

**STAT 7360 (CRN: 54792)**  
**SELECTED TOPICS ON BROWNIAN MOTION**  
**AND RELATED STOCHASTIC PROCESSES**  
**WINTER 2017**

**Instructor:** Dr. Yuliya V. Martsynyuk  
Office: 336 Machray Hall  
Phone: (204) 480-1074  
E-mail: Yuliya.Martsynyuk@UManitoba.CA

**Office Hours:** Monday, Wednesday, and Friday 9:30 am – 10:30 am, or by appointment

**Prerequisites:** consent of the instructor

**Lectures:** Tuesday and Thursday 11:30 am -- 1 pm, in 382 University College

- attendance is mandatory
- the lecture notes presented in class constitute a self-contained source of the course material
- some problems will be solved in class, and some will be assigned for you to practice (no credit homework)

**Evaluation:** The course grade will be based on two 75-minute closed book term tests held during the lecture hours. The exact dates for each of the tests will be announced in advance in class. The test problems will strongly be related to those that are solved in class and also those that are on your homework. There will be no makeup tests in this course.

**Course Outline:** Review of Brownian Motion; Partial Sums Processes and Student Processes, Functional Central Limit Theorem and Its Applications; Variations on Brownian Motion; The Black-Scholes Option Pricing Formula; Brownian Measure and Integration.

**note:** the above is only an approximate outline. It is your responsibility to keep up with what is being done in class and with any changes announced in class.

**Academic Dishonesty:** It is important that you understand what constitutes academic dishonesty and that you are familiar with the very serious consequences. Links to resources that describe academic dishonesty (including plagiarism, cheating, inappropriate collaboration and examination impersonation, as well as typical penalties) can be found at:

<http://umanitoba.ca/science/undergrad/resources/webdisciplinedocuments.html>