

STA 4502
STA 5507

Introduction to Nonparametric methods
Applied Nonparametric Methods

Fall 2024

Course Information

Time: Tue 11:45 a.m. – 1:40 p.m. (Period 5-6) AND 0134
Thu 11:45 a.m. – 12:35 p.m. (Period 5) TUR 2319 ,

Instructor: Dr. Sayar Karmakar

Office: Zoom (<https://ufl.zoom.us/j/97605846243>) **E-mail:** sayarkarmakar@ufl.edu

Office Hours: (might change occasionally) Thu 12.40-1.55 pm. Over zoom

Teaching Assistant: Yuhan Tian

Office: FLO 218 and Zoom **E-mail:** yuhan.tian@ufl.edu

Office Hours: FLO 218 Monday 9.30 AM-11 AM

Office Hours: Online at <https://ufl.zoom.us/j/5556999302> Friday 9.30 AM-11 AM

Prerequisite

STA 2023 or STA 3032 or STA 4210 or STA 4322.

Course Contents

A study of basic concepts in distribution-free statistics with applications. Topics include one-sample and two-sample interval estimation and hypothesis testing for proportions and medians, analysis of variance, association, and linear and multiple regression.

Course goals

After successful completion of the course, students will be able to draw inferences about the following populations and their parameters:

- one proportion and two proportions (dependent and independent samples)
- one median and two medians (dependent and independent samples)
- distribution symmetry
- two variances
- distribution functions
- three or more medians (independent and dependent samples)
- bivariate association and correlation
- regression slope, intercept, and output (simple linear and multiple)

Text

Book name: Nonparametric Statistical Methods 3rd Edition

Author(s): Hollander, Wolfe, Chicken

ISBN: 978-0470387375

Coverage: 1.1-1.2, 2.1-2.3, 3.1-3.9, 4.1-4.4, 5.1-5.5, 6.1, 6.5, 6.9, 7.1, 7.3, 7.5, 7.9, 7.10, 8.1-8.5, 9.1-9.6, and 10.1-10.3 from the textbook

Course Website

Canvas course page. Please check the canvas site regularly. Most course documents and important information, including homework exercises and solutions, sample exams and special announcements, will be posted in canvas.

Mode of teaching

This class is offered completely in-person. There is a slim possibility that it might change accordingly as the situation develops.

- The classes except for the following dates are fully in-person. The online classes will be held synchronously with original class schedule.

Dates for online class: Sep 5.

There is a possibility of one more online class but that will be announced well ahead of time.

There is no class scheduled so far on Nov 28 but an online class might be used to cover any classes missed due to hurricane or other university mandated holidays.

- The quizzes are taken during classroom time but this might change if a portion of students have to go back to online.
- Similarly, exams are also taken in-person during classtime but this might change if a portion of students have to go back to online. If any student has to take the class online, we will allow flexibility for all students to choose how they want to give the exam. Regardless where you take the exam, at the end of the exam, there will be extra time to scan and upload it to the speedgrader system,
- At this point, it is mandatory to have one office hour for the TA and the instructor to be held in-person but it is highly recommended that the students coming in wears a mask to make the instructor and the helping TA more comfortable. We will do a poll in the beginning of the class to see if we can move both office hours to zoom.
- Class policy flexibility: Some of these policies might need to change depending on how the class behaves or performs. Students should feel free to directly email the instructor to discuss concerns.
- Canvas announcements: In general, the number of announcements will be considerably more than an in-person class. These will generally talk about when certain lecture notes/exams become available or about some class policy. The zoom links for the class and office hours

(both instructor and TA) are going to be the same throughout. This will be sent in the morning of the first class. Please keep checking the canvas announcement page regularly.

In response to COVID-19, the following recommendations are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

- If you are not vaccinated, we recommend getting vaccinated. Vaccines are readily available and have been demonstrated to be safe and effective against the COVID-19 virus. Visit one.ufl.edu for screening / testing and vaccination opportunities.
- If you are sick, stay home. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 to be evaluated.
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

Exams, Quizzes and Grades

- The course is divided into three parts. At end of each part there is a non-cumulative exams that covers syllabus primarily from that part only.

The * includes the Tuesday classes which are typically two periods. Quizzes will be taken in-class and they will last typically 20 minutes or less.

The ** indicates the Tuesdays when we will have the quizzes.

1. Part 1: Intro: Aug 22 Aug 27* Aug 29 Sep 3** Sep 5 Sep 10* Sep 12 Sep 17** **Sep 19 (Exam 1)**
2. Part 2: Sep 24* Sep 26 Oct 1** Oct 3 Oct 8*(Taught by TA) Oct 10 Oct 15** Oct 17 **Oct 22* (Exam 2 on first period)**
3. Part 3: Oct 22 (second period) Oct 24 Oct 29* Oct 31 Nov 5** Nov 7 Nov 12* Nov 14 Nov 19** Nov 21 [Nov 21-30 Reading period (Thanksgiving break)] **Dec 3 (Exam 3)**

- You will be permitted to bring one 8.5 by 11 inches sheet of paper with formulas or notes written on both sides to each exam.
- Make-up exams will be offered and you must either let the instructor know well before the scheduled day of the exam which you need to be excused from (for a non-emergency reason), or produce a proof of emergency (or medical problem) as soon after the missed exam as possible. We will try to restrict make-up exams to at most one per student.
- **Calculator:** A non-graphing calculator might be used for the exams and quizzes however you will not be penalized for not simplifying terms like $\binom{20}{4} / \binom{30}{6}$
- Letter grade allocation

B+	84 to < 88	A	91 to 100	A-	88 to < 91
C+	74 to < 77	B	80 to < 84	B-	77 to < 80
D+	64 to < 67	C	70 to < 74	C-	67 to < 70
E	< 55	D	60 to < 64	D-	55 to < 60

Note that, the scores shown in canvas does not account for conditional weightage of exams.

- There are six in-class quizzes out of which two worst will be dropped. These 4 will account for 25% of the final grade.
- There are 3 in-class exams with 30%, 30% and 15% weight towards final grade. The choice of the exam that will have 15% weight is automatic as we will choose the worst of the three exam performance for downweighing
- You are encouraged to discuss homework problems with other students; however, you must answer on your own during the quizzes. Solutions to the homework exercises will be posted after the quizzes.
- The instructor and Teaching Assistant make every effort to ensure that grades assigned are scrupulously fair and reflect the quality of the work concerned. Due to this process of consultation and the use of uniform grading criteria, the TA has complete authority in all actions that he undertakes regarding the quizzes, and the instructor is unlikely to rescind any of his decisions.

Suggested Additional Exercises

In order to master the course material it is essential that you work as many exercises as possible. For this reason, along with the weekly homework exercises, additional suggested exercises from the textbook will also be posted on the course web-page on a regular basis. You are not expected to submit answers to these suggested exercises, but you should solve all of them to keep up with the pace of the course and thoroughly learn the material. This will also help you prepare for the exams.

Lecture Attendance

Classroom lecture attendance is fully expected, even if not strictly enforced. You are responsible for learning all material presented during lecture, and any topic covered is a potential exam topic (unless otherwise stated).

Reasonable Accommodations

To request classroom accommodation, please be certain that you have made all necessary arrangements with the Dean of Students Office, and obtain from them documentation to submit to the instructor at the time of your request. A request must be made to the instructor at least one week in advance of the date for which the accommodation is requested. This course information and policies sheet can be made available in alternative formats to accommodate print-related disabilities. Contact the instructor for more information.

Academic Integrity

Please familiarize yourself with the Student Honor Code and Academic Honesty Guidelines outlined in your University of Florida Student Guide at <http://www.dso.ufl.edu/sccr/honorcode.php>.