STAT 3050 – Introduction to Probability Theory and its Applications

Time & Location: Slot 3 (MWF, 10:30 – 11:20 a.m.), Room 111 Armes

Instructor: Andrew Morris
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Office Hours: Tuesday: 1:00 – 2:00 p.m.
Wednesday: 1:00 – 2:00 p.m.
Thursday: 1:00 – 2:00 p.m.

Calendar Description: Development of the basic concepts of probability theory and application in areas of biostatistics, actuarial science, reliability theory, queuing theory.

Prerequisites: STAT 3400 (or the former 005.350 or 005.351 or 005.341), MATH 2720 and 2730 (or equivalent).

Course Web Page: www.umanitoba.ca/jump

Textbook (optional): *Introduction to Probability Models*. Sheldon Ross. 9th Edition. Academic Press.

Topics: Chapters 1 & 2: Review
Chapter 3: Conditional Probability/Conditional Expectation
Chapter 4: Discrete Time Markov Chains
Chapter 5: Poisson Processes

Selected Topics From:
Chapter 7: Renewal Theory
Chapter 8: Queuing Theory
Chapter 9: Reliability Theory
Chapter 10: Brownian Motion

Quizzes: There will be four quizzes held in class, tentatively scheduled for the following dates:

- Wednesday, January 25
- Wednesday, February 15
- Friday, March 16
- Monday, April 2

Midterm Test: The midterm test is tentatively scheduled for Wednesday, March 7 from 5:30 – 7:30 p.m. in a location to be determined.

Assignments: There will be no formal assignments for this course. Periodically, throughout the course, you will be given problem sets that you should attempt. The quizzes, the midterm test and final examination will be based, in part, on these or similar problems. You are free (and encouraged) to work in groups on these problems. These problems will be posted on Jump.

Grading Scheme: Quizzes - 30%
Midterm Test - 30%
Final Exam - 40%

Grading Scheme: There are no predetermined cut-offs for each of the letter grades. However, the following are guarantees to you: $A^+ (\geq 90)$, $A (\geq 80)$, $B^+ (\geq 75)$, $B (\geq 70)$, $C^+ (\geq 65)$, $C (\geq 60)$, $D (\geq 50)$.

Voluntary Withdrawal: The voluntary withdrawal date is March 16, 2012, by which time you will have received your marks for the midterm test and two quizzes.

Academic Dishonesty: I wish to draw your attention to the sections in the University of Manitoba General Calendar 2011-2012 dealing with academic dishonesty. Please see http://umanitoba.ca/science/student/webdisciplinedocuments.html.

Important Note to Students from the Faculty of Science: It is your responsibility to ensure that you are entitled to be registered in this course. This means that you:

- Have the appropriate prerequisites, as noted in the calendar description, or have permission from the instructor to waive these prerequisites.
- Have not previously taken, or are concurrently registered in, this course and another that has been identified as "not to be held with" in the course description.

  The registration system may have allowed you to register in this course, but it is your responsibility to check. If you are not entitled to be in this course, you will be withdrawn, or the course will not be used in your degree program. There will be no fee adjustment, and this is not appealable. Please be sure to read the course description for this and every course in which you are registered.