

STAT4170/STAT7240

Winter Term - 2022

Course Title: Lifetime Data Analysis (Survival Analysis)

CRN: 60915/ 60917

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Lectures hours: 1:00pm-2:15pm on Tuesdays and Thursdays on Zoom. Lecture videos will be posted on UM Learn system regularly.

Virtual Office hours: 2:00pm-3:00pm on Wednesdays or by appointment.

Course web: All course materials will be posted on UM Learn system regularly.

General description: An introduction to basic principles and techniques for survival analysis in biostatistics and reliability, with emphasis on both theory and applications. Topics to be covered include: censoring, survival, hazard and other functions, parametric, semi-parametric and nonparametric methods, proportional hazards regression. The computer softwares SAS and R will be used to analyze data.

Prerequisites: (one of STAT3100, the former STAT3600, or the former STAT 3800) and (one of STAT 3450, the former STAT3120, or the former STAT3470).

Recommended references:

1. *Statistical methods for survival data analysis* (4th edition), E. T. Lee and J. W. Wang, John Wiley and Sons, New York, 2003.
2. *Statistical models and methods for lifetime data* (2nd edition), J. F. Lawless, John Wiley and Sons, New York, 2003.
3. *Modelling survival data in medical research* (3rd edition), David Collett, Chapman & Hall/CRC, 2003.

Grading:

Four Assignments: 20%
Four tests: 80% (20% each)

Note:

- Each test is 50 minutes. The first three tests will be tentatively at 1:00pm-1:50pm on Thursday, March 3, Thursday, March 24, and Thursday, April 14. The fourth test will be in the final exam period and will be scheduled by the Registration Office.
- If a student misses a test and notifies me within 48 hours of the test with a legitimate reason, then the other tests will be worth 80%. If a student misses two or more tests, a medical documentation and an

online oral exam, where the student will be asked to solve problems in front of the instructor, may be required.

- If classes are still online after Winter break, the tests will be online. A calculator is necessary. During the tests, you are only allowed to see the instructor's lecture notes, your assignments, and statistical tables provided by the instructor on UM Learn. No other (online) resources are allowed. Students will be expected to submit pdf and/or picture files to Crowdmark during quizzes. It is your responsibility to ensure that your submissions are readable. It is also your responsibility to make sure that your solutions are submitted to the correct place. Solutions that are submitted in the wrong places will not be marked.
- Students in STAT 7240 are required to do some extra work for the assignments and tests.

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%).

Important dates:

Date	Information
Feb. 4	Last date to drop a course without penalty
Feb. 21	Louis Riel Day, no class
Feb. 22-25	Winter term break, no classes
March 3	Test 1
March 24	Test 2
April 14	Test 3
April 25	Last day to VW courses

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://www.umanitoba.ca/student/resource/student_advocacy/academicintegrity/students/a-to-i-what-is-academic-integrity.html

http://www.umanitoba.ca/student/resource/student_advocacy/academicintegrity/students/student-academic-misconduct-faq.html

Copyrighted Material:

All course notes, assignments, tests, exams, practice exams, and solutions are the intellectual property of your instructor. Reproduction or distribution of these materials is strictly forbidden without my consent and may be a violation of Canadian copyright law and UM policies.

Class Communication

The University requires all students to activate an official University email account. Please note that all communication between your instructor and you as a student must comply with the Electronic Communication with Students Policy. Please see:

http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_

students_policy.html

You are required to obtain and use your U of M email account for all communication between yourself and the university.

Student Accessibility Services

If you are a student with a disability, please contact SAS for academic accommodation supports and services such as 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.

<http://umanitoba.ca/student/saa/accessibility/>

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>