

STAT 5142/6042 25 FS – sec. 001
Survival Analysis and Logistic Regression

Tuesdays/Thursdays, 9:30 am – 10:50 am, French Hall West, rm 4211

Instructor: ***Seongho Song***
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Office Hours: **Tuesdays/Thursdays 11:00 am – 12:00 pm or by appointment**

Course Description: The course covers basic concepts, models, methods, theories, and applications in survival analysis and a brief introduction to logistic regressions. Both parametric and nonparametric survival analysis methods are discussed. R statistical software will be used. The goal is to equip the students with theories and practical skills to carry out survival analysis and logistic regression modeling in a practical setting.

Course Webpage: Course related information will be posted on UC Canvas (uc.instructure.com), including course syllabus, announcements (**choose “Notify me right away” as notification preferences on Canvas**), lectures, and homework assignments, etc. **Please visit Canvas frequently.**

Textbooks: Moore, *Applied Survival Analysis Using R*, Springer (ebook freely available through UC library)
Lee and Wang, *Statistical Methods for Survival Data Analysis*, 4th edition, Wiley

Recommended readings

Collett, *Modeling Survival Data in Medical Research*, 3rd edition, CRC Press

Klein and Moeschberger, *Survival Analysis: Techniques for Censored and Truncated Data*, 2nd edition, Springer

Additional readings will be assigned along lectures.

R can be freely downloaded from <http://www.r-project.org>.

Final Course Grade:

The upper limits for contributions to the final grade are HW (40%), Midterm (30%), and Final Exam (30%). The final grade will be converted to the traditional letter grade based on the following chart:

96-100:	A	87-89:	B+	77-79:	C+	67-69:	D+	<60:	F
90-95:	A-	83-86:	B	73-76:	C	63-66:	D		
		80-82:	B-	70-72:	C-	60-62:	D-		

Please note STAT 6042 is a graduate level course. If you are enrolled in STAT 6042, an “F” will be assigned for a letter grade scale equal to C- or below.

Students should keep all returned work until they have received their final grade. It is the student’s responsibility to get the graded homework and the exams from the instructor.

Tentative Schedule (as of August 18, 2025)

Week Beginning:	Topic	Reading Assignment
Week 1	Contingency Table: Mantel-Haenszel Test; Simpson's Paradox Introduction to Logistic Regression Model	Assigned Reading
Week 2		
Week 3	Concepts and Analysis of Survival Data	Ch1, Ch2
Week4	Estimating Survival Functions: Nonparametric Methods	Ch2, Ch3
Week 5		
Week 6	Comparing Survival Distributions: Nonparametric Methods Reading day, No class on Oct 9(Th)	Ch4
Week 7		
Week 8	The Cox Regression Model	Ch5
Week 9		
Week 10	Model Selection and Interpretation <i>Midterm exam/project on Thursday, Oct 30</i> <i>Review on Tuesday, Oct 28</i>	Ch6
Week 11	Model Checking in the Cox Regression Model	Ch7
Week 12	Parametric Survival Models	Ch10 and assigned readings
Week 13		
Week 14	<i>No class on November 27 (Thanksgiving Weekend Holiday)</i>	
Week 15	Time Dependent Covariates	Ch8
Week 16	Final Exam Week <i>Final Project Due Tuesday, Dec. 9, 2025</i>	

Homework:

- 3 - 4 sets of homework will be assigned during the semester.
- Homework assignments will be announced one week before its due date. Both the assignment and its due date will be available on Canvas.
- No late hand-in. If extenuating circumstances exist, you must speak directly to the instructor.
- Prepare your homework with problems in order, on **one side** of standard 8½ × 11 sheets, **stapled** in the upper left-hand corner. Please note that your solutions need to be presented in **a clear, readable format** with sufficient details. **No credit** will be given to solutions lack of details or hard to read.
- Electronically handed-in homework will **not** be accepted.
- Homework assignments must be handed in **at the beginning of the class** on the due date. Do not slide them under the instructor's office door or drop them off in the instructor's mailbox. **They will not be accepted.**
- Your homework will be graded with feedback from the instructor. Some of the problems will be discussed in class. Please do not hesitate to contact the instructor if you have any question.

Late hand-ins

Only students with legitimate excuses will be allowed late hand-ins for any course work with a due date. The student must request late hand-ins within a reasonable amount of time after one of the following excusable events occurs.

- **Illness.** Need official certification from your doctor, typed on medical stationary (with their license # to practice medicine stated).
- **Attending the funeral of an immediate relative.** Need proof of attending the funeral with the date of the ceremony.
- **Mandatory courtroom appearance.** Need a copy of your official court summons with the date.
- **Winthrop Athletic event participation.** Need a signed letter from your coach no later than one week prior to the due date.

Examinations:

- There will be a Midterm and a Final exam during the semester.
- **Exam dates**

Midterm exam/project – Thursday, October 30

Final Project – Tuesday, December 9

- **The chapters to be covered in Midterm exam/project will be announced one week before its due date.**
- The examination date is as specified in the syllabus or as announced if there is any change (updates will be posted on Canvas accordingly). **Exams will cover materials from the textbook, lectures and handouts.**
- The exams are **open book**. Students are required to work independently and show their own work. Discussion with any individual, in-person or virtually during the exam time, in or outside of the class, is not allowed (except with the instructor).
- There will be no scheduled make-up examination. When there are unavoidable circumstances, the student must contact the instructor **before** the examination date. Documentation is required. For medical circumstances, the student must contact the instructor with a written medical excuse document signed by a qualified professional.

Withdrawals: Last day to withdraw: **November 21, 2025 @ 11:59 pm**. For class withdrawal and refund info, please go to Fall 2025 Dates & Deadlines Calendar at

<https://www.uc.edu/about/registrar/calendars/fall-2025/dates-deadlines.html>

Communication

- ✓ Course announcements and materials are posted on Canvas through the semester.
- ✓ Make good use of the instructor's office hours. **It is extremely importance for you to ask the instructor's help as soon as possible if you have difficulty in the course materials covered.**
- ✓ Beyond class and office hours, the best way to contact the instructor is by email (xia.wang@uc.edu). Please note the course email correspondence must be done via UC email accounts. The instructor cannot send email to any other account (i.e. gmail, hotmail, yahoo, etc.)

Classroom Etiquette:

Our goal is to have a classroom atmosphere that allows the class to learn the material without distractions. The following behaviors will help us achieve this:

- ✓ Please turn off your cell phones or set it to vibration before coming to class.
- ✓ Please arrive in class on time.
- ✓ Please do not disrupt others during class.
- ✓ Please do not leave class early unless you have to. If you plan to leave early, sit near the door so as to disturb as few people as possible.

Academic Integrity Policy: The University Rules, including the Student Code of Conduct, and other documented policies of the department, college, and university related to academic integrity will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct. (http://www.uc.edu/conduct/Academic_Integrity.html)

Accessibility Policy: The University of Cincinnati is committed to providing all students with equal access to learning opportunities. Disability Services [now called Accessibility Resources] is the official campus office that works to arrange for reasonable accommodations for students with an identified physical, psychological or cognitive disability (learning, ADD/ADHD, psychological, visual, hearing, physical, cognitive, medical condition, etc.) Students are encouraged to contact Disabilities Services to arrange for a confidential meeting to discuss services and accommodations. Contact should be initiated as soon as possible to allow adequate time for accommodations to be arranged.

If you have a disability (e.g., visual impairment, hearing impairment, physical impairment, communication disorder, and/or specific learning disability, etc.) which may influence your performance in this course, you must meet with the Disability Services Office (DSO) to arrange for reasonable accommodations to ensure an equitable opportunity to meet all the requirements of this course. If you require accommodations due to disability, please contact DSO at 513-556-6823, Campus Location: 210 University Pavilion. You will be provided an Accommodation Form indicating your accommodation needs for the semester. Please present this form to the instructor AS SOON AS POSSIBLE to ensure your accommodation needs are discussed, agreed upon, and provided.

Counseling Services Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, students can receive three free professional counseling sessions upon request through the Counseling and Psychological Services (CAPS). These sessions are not associated with student's insurance coverage. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concerns. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-244-9984.

Diversity and Inclusion This class is committed to the fundamental principles of academic freedom and human dignity. Diversity in all forms is something we welcome, we foster, and we prize. We believe that honest attempts to understand the perspectives of others facilitates learning, and we will strive to achieve this goal at all times. We strongly disavow discrimination -- including harassment -- on the basis of race, national or ethnic origin, religion, sex or gender identity, disability, age, sexual orientation, or veteran status.

Student Religious Accommodations Ohio law and the University's Student Religious Accommodations for Courses Policy 1.3.7 permits a student, upon request, to be absent for reasons of faith or religious or spiritual belief system or participate in organized activities conducted under the auspices of a religious denomination, church, or other religious or spiritual organization and/or to receive alternative accommodations with regard to examinations and other course requirements due to an absence permitted for the above-described reasons. Not later than fourteen days after the first day of instruction in the course, a student should provide the instructor with written notice of the specific dates for which the student requests alternative accommodations. For additional information about this policy, please contact the Executive Director of the Office of Equal Opportunity and Access at (513) 556-5503 or oeohelp@UCMAIL.UC.EDU.

(This syllabus is subject to changes.)