Mathematics 110B
Spring 2010

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Textbook: James Stewart, *Essential Calculus: Early Transcendentals*, Brooks/Cole ISBN: 0-495-01428-1
website: http://www.stewartcalculus.com/

Course Content: A two-semester course, Math 110A & B, provides students with an integrative approach to calculus that includes the necessary precalculus topics. Course content includes: limits, continuity, derivatives, and differentiation of algebraic, trigonometric, logarithmic and exponential functions, applications of derivatives, anti-derivatives, the definite integral, integration by substitution, and applications of integral. Math 110A does not count for a GER mathematics course. Math 110B does count for a GER mathematics course.

> **Content of Mathematics 110A**: Review of algebra, functions, trigonometric functions, logarithms and exponents. Calculus topics include limits, continuity, derivative, differentiation, extrema, Intermediate Value Theorem, Mean Value Theorem, graphing polynomial and rational functions, optimization problems.
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> **Content of Mathematics 110B**: Review of inverse trigonometric functions and differentiation, and graphing. New topics include implicit differentiation, logarithmic differentiation, related rates, graphing vertical tangents, logarithmic and exponential graphs, sums and sigma notation, mathematical induction, antiderivatives, Fundamental Theorem of Calculus, definite integral, area, volume, separable differential equations, substitution method of integration.

Course Goals: After completion of the sequence Mathematics 110A/B, the student should be able to do the following: to find the limit, derivative, antiderivative, and definite derivative of a function; to understand the basic theoretical underpinnings of these processes; to understand the relationships between these processes and rates of change; to understand the relationships between these processes and the graph of a function; and to apply these processes in solving problems on rates, extrema, area, and volume. An overall goal is to provide the student with a solid foundation for Math 112 Calculus II.

Prerequisite: Math 110A with grade C or above. If you scored a D in math 110A, I suggest you taking another math class to meet the GER, or at least you should talk to me at the beginning of this semester.

Class Attendance: The student is responsible for work covered in class, and therefore the student is expected to attend all classes. Furthermore you are expected to have done the reading for each class. An inordinate number of absences will be handled in accordance with the College's polices. Entering class late by ten or more minutes is considered an absence.

Homework: Assignments from the textbook and handouts are for the benefit of the student and will be collected on every Thursday. It is important for the success of the student that the assignments be completed as they are assigned. Collaboration is encouraged. However each student should be sure that he or she can **solve problems unaided by notes, the textbook, or other people**. Use good style on homework. Daily practice develops valuable mental habits. In general the student will need to study at least 6 good hours every week exclusive of the time spent on quizzes and review for tests.

Gateway Test: In order to pass the course, the student must pass an examination on differentiation. All 100 points will be given for a perfect paper. If the student has two mistakes or less, the student passes the Gateway and receives a score of 80 points for one mistake and 60 for two mistakes.

Quizzes: Quizzes will be given in class with or without prior announcement. Normally an excused absence during which a student misses a quiz may not be made up.

Tests: Calculators will not be allowed on tests. Students are expected to take tests at the scheduled times. Any conflicts or problems will be handled on an individual basis. For excuses deemed legitimate arrangements will be made to take a test **prior to** the testing time.

Grading: Evaluation will be based on the following written work: Tests (400), Gateway test (100), Quizzes (100) and Final Exam (200) with a total 800 points.

The plus/minus system will be used with the following rough guide to letter grades: A: 90%-100%, B: 81-89%, C: 71-79%, D: 61-69%, and F: 59% and lower.

Important Dates: Please mark your calendar for the following events:

- Gateway Test: 21-Jan, 28-Jan, 11-Feb, all at 8:30-9:30AM, all Thursdays
- Tests: 5-Feb, 5-Mar, 26-Mar, 23-Apr, all Fridays
- Final, see the Final Exam Schedule
- Last to drop a class without academic penalty: 5-March

Class Conference: There is a class conference on Blackboard. Students should check this conference on daily basis for homework, announcements, SI sessions, tutoring, outlines for tests, posting of grade distributions, etc. Students may ask questions of a general nature on this conference. Individual concerns should be sent directly to your instructor.

Office hours/SI/Math center/Tutors:
There are many resources of help. Please schedule your time to best use of them.

- Regular office hours will be held. You do not need to make an appointment during the office hours. Walk-ins are also welcome. If I am not available for help immediately, you may have to reschedule. If you like to make an appointment, please do so through email above.
- The SI program is a program of supplemental instruction. The supplemental instructor (SI) is a student who has taken the course before, has a good understanding of the material (but probably not as complete as the instructor), and knows how to succeed in the course. The SI leads organized study sessions. They are not tutoring sessions and are not for going over homework. The sessions will help to make the student's efforts more productive.
- Student tutors will be available and a schedule will be announced.
- Mr. Paul Oser, the master tutor, offers individual tutor session, too.

Feed-backs and suggestions: I strongly encourage feedbacks and suggestions from students in any form: written comment or discussion in private.

Honor Code: The Honor Code of Oxford College applies to all work submitted for credit in this course. To receive credit for work submitted you must place your name on it. By placing your name on such work, you pledge that the work has been done in accordance with the given instructions and that you have witnessed no Honor Code violations in the conduct of the assignment.