

STA 4712 Introduction to Survival Analysis Spring 2021
Class No. 22199, Section 17A7, MWF 3rd period, 9:35am - 10:25am
Asynchronous lectures

Instructor Deborah Burr, 116C Griffin-Floyd Hall (FLO); Office Hours: Tue 3:30pm - 4:20pm (for 4712 only); Mon, Wed, Fri, 11:45am - 12:35 pm (for 4210, 4211, 4712), or by appointment, held via Zoom (see course website for Zoom Personal Meeting ID); Email: burr@stat.ufl.edu (put “STA 4712” in the subject line).

Teaching Assistant Maoran Xu, maoranxu@ufl.edu, Office Hours: TBA

Online Course Site: elearning.ufl.edu

Contact Hours There are three contact hours per week; these will mainly occur in prerecorded lectures which will be available before each scheduled class time (asynchronous lectures). There will also be office hours on Tuesday from 3:30pm - 4:20pm for 4712 students, and on Monday, Wednesday, and Friday 11:45am - 12:35pm for students from 4210, 4211, and 4712.

Course Communication

Discussion forum for questions about course content

Zoom office hours (Instructor hrs are MWF 11:45am - 12:35pm, Tu 3:30pm) for questions about course content

E-mail for administrative matters only (Put “STA 4210” in the Subject line)

Required Materials

Lecture notes Will be posted under Files on course website. The course notes are an outline of what I will go over in lecture and are *not* a substitute for watching the video lectures.

Textbook David Collett, *Modelling Survival Data in Medical Research*, 3rd ed.

Scientific calculator You need one which will compute the mean and standard deviation automatically. This is for carrying out short computations to illustrate statistical methods which are covered in the text and in lecture. (You can choose to use a spreadsheet, or R, for this purpose instead.)

Statistical Software We will use the free statistical computing language R; download it in the first week of the semester from <http://www.r-project.org>. Also download Rstudio from <http://www.rstudio.com> (Desktop free license).

Prerequisite STA 4210 Regression Analysis, or the equivalent.

Course Description This course discusses “time to event” data, where the event can be response to treatment, relapse of disease, or death. Often we wish to quantify the relationship between the time to event and prognostic factors such as mode of therapy, age of patient, and severity of disease. This course will cover inference for a single population, methods for comparison of two or more populations, and methods for doing regression analysis. Procedures will include the Kaplan-Meier estimator, the log-rank test, and Cox proportional hazards regression. All these procedures handle the common case of censored data, where the information on some individuals is incomplete in the sense that the event had not yet occurred at the termination date of the study. Some basic theoretical material will be covered in order to show how methods of mathematical statistics are adapted to handle censoring. Computation on the computer is crucial for implementing survival analysis methods. Computations will be carried out in the R statistical programming language.

Grading Your final course grade will depend on your course score based on the following four components with their respective weights:

Weekly homeworks:	On lecture topics	60%
Project #1	Use of the Kaplan-Meier estimator	12%
Project #2	Comparison of survival experience of several groups	14%
Project #3	Cox model for regression	14%

The assignment of letter grades will be determined as follows (cutoffs will be no stricter than indicated, and may be relaxed): A 93–100; A[−] 90–92.9; B⁺ 87–89.9; B 82–86.9; B[−] 79–81.9; C⁺ 76–78.9; C 70–75.9; C[−] 67–69.9; D⁺ 64–66.9; D 60–63.9; D[−] 55–59.9; F < 55

The calculation of your final average will be done outside of Canvas; the formula used by Canvas will not necessarily produce the final average according to the course grading scheme.

Homework There will be weekly homeworks on lecture topics, every week except when a project is due, which together count 60% of your grade. Homework must be turned in on time each week. Homework will be automatically submitted on Canvas when it is due. Late homework will not be accepted. Show your work clearly on homeworks; to get credit for an answer, it is not sufficient to simply report a numerical answer.

There are three projects, each of which requires you to write a report of a data analysis. The analysis will be guided by questions in the assignment; however, student initiative in carrying out additional analysis steps is invited. Each project submission should consist of a single computer document which is uploaded on Canvas.

Course Policies

Netiquette You are expected to follow rules of common courtesy in all class discussions, email messages, threaded discussions, and chats. See

<https://stat.ufl.edu/files/NetiquetteGuideforOnlineCourses-LLC.pdf>.

Privacy of zoom classes Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

Honor Code You may discuss homeworks and projects with other students, with the TA, or with the instructor. You are expected to demonstrate your own understanding of the question by producing a written response in your own words; **your final write-up must be your own work**. Refer to the UF Honor Code at <http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>.

Disabilities Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluations Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <http://gatorevals.uaa>.

ufl.edu/students/. Students will be notified when the evaluation period opens (usually near the end of the semester), and can complete evaluations through the email they receive from GatorEvals, or in their Canvas course menu under GatorEvals. Summaries of course evaluation results are available to students at <http://gatorevals.aa.ufl.edu/public-results/>.