Class Information for

Calculus I

Math 180, Fall Semester 2003

MWF 1–1:50pm, 309 Burnham Hall

Instructor: Matthias Aschenbrenner (e-mail: `maschenb@math.uic.edu`)

Course webpage: `http://www.math.uic.edu/~maschenb`
(follow the link to Math 180; will be online later this week)

Office: 616 SEO; phone: (312) 413-2163

Office hours: M 2–3pm; W 2–3pm; F 11–12am (all tentative)

Teaching assistant: Xin Fang (e-mail: `xinfang@math.uic.edu`)

Discussion sections: TuTh 2:00–2:50pm or 3:00–3:50pm, 312 Taft Hall

TA office hours: On TuTh 9am–3:50pm there will be someone in the Math Lab (300 Taft Hall) who can answer Math 180 questions.

Required text: D. Hughes-Hallett et al., *Calculus,* 3rd ed.

Calculator: Use of a graphing calculator will be an integral part of the course. Instructors will be using the TI-83. Any graphing calculator you now own should be adequate.

Prerequisites: An appropriate grade on the Department placement test or a grade of C or better in Math 121 or an approved equivalent course. Students who do not satisfy these prerequisites will be dropped.

Emerging Scholars Program (ESP): ESP participants spend an additional four hours per week (2-hour sessions) working in groups on challenging mathematics problems, and receive 1 Satisfactory/Unsatisfactory credit. Admissions to the Emerging Scholars Program depends on an adequate score on the university placement examination or a grade of C or better in the prerequisite for the math taken with the Emerging Scholars workshop. Further questions about ESP should be directed to Jeanne Ward (e-mail: `jmward@uic.edu`).

ESP section instructor: Rishi Nath (e-mail: `nath@math.uic.edu`)

ESP sections: TuTh 1:00–1:50pm, 312 Taft Hall

Syllabus: The purpose of this course is to introduce you to calculus through the study of problems, examples, and applications, the discussion of theoretical ideas, and the use of the calculator. You are expected to read material in advance of lectures, as well as do some relevant problems beforehand, in order to maximize what you get out of the lectures.

We will cover the following material:

Week	Sections	Contents
1	1.1–1.2	Linear, exponential, elementary functions
2	1.3–1.6	Trig functions, composition
3	1.7–2.1	Continuity, introduce derivative
4	2.2–2.4	Limits, derivative at a point and derivative function
5	2.5	Interpretations of the derivative, Review + Exam I
6	2.6–2.7	Second derivative, continuity
7	3.1–3.4	Derivative: powers and basic rules
8	3.5–3.7	Composition, implicit functions
9	3.8–3.10	Parametric equations, linear approximation
10	4.1–4.3	Applications, families, max-min
11	4.4–4.6	Applications, optimization
12	4.7	Properties of functions; Review + Exam II
13	5.1–5.3	The definite integral
14	5.3–5.4	Interpretations of integral, Fundamental Theorem
15	5.4	Properties of integrals; review for final exam

Homework: You are encouraged to discuss and work on homework problems with your classmates. Group work is an important component of learning and will be used to enhance your communication skills. It is hoped that individuals in a group session will fully participate and will fully understand conclusions reached in this common effort.

Homework problems will be collected at the beginning of each lecture.

The homework will be returned in the discussion sections. Some of these problems will be on material to be discussed that day and some will be on material previously discussed. Below you find a list of assignments (until 10/03) with date, text sections to be read for the lecture on that date, and problems to be turned in during that day's lecture. (Later assignments to be posted on the webpage.)

No late homework will be accepted.

Date	Section(s)	Problems/Comments
08/25	1.1	also, read preface page xi.
08/27	1.2	1.1 #4, 23, 24, 27; 1.2 #1 - 3, 5, 7, 21;
08/29	1.2	1.1 #19, 20, 22, 28; 1.2 #22, 23, 29, 30;
09/01		Labor Day holiday. (no classes)
09/03	1.3, 1.4	1.3 # 3, 5, 16-19; 1.4 #3, 5, 19;
09/05	1.5	1.4 #29, 33, 36, 39; 1.5 #1, 6;
09/08	1.6	1.5 #14, 18, 20, 22, 24; 1.6 #2, 4, 5;
09/10	1.7	1.6 #6, 7, 10, 22, 23, 25, 32; 1.7 #3, 4, 5;
09/12	2.1	1.7 #1, 9, 11, 16; 2.1 #3, 4, 11, 15;
09/15	2.2	2.1 #5, 7, 9, 13, 14, 16; 2.2 #7, 8, 9;
09/17	2.3	2.2 #11, 15, 23, 30; 2.3 #2, 8, 9, 23;
09/19	2.4	2.3 #12, 17, 22; 2.4 #1, 2, 11;
09/22	2.5	2.4 #15, 19, 28, 35; 2.5 #2, 3;
09/24		2.5 #7, 17;
		1. Rev #1, 3, 6, 7, 18, 19, 26, 34, 42; review
		2. Rev #4, 5, 7, 9, 22, 24, 27, 36; review
09/26		Hour Exam 1 (covers 1.1–2.5 on syllabus)
09/29	2.6	2.6 #8, 9, 10, 11;
10/01	2.7	2.6 #13, 15, 18, 19; 2.7#1, 2, 6, 9;
10/03	2.7	2.7 #4, 7, 11, 13, 16; 3.1#13, 16, 22, 35, 38

Quizzes: One quiz in the TA session on Tuesday each week, starting 09/02.

No makeup quizzes will be given.

Hour exams: Two hour exams, given in class, on 09/26 and 11/14.

Except in the case of emergency, students must discuss absences from hour exams or the final examination with me in advance of the exam.

Final exam: Thursday, 12/11/03, 1:00–3:00pm, at a place to be announced. Students with final examinations which conflict with the Math 180 final examation are responsible for discussing a makeup examination with me **no later than 12/03.**

Grading: Homeworks/quizzes: 20%. Hour exams: 20% each. Final: 40%.

Academic integrity: Students are expected to be thoroughly familiar with the University's policy on academic integrity. See page 56 of the Undergraduate Catalog. The University has instituted serious penalties for academic dishonesty. We have encouraged you to work with your class-

mates on homework. Regarding homework, quizzes, hour exams, and the final examination:

> **Copying work to be submitted for grade, or allowing your work to be submitted for grade to be copied, is considered academic dishonesty.**

Office of Disability Services: It is University policy that students with disabilities who require accommodations for access and participation in this course must be registered with the Office of Disability Services (ODS); phone number (312) 413-2103.