

STAT4170/STAT7240

Winter Term - 2019

Course Title: Lifetime Data Analysis (Survival Analysis)

CRN: 55363 / 52143

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Lecture hours and location: Tuesday and Thursday: 11:30am - 12:45pm, 316 Machray Hall

Office hours: Tuesdays and Thursdays: 1:30pm-2:30pm or by appointment.

Course web: All course materials will be posted on the 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 software SAS will be used to analyze data.

Prerequisites: STAT 3480 and STAT 3800 (or STAT 3600). Some knowledge of calculus is also assumed.

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:

Three Assignments 15%
Midterm Test 35%
Final Examination (2 hours) 50%

Note:

1. The midterm test will be tentatively on Tuesday, February 26, 2019, during the class time.
2. Midterm exam missed with final-exam-type excuse will transfer 35% to final-exam contribution rather than being make-up with a make-up test. 0 with no excuse.
3. Both the mid-term test and final examination are closed book. A calculator is necessary. Required statistical tables are provided.
4. Students in STAT 7240 are required to do some extra work for the assignments and exams.

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://umanitoba.ca/science/undergrad/resources/webdisciplinedocuments.html>

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

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.

Recording of Class Lectures

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Use of Electronics in the Classroom

It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. A student may use technology in the classroom setting only for educational purposes approved by the instructor and/or the University of Manitoba Accessibility Services. Students should not engage in electronic messaging/posting activities (e-mail, texting, video or voice chat, social networking (e.g. Facebook)) or electronic gaming during scheduled class time.

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 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.

<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:

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