at https://oc.okstate.edu for the course website. The website will have valuable information pertaining to this course including lecture worksheets, homework assignments quiz and exam solution keys, class announcements and links to important OSU sites. Most of these will be PDF files and you will need Acrobat Reader to view and print the files. **Before coming to class, you should print the worksheets and bring them with you to help with taking notes and following along with the lecture. Coming to class without the proper printed worksheets is grounds for being counted as absent and being asked to leave the classroom.**

The website is a required feature of the course. However, technical problems with the site or your inability to access it should not be used as an excuse for not fulfilling the course requirements. If you do have problems accessing the website, contact the IT Helpdesk. Furthermore, reviewing the worksheets online is not a sufficient substitute for actually attending the lecture and participating in class. Grades will NOT be posted on the website.

Graphing Calculator

A scientific or graphing calculator is recommended for this course. At a minimum you should have a calculator that has trig, log and exponentiation buttons. Remember that a calculator is just a tool. You should learn how to work the majority of the problems in this course without a calculator. Use the calculator only as a computational tool, not a crutch. The calculator must be a dedicated calculator. Cell phones or other hand-held devices with calculator apps are not allowed in the course. You may be able check out a graphing calculator free of charge from the Math Department (401 MSCS) for use during the semester. Details of this process will be posted on the course website.

Use of the calculator may be limited on certain exams and quizzes. **It is your responsibility to learn how to operate your calculator properly.**

Some calculators can perform calculus functions. You are not allowed to use these calculus functions of a calculator on homework, quizzes and exams. Even though your calculator should have trig buttons, very rarely will we use those functions. For both calculus and trig applications, most problems should be worked using the manual techniques we discuss in class.

E-mail Guidelines

My e-mail address is listed on Page 1 (notice it is @math.okstate.edu, not @okstate.edu). Please use the following guidelines when you send me an e-mail:

- Use your OSU e-mail (@okstate.edu). I will not reply to a non-OSU account.
- All e-mails should have a Subject Line or it automatically gets put in my SPAM folder and I'll never see it.
- All e-mails should include your Student Class Number.
- Course business will not be conducted via e-mail. Any questions or issues involving class policies or grades should be taken care of in person in my office.

Office Hours

My office hours are posted on the course website. I encourage you to take advantage of these hours for help with the course material and for any questions about your progress in the class. Since I have a lot of students, this time will be on a first-come, first-served basis. If your schedule conflicts with these times, feel free to talk to me before or after a class or by e-mail and we can arrange an appointment at a mutually acceptable time.

University Policies / Academic Integrity

All university policies will be followed in this course. It is your responsibility to know and comply with all university policies and deadlines. The university has prepared a syllabus attachment document which contains important information. A link to this document can be found on the course website.

OSU is committed to the maintenance of the highest standards of integrity and ethical conduct. This level of ethical behavior and integrity will be maintained in this course. A document outlining academic integrity issues specific for this class can be found in the Miscellaneous section of the course website. A link to OSU's academic integrity policies can be found on the course website.

Makeup Policy

It is the policy of the Mathematics Department to offer each student reasonable accommodations in the event that the student misses a major assessment activity for a valid and documented reason. Because of the importance placed on our class sessions as active learning opportunities, you are expected to attend all class sessions. It is also expected that you assume responsibility for taking all exams and quizzes and turning in all homework assignments on the dates scheduled.

If you miss an exam, quiz or homework assignment, allowances are included in the grading system for missed work, i.e., 1 dropped quiz, 2 dropped homework and the Low Exam Replacement policy. Because of these built-in accommodations, there should be no need for a makeup. However, under rare circumstances, with the proper documentation for an approved reason, you might be allowed to make up missed work.

To be considered for a makeup assignment, you will need to complete a **Request for Makeup** form (available on the course website) and submit it to your instructor in a timely manner with official documentation. This documentation should be written specifically for you. Generic or form letters are not acceptable. It should include the name and phone number of a responsible person that can be contacted by your instructor for verification.

a. If you are required to participate in a University sponsored activity or military exercise, you will know in advance that you will miss the work. Therefore, you should submit the **Request for Makeup** form at least 7 days before the missed class. To be considered, it must be true that the activity was not optional and could not be rescheduled to another day or time to avoid the conflict with this class.

b. Illnesses or accidents require official documentation from your doctor, typed on official stationery certifying that :
   1) you were unable to attend class on the day in question due to illness or accident and
   2) you are currently well enough to return to class.

   You should submit this documentation attached to the completed **Request for Makeup** form immediately after returning to class.

c. At the instruction's discretion, other situations may qualify for makeups. In all cases official documentation is required with the **Request for Makeup** form and your instructor will need to approve the request and your documentation.

d. Some obvious examples of situations which would seem to not qualify are:

- medical conditions not requiring a doctor's visit
- conflicts with other class or work schedules
- travel plans for holidays or semester breaks
- alarm clock failure, oversleeping
- misreading the schedule, forgetfulness
- car trouble, no parking space, OSU bus problems
- social or fraternity / sorority obligations
- boyfriend / girlfriend issues
- incarceration for alcohol or illegal drug activities
- job interviews, job or career fairs

To be considered for a makeup, all paperwork should be completed and an in-office discussion held with your instructor as soon as possible after the occurrence. Failure to comply with these conditions will void your qualification for a makeup and result in a 0 grade on the assignment.

Proper Classroom Decorum

Your behavior in the classroom reflects your dedication as a student. Because of the size of this class and the small classroom, any activity that is noisy or disruptive affects a large number of students. You are expected to act in an attentive, respectful, non-disruptive manner in the classroom. Cell phones, pagers, iPods and other electronic devices are to be turned off and put out of sight before the beginning of class. Activities during the lecture such as visiting with other students, talking on the phone, texting, reading the newspaper, working on material for another class, sleeping, playing

video games, etc. show contempt for the learning process. You will be asked to leave the classroom if your actions involve the activities above and/or your actions are distracting or inattentive.

You should always come to class with the printed worksheets. If you show up without the worksheets, you will be counted as absent and asked to leave the classroom. Viewing the worksheets using a laptop during the lecture is not allowed.

During the semester if another student is creating a disturbing or distracting environment for you, please let me know and I will correct the situation quickly.

Special Accommodations for Students

If you have a need for special accommodations of any nature, I will work with you and Student Disability Services, 315 Student Union, to provide reasonable accommodations to ensure that you have a fair opportunity to perform in the class. Please advise me of your situation and the desired accommodations as soon as possible during the first week of class.

If Student Disability Services has determined that you require extending testing time, you should meet with me as soon as possible to discuss several very specific requirements for this extended testing time.

Grade Corrections

If you believe a homework, quiz or exam was incorrectly graded, you should bring it by my office as soon as possible for re-grading. However, be aware of a couple of things: 1) The entire paper will be re-graded, so there is always the possibility that you might lose points on other problems instead of gaining points on the problem in question. 2) If you are comparing your paper to that of a classmate, you should also bring in their paper. Their paper will be subject to the same re-grading. They could also lose points on the problem in question or on other problems. Although grade corrections should be addressed as soon as they are discovered, all grade corrections must be made within two weeks of the papers being returned to the class.

Partial Credit / Showing Work – Final Answer vs Total Solution

Regardless of what you may be used to in previous math courses, in this course only minimal partial credit will be given. Homework and take-home quizzes will be graded more strictly than in-class quizzes and exams. Unlike proctored exams and quizzes, homework and take-home quizzes have no time limit. You have access to the textbook, notes, and tutors. With all these resources, you should be able to carefully work the problems correctly and double check the solutions before you submit the papers.

Many of the problems you will be asked to work in this course require several calculation steps to arrive at the "answer." Just supplying that answer is usually not sufficient. We are interested in measuring whether you have mastered the techniques required for a complete solution. You will demonstrate this by showing all your steps at arriving at the final answer. Therefore, you must show all your work clearly and in detail. You will be graded on your **total solution**, not just the final answer. Answers alone with little or no work steps shown will result in no points. Also, when an answer has units ($, feet, $/item, etc.), you must include the units for full credit.

Final Comments

I enjoy mathematics and I hope to share my appreciation of the subject with you. OSU, the math department and I are committed to helping you achieve your goals. We want you to succeed in this class, but ultimately your success lies in your hands. You are going to have to work, study and learn something. Some of you will need to work more than others. If you spend an appropriate amount of time studying the material, hopefully you will learn some calculus. If you successfully demonstrate your knowledge on the quizzes and exams, you will earn a course grade that rewards your efforts. Trying to find the easy way out, not attending class, making excuses for not doing the work, asking for exceptions to class policies, blaming your failure on others are all counter-productive. This approach has not worked for students in the past and it will not work for you this semester. Try to have a positive attitude about the course, make a commitment to work hard and learn the material. Hopefully, this hard work will earn you a good grade and it might even be fun!

Any changes in this syllabus or class schedule will be communicated to you in class by the instructor.

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Week	Date	Section - Topic	Week	Date	Section - Topic
1	Aug 20 Mon	Course Introduction 1.1 The Cartesian Coordinate System	9	Oct 15 Mon	3.4 Applications of Min and Max
	Aug 22 Wed	1.2 The Slope 1.3 The Straight Line		Oct 17 Wed	3.5 Related Rates
	Aug 24 Fri	1.3 continued 1.4 Curve Sketching		Oct 19 Fri	3.6 Differentials
		↑ **HW1 1.1, 1.2, 1.3**			↑ **HW8 3.2, 3.4, 3.5**
2	Aug 27 Mon	1.6 Conics 1.7 The Circle	10	Oct 22 Mon	4.1 Antiderivatives
	Aug 29 Wed	1.8 The Parabola 1.9 The Ellipse		Oct 24 Wed	4.2 The Area Problem
	Aug 31 Fri	1.9 continued 1.10 The Hyperbola		Oct 26 Fri	4.3 Fundamental Theorem of Calculus
		↑ **HW2 1.4, 1.7, 1.8**			↑ **HW9 3.6, 4.1, 4.2**
3	Sep 03 Mon	**No Class – University Holiday**	11	Oct 29 Mon	4.4 The Integral
	Sep 05 Wed	2.1 Functions and Intervals		Oct 31 Wed	4.5 Basic Integration Formulas
	Sep 07 Fri	2.2 Limits		Nov 02 Fri	4.5 continued
		↑ **HW3 1.9, 1.10, 2.1**			↑ **HW10 4.3, 4.4, 4.5**
4	Sep 10 Mon	2.3 The Derivative	12	Nov 05 Mon	4.6 Area Between Curves
	Sep 12 Wed	Catch up and Review		Nov 07 Wed	4.6 continued
	Sep 14 Fri	**Exam 1 – 1.1-1.4, 1.6-1.10, 2.1-2.3**		Nov 09 Fri	4.8 The Constant of Integration
		↑ **HW4 2.2, 2.3**			↑ **HW11 4.6**
5	Sep 17 Mon	2.4 The Derivative by 4-Step Process	13	Nov 12 Mon	4.9 Numerical Integration
	Sep 19 Wed	2.5 Derivatives of Polynomials		Nov 14 Wed	Catch up and Review
	Sep 21 Fri	2.6 Instantaneous Rate of Change		Nov 16 Fri	**Exam 3 – 3.4-3.6, 4.1-4.6, 4.8-4.9**
		↑ **HW5 2.4, 2.5**			↑ **HW12 4.8, 4.9**
6	Sep 24 Mon	2.7 Differentiation Formulas	14	Nov 19 Mon	5.1 Means and Root Mean Squares
	Sep 26 Wed	2.7 continued		Nov 21 Wed	**No Class – University Holiday**
	Sep 28 Fri	2.8 Implicit Differentiation		Nov 23 Fri	**No Class – University Holiday**
		↑ **HW6 2.6, 2.7**			
7	Oct 01 Mon	2.9 Higher Derivatives	15	Nov 26 Mon	5.2 Volumes of Revolution 1
	Oct 03 Wed	3.1 The First Derivative Test		Nov 28 Wed	5.2 continued
	Oct 05 Fri	**No Class – Fall Break**		Nov 30 Fri	5.3 Volumes of Revolution 2
8	Oct 08 Mon	3.2 The Second Derivative Test	16	Dec 03 Mon	5.4 Centroids
	Oct 10 Wed	Catch up and Review		Dec 05 Wed	Catch up and Review for Final
	Oct 12 Fri	**Exam 2 – 2.1-2.9, 3.1-3.2**		Dec 07 Fri	Review for Final
		↑ **HW7 2.8, 2.9, 3.1**		**Monday Dec 10**	**Final Exam 8:00-9:50 am ***

*** Note the time of the Final Exam is 8:00 am Monday is the first day and the first time slot of Finals week. The time is 30 minutes earlier than the normal class time. The date and time of the Final is set by the University. It cannot and will not be changed. The Final Exam is comprehensive and is worth 200 points.**