

STAT 3800
Mathematical Statistics
Fall 2014

Instructor: Dr. Mohammad Jafari Jozani

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Office hours: Monday (10:30–11:30), Wednesday (10:30–11:30) or by appointment.

Class-time: MWF 9:30–10:20 a.m. at 124 Machray Hall

Lab: Mondays 2:30–3:45 p.m. at 124 Machray Hall

Lab Instructor: Rojia Haddadian

Calendar Description

Multivariate distributions and transformations, order statistics, sampling distributions, convergence, introduction to statistical inference. Not to be held with the former STAT 3600 (005.360).

Prerequisite STAT 3400 or the former STAT 3500 (005.350) (C). Prerequisite or Concurrent requirement: Whichever of MATH 2720 (MATH 2721, 136.272) or MATH 2730 (MATH 2731, 136.273) not yet taken.

Mark Breakdown

2 Midterm Tests (75 minutes, time to be announced)	50%
Final Examination (120 minutes, time and place to be announced)	50%

Grade cut-offs

The following are the minimum percentage grades required to receive each of the various letter grades: A+ (90%), A (80%), B+ (75%), B (70%), C+ (65%), C (60%), D (50%).

There is an additional requirement for obtaining a C or a D in the course: to obtain a grade of C or better, you must obtain at least 50% on the final examination; to obtain a D you must obtain at least 40% on the final examination.

Assignments

There will be no formal assignments of this course. I will, periodically, identify or distribute sets of questions for you to work on. The online system Desire 2 Learn (www.umanitoba.ca/d2) will be used for this course and this is where you will find course related materials and announcements.

Tests

There will be 2 midterm tests scheduled during the Lab time (Mondays @ 2:30 p.m.–3:45 p.m. in 124 Machray Hall). Each of these tests is worth 25% of your final grade. The midterm tests and the final examination are closed book. Statistical tables will be provided if required. A non-programmable calculator should be used if it is necessary (graphing calculators are not permitted). However, other electronic devices, such as cell phones and MP3, are strictly prohibited. There will be **NO** make-up (deferred) midterm exams for this course. If you miss a mid-term exam, **have a valid excuse**, and **notify me within 48 hours of the scheduled exam**. Students who miss the midterm tests with legitimate reasons will have the midterm weights added to the final examination.

Lab:

Once a week, starting September 9th, there will be compulsory lab held in 124 Machray hall (2:30–3:45 p.m.). Generally, a teaching assistant will be solving selected problems and answering other questions that you might have.

Main Textbook

An Intermediate course in Probability. Allan Gut. 2nd Edition. Springer Texts in Statistics: New York (2009). [Available free as SpringerLink e-Book through the library].

Other Resources:

Not required. On 2 hour reserve in the Science Library

Introduction to Mathematical Statistics. 6th Edition. Hogg, McKean and Craig. Pearson/Prentice Hall, 2005.

Introduction to probability and Mathematical Statistics. 2nd Edition. Bain and Engelhardt. Duxbury/Thompson Learning, 1992.

Statistical Inference. Casella and Berger. Duxbury, 2002.

Tentative Topics

We will cover the first 6 chapters of the textbook (not necessarily in same order as in the textbook).

- Multivariate Random Variables (transformations, sampling distributions, etc.)
- Conditioning (a review)
- Transforms (generating functions, moment generating functions, etc.)
- Order Statistics

- The multivariate Normal Distribution (definition, distribution of quadratic forms, Cochran's theorem, etc.)
- Convergence (in distribution, in probability, almost sure, etc.)
- Other topics as time permits

Voluntary Withdrawal

Note that the voluntary withdrawal date is November 12, 2014.

EXPLORER INNOVATOR PIONEER ADVENTURER VISIONARY TRAILBLAZER

IN THE CASE OF A FIRE ALARM:

- REMAIN CALM
- IF IT IS SAFE, EVACUATE THE CLASSROOM OR LAB
- GO TO THE CLOSEST FIRE EXIT
- DO NOT USE THE ELEVATORS
- IF YOU NEED ASSISTANCE TO EVACUATE THE BUILDING, INFORM THE INSTRUCTOR **NOW**
- IF YOU NEED TO REPORT AN INCIDENT OR A PERSON LEFT BEHIND DURING A BUILDING EVACUATION, CALL **SECURITY SERVICES 204-474-9341**
- **DO NOT REENTER THE BUILDING** UNTIL THE "**ALL CLEAR**" IS DECLARED BY A FIRE WARDEN, SECURITY SERVICES OR THE FIRE DEPARTMENT



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) can be found at:

<http://www.umanitoba.ca/faculties/science/student/webdisciplinedocuments.html>

or through the Faculty of Science home page at:

<http://umanitoba.ca/faculties/science>.

Typical penalties imposed within the Faculty of Science for academic dishonesty are also described. See also:

<http://crscalprod1.cc.umanitoba.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=60&chapterid=227&topicgroupid=4056&loadusercredits=False>.

2014-2015 REGISTRATION ADVISORY

Important Note from the Dean 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;
- 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. For example, STAT 1000 cannot be held for credit with STAT 2220.

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 may not be used in your degree program. There will be no fee adjustment. This is not appealable. Please be sure to read the course description for this and every course in which you are registered.