MATH 2080
Introduction to Analysis, 2015F

Instructor: N. Zorboska   **e-mail:** zorbosk@cc.umanitoba.ca

Office: 530 Machray Hall   **Telephone:**   474 – 9832

Web-page: http://home.cc.umanitoba.ca/~zorbosk/Webpages/2080_15_F/2080.html

Office Hours: Mondays 1:30 - 2:30 and Tuesdays 2:30 - 3:30 (or by appointment)

Textbook: Introduction to Real Analysis, R.G. Bartle and D.R. Sherbert (4th edition)

Approximate Course Outline:

    Topics   Chapters from Bartle, Sherbert

Preliminaries   Chapter 1
(review of sets and functions, induction, finite and infinite sets)

Real Numbers   Chapter 2
(the real numbers: field, order and completeness axioms, Archimedean property, density
of rational numbers, nested intervals property, uncountability of the real numbers)

Sequences   Chapter 3
(review of the limit definition, subsequences, accumulation points, monotonic sequences,
Bolzano -Weierstrass theorem, Cauchy sequences)

Limits   Chapter 4
(Limits of functions of one and several variables: (review of "epsilon-deltas"), sequential
criteria for limits)

Continuous Functions   Chapter 5
(continuous functions on intervals, "Maximum-Minimum" theorem, Bolzano's
Intermediate Value theorem, preservation of Intervals theorem, uniform continuity,
Weierstrass Approximation theorem, continuous functions of several variables)

Calculation of Final Grade:

Tests: There will be two tests each worth 20**%**, for a total of **40%** test grade.
Assignments: There will be two assignments, each worth 5% of your final grade, for a total of **10%**. Late assignments receive a grade of zero.

If you receive 30% or less on two or more of the tests and assignments combined, you are required to have a meeting with the instructor to consult on your standing in the course.

The **final examination** will be worth **50%** of the final grade.

<u>**Academic Dishonesty:**</u> The Department of Mathematics, the Faculty of Science and the University of Manitoba regard acts of academic dishonesty in quizzes, tests, examinations, laboratory reports or assignments as serious offenses and may assess a variety of penalties depending on the nature of the offense. Acts of academic dishonesty include (but are not limited to) bringing unauthorized materials into a test or exam, copying from another student, plagiarism and examination personation. Students are advised to read section 7 (Academic Integrity) and section 4.2.8 (Examinations: Personations) in the "General Academic Regulations and Requirements" of the current Undergraduate Calendar.
Note, in particular that cell phones, pagers, PDA's, MP3 units or electronic translators are explicitly listed as unauthorized materials, and hence may not be present during tests or examinations.
Penalties for violation include being assigned a grade of zero on a test or assignment, being assigned a grade of "F" in a course, compulsory withdrawal from a course or program, suspension from a course/program/faculty or even expulsion from the University. For specific details about the nature of penalties that may be assessed upon conviction of an act of academic dishonesty, students are referred to University Policy 1202 (*Student Discipline Bylaw*) and to the Department of Mathematics policy concerning minimum penalties for acts of academic dishonesty.
The *Student Discipline Bylaw* is printed in its entirety in the Student Guide, and is also available on-line or through the Office of the University Secretary. Minimum penalties assessed by the Department of Mathematics for acts of academic dishonesty are available on the Department of Mathematics web page.

All Faculty members (and their teaching assistants) have been instructed to be vigilant and report incidents of academic dishonesty to the Head of the Department.