

University of Manitoba – Department of Statistics
STAT 7250: Order Statistics and Applications
Winter Term 2021

Course Details

Course Number & Title	Stat 7250: Order Statistics and Applications
Section & CRN	Section A01, CRN: 60151
Class Schedule	T 11:45am-1:45pm CST
Class Location	Remote Learning Zoom Link: https://zoom.us/j/91713389967 Zoom Passcode: 874716

Instructor Contact Information

Instructor	Dr. Katherine Davies
Email	Katherine.Davies@UManitoba.CA
Zoom Office Hours	By appointment. Zoom Link: https://zoom.us/j/91713389967 Zoom Passcode: 874716

Course Description

This course will introduce you to order statistics, their properties and applications to various inferential problems. The tentative topics to be covered are as follows:

1. Introduction and Preview
2. Basic Distribution Theory
3. Discrete Order Statistics
4. Order Statistics from Specific Distributions
5. Order Statistics in Statistical Inference
6. Moment Relations, Bounds and Approximations
7. Characterizations using Order Statistics
8. Asymptotic Theory
9. Record Values
10. Applications and Computational Aspects in R

Course Materials, Online Tools and Supplemental Readings

Course Notes	The course notes are the primary component of the course material. They will be posted in advance on UM Learn system and discussed during lectures. It is advisable to read them ahead of lectures.
Textbook	The suggested textbook for this course is <i>A First Course in Order Statistics (2008)</i> by Arnold, Balakrishnan and Nagaraja. While the course notes are the primary component of the course material, the textbook is an excellent resource and is where I will be selecting assignment questions.
Zoom	Zoom is an online platform for hosting and participating in meetings. This is where we will meet for class lectures. Any appointments we make, as well as your test and final, will also take place on Zoom. You do not need to have a Zoom account in order to use a link to a meeting (office hour), however you will be prompted to download the application.

Course Assessments

Assignments	There will be three (or four) assignments during the term; they will be posted on UM Learn system . The primary goal of the assignments is to provide you with practice working with order statistics and ordered data. While I encourage discussion with classmates, you are expected to write your assignment independently; copying, in whole or in part, the work of another will not be tolerated and will result in disciplinary action (see Academic Integrity section). Your assignment solutions will need to be scanned and uploaded to UM Learn system by the due date. Late assignments will not be accepted.
Term Test	There will be one closed book midterm test. It will be 2 hours in duration and is tentatively scheduled for March 16, 2021 during class time. You will be required to upload your test solutions to the UM Learn system within 15 minutes of the end of the test period. With legitimate reasons, if you miss this test, its weight will be shifted to the final exam. You are required to be on Zoom, with your camera on, during the test. There are no make-up tests.
Final Exam	Your final exam will be closed book and will be scheduled for 3 hours. You will be required to upload your exam solutions to the UM Learn system within 30 minutes of the end of the exam. It will take place during the April exam period, with the date and time to be scheduled by the Registrar's office. You are required to be on Zoom, with your camera on, during the exam.

Course Evaluation

Final Marks

Your final mark for the course will be based on the following components:

Assignments	35% (equally weighted)
Midterm Test	25%
Final Exam	40%

Class Communications

The University requires all students to activate an official U of M email account, which should be used for all communications between yourself and the university (including all your instructors). All these email communications should comply with the University's policy on electronic communication with students, which can be found at:

http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html

Academic Integrity

It is important that you understand what constitutes academic dishonesty and that you are familiar with the very serious consequences. The following link describes various types of academic dishonesty (including plagiarism, cheating, inappropriate collaboration and examination impersonation), and offers several resources to help students understand and avoid academic dishonesty:

<http://umanitoba.ca/student-supports/academic-supports/academic-integrity>

The Student Discipline Bylaw, which describes the potential consequences of academic dishonesty, can be found at the following link:

http://umanitoba.ca/admin/governance/media/Student_Discipline_Bylaw_-_2018-09-01.pdf

Use of Copyrighted Material

Please be aware of copyright laws during this course. All notes, videos, assessments and solutions are either my own intellectual property or that of the University. We may also use other copyrighted content in this course. I will ensure that the content I use is appropriately acknowledged and is copied in accordance with copyright laws and University guidelines. Copyrighted material must not be distributed in any format without permission, and this implies that you do not have permission to upload any course material (or other copyrighted material) to any note sharing website.

More details are available online at: <http://umanitoba.ca/copyright/>

Student Accessibility Services

If you are a student with a disability, please contact Student Accessibility Services (SAS) for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

Technological Requirements

You will require the following minimum technological requirements:

1. A computing device where one can create and edit documents,
2. An internet connection capable of streaming videos and downloading software, and
3. Access to a web-cam and microphone.

ROASS Schedule A

Schedule “A” of the *Responsibilities of Academic Staff with regards to Students* (ROASS) policies of the University of Manitoba lists resources and policies for students. It is important that you familiarize yourself with these resources and policies. This document is available from the Department of Statistics web page at:

<https://www.sci.umanitoba.ca/statistics/wp-content/uploads/sites/4/2019/11/Schedule-A-ROASS-Statistics.pdf>