

University of Manitoba  
Faculty of Science  
Department of Statistics  
Winter 2013

**Course Title:** Mathematical Statistics  
**Course:** STAT 3800 CRN – 22796  
**Class Time:** MWF 1:30-2:20pm  
**Location:** 315 Machray Hall  
**Lab:** M 2:30-3:55pm 111 Armes

**Instructor:** Dr. Katherine Davies  
**Office:** 329 Machray Hall  
**Telephone:** (204) 480-1060  
**Email:** Katherine\_Davies@UManitoba.CA  
**Office Hours:** MW 10:30-11:30am, Th 1:30-2:30pm

I encourage students to contact me throughout the course whenever they feel the need. Whether you are asking a question about course material or are requesting to arrange a meeting, you can contact me by phone, email or in person. I have listed office hours above and I will do everything in my power to always be available during those times, however, sometimes important meetings are scheduled at that time without my consent. If an office hour is cancelled, I will notify you and if necessary, substitute it with a new one. These hours are not the only time I am available to you. Outside of my office hours, I welcome students to come to my office at other times which are convenient to them. To make an appointment, you can call me in my office or send me an email. Please note that I encourage interaction with your peers with respect to learning the material in the course and hence, if students prefer to come as a group to my office, that is okay with me.

### General Information

The prerequisites for this course is STAT 3400 (C) or the former STAT 3050 (C). This course is not to be held with the former STAT 3600.

On the term test dates, attendance in the labs is necessary since this is where and when your term tests will take place. In the remaining labs, attendance in the lab is recommended for you in order to get the maximum value out of this course. In non-test labs, a qualified TA will be present to answer questions you may have and work through some of the practice problems. The online system JUMP will be used for this course and this is where you will find course related materials and announcements.

### Course Description

Below is a list of units to be covered in this course (time permitting):

1. Multivariate Random Variables
2. Conditioning
3. Transforms
4. Order statistics
5. The Multivariate Normal Distribution
6. Convergence
7. Introduction to Inference

## Course Objectives and Expectations

My primary objectives in this class are for you to learn the material but also, to have a good learning experience and to succeed. In order for us both to succeed in this course, we can have the following agreements.

You can expect me to:

- plan the course and alter that plan as needed;
- provide you with class notes and lots of opportunities to practice applying the course material;
- be respectful, courteous and provide a good learning environment;
- give you feedback as the course progresses, primarily by returning your tests in a timely manner and going over it shall you desire this.

What I expect from you:

- attend class;
- ask questions when you have one, inside or outside of class;
- be courteous and respectful, which includes turning off your cell phone during class;
- only use a laptop in class for class purposes;
- check JUMP regularly;
- write your tests legibly and in the order the questions are provided.

## Course Materials

There are three components to the course materials that are recommended to succeed in this course: (1) class notes; (2) practice problems; (3) suggested textbooks.

- (1) You are responsible for creating your own set of **class notes** based on the lectures.
- (2) There will be approximately 3 sets of practice problems for this course which cover the various topics. These questions will provide you with a way to grasp the material and also test your understanding. Besides providing good practice, **I will put at least one problem from each set on each of your term tests and one on your final exam.**
- (3) There are two **suggested textbooks** for this course. The first is *An Intermediate Course in Probability* by A. Gut (2009) and the second is *Introduction to Mathematical Statistics* by Hogg, McKean and Craig, 7th edition (Pearson, 2013). These can act as a reference for you for additional reading. The books can be purchased at the bookstore and there are also copies on reserve in the Sciences and Technology Library (which is located on the second floor of Machray Hall) and can be borrowed for up to 7 days.

## Course Evaluation

There will be two components to your final grade: term tests and final exam. The weights of these three components are:

Term tests - 50% (30% for the best of the two, 20% for the other)

Final Exam - 50%

## Test/Exam and Grade Information

The two term tests will take place during the labs with *tentative* dates as **February 11, 2013 and March 18, 2013**. Should one of these dates change, you will be informed in advance. The tests will contain between five and eight problems and be 75 minutes in length. The questions will require you to write solutions; part marks will be given accordingly. As each term test date approaches, I will provide you with information about what you are required to know for the test. There are NO makeup tests. Should you miss a term test, the weight goes to the final exam. Tests will be returned to you in class and solutions will be posted shortly after. Should you desire to go over your term test, I will gladly meet with you at a time convenient for both of us. The final exam will be 3 hours in length and also require written solutions. The final exam will take place during the April examination period as scheduled by the Registrar's office. More information regarding the final exam will be provided to you as the date approaches. Your term test and exam questions will be similar to those worked out in class, in your assignment and practice problems and on previous tests/exams. The final exam and term tests are closed book and only non-programmable calculators are permitted.

For your final grade, I have the following "guarantees":

Minimum Percent Grade Required	Letter Grade
90	A+
80	A
75	B+
70	B
65	C+
60	C
50	D

## Other Important Information

(1) It is your responsibility to be aware of the last day for voluntary withdrawal. For this term, the Registrar's office has this day as **March 20, 2013**.

(2) *A Note about Academic Dishonesty*: It is important that you understand what constitutes academic dishonesty and that you are familiar with the consequences. For descriptions of these terms and other issues, please see <http://umanitoba.ca/science/student/webdisciplinedocuments.html>.

(3) *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, BIOL 1000 cannot be held for credit with BIOL 1020.

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.