# STA 3024- Introduction to Statistics II
# Syllabus (Fall 2024)


## Instructor: Saurabh Bhandari

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Telephone: 352-392-1941 (not preferred for communication)

Office hours: MWF 3:15-4:15PM Office Location: Griffin-Floyd Hall (FLO) 101A


| Teaching Assistants: | Office Hours: |
|---|---|
| 1. Kathryn Yalch | WED 11:00AM-1:00PM (Zoom) and FRI 11:00AM-1:00PM (FLO 201) |
| 2. Kyle Weiner | TUE 1:00PM- 3:00PM (Zoom) and THU 1:00PM- 3:00PM (FLO Saw Library) |
| 3. Dylan Weiss | TUE 3:00PM- 5:00PM (Zoom) and THU 3:00PM- 5:00PM (FLO Saw Library) |

* FLO = Griffin-Floyd Hall

## Course Website in CANVAS: https://elearning.ufl.edu/

This is the portal for UF's E-learning website. You can log in using your Gatorlink username and password to access the course materials, announcements, grades, online quizzes etc.

## Course Description and Objectives

In this course, students learn how to summarize data, analyze it, and make appropriate decisions based on it. The sequence of courses STA 2023-3024 provides students with a firm foundation in the basics of applied statistical methods. The prerequisite for this course is STA 2023, which covered chapters 1-10 in the textbook (data collection, graphical and numerical summaries, probability and an introduction to statistical inference). Concepts from STA 2023 will be reviewed as needed.

The course focuses on the following four topics:

1. Analysis of Variance to compare three or more population means.
2. Simple Linear Regression and Multiple Regression to predict a quantitative response.
3. Analysis of Two-Way Tables to study the relationship between two categorical variables.
4. Nonparametric Statistics that do not require a Normal distribution of the response variable.

## Materials

1. **Required Lecture Notes: will be posted in Canvas for you to print or use electronically, and you can also purchase them at Target Copy.** The notes have an outline of the material, plus the computer output for the examples we will do together in class, so it is essentially your class notebook.
2. Required Scientific Calculator (around $10 to $15) that has some basic statistical functions like mean and standard deviation Graphing calculators are not allowed during the exams.

3. Recommended Textbook: Statistics, The Art and Science of Learning from Data, by Agresti, Franklin and Klingenberg, 5th edition, Pearson. This *optional* textbook is available in an electronic version that is purchased through UF All Access (inside of Canvas) and includes MyLab and Mastering to do the *suggested* homework electronically – details available on Canvas.

## Lectures

MWF 7th period (1:55 PM– 2:45PM) Pugh 170

All lectures are in-person.

## Online Quizzes

There will be **11** weekly online quizzes, administered through Canvas. You will have three opportunities to complete a quiz (with questions randomly generated each time). Each quiz will be worth 10 points, and the quizzes are worth 25% of your final grade, or as much as one exam. The purpose of the weekly quizzes is to help you revise the materials covered in the class during the week. More details will be announced in class and on the course website.

## Exams

There will be three exams given during the semester, each worth 100 points and 25% of your grade. They will take place during our regular class time, **in person**.

If a student is unable to take an exam at the scheduled time **due to extraordinary circumstances**, they must get in touch with the instructor **prior** to the exam time for any arrangements to be made for a makeup. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite under such extenuating circumstances. A grade of zero is the minimum punishment of any type of dishonesty on an exam.

| | | |
|---|---|---|
| Exam 1 | Friday, September 27 | In class |
| Exam 2 | Friday, November 01 | In class |
| Exam 3 | Wednesday, December 06 | In class |

## Grades

**Grade Structure:**

| | |
|---|---|
| Exam 1 | 25% |
| Exam 2 | 25% |
| Exam 3 | 25% |
| Quizzes | 25% |

**Grading Scale:**

| | | | | | |
|---|---|---|---|---|---|
| A | 90% to 100% | | C+ | 74% to 76% | |
| A- | 87% to 89% | | C | 70% to 64% | |
| B+ | 84% to 86% | | D | 60% to 63% | |
| B | 80% to 83% | | E | 59% and below | |
| B- | 77% to 79% | | | (No C-, D+ or D- given) | |

**UF Grading Policies:** https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

## Course Policies

**Email to Instructor – all email subjects should begin with STA 3024-XXXX** (for example: STA 3024- Question on Exam 1). Please be aware that statistical questions should be answered in person (in class or during office hours) since they often require pictures and formulas that make it very hard to communicate through email.

**Class Attendance Policy-** Requirements for class attendance and make-up exams, assignments, and other work in the course are consistent with university policies: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

**Privacy Policy** - Student records are confidential. Only information designated "UF directory information" may be released without your written consent.

**Students with Disabilities**: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://disability.ufl.edu/ ) by providing appropriate documentation. Once registered, students will receive an accommodation letter which will be sent to the instructor. Students with disabilities should follow this procedure as early as possible in the semester, and need to do this every semester. Accommodations will not be made retroactively, but only forward from the day that the letter was received. Special circumstances should be discussed with the instructor.

**University's Honesty Policy**: UF students are bound by The Honor Pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

**Grading**: Grades will be changed only when an error has been made; negotiation is not appropriate.

**Incompletes** are only assigned when extraordinary circumstances (such as an accident, or extended hospitalization), arising after the date for dropping the course, prevent the student from completing the course requirements. Having a failing grade in the course is not a valid reason for requesting an Incomplete. Information on **Medical Withdrawal** or how to **Drop a class** can be found in UF's website.

**Instructor / 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.

## Other University Services

**U Matter, We Care**: Information on services offered at UF for students in distress:

https://umatter.ufl.edu/

**Student Health Care Center**: 352-392-1161 https://shcc.ufl.edu/

**Weekly Schedule** (Subject to change if needed) **STA3024 Fall 2024**

| Monday | Wednesday | Friday |
|---|---|---|
| | | 8/23<br>Intro / Start Review Stats 1 |
| 8/26<br>Review Ch 7-10 Stats 1 | 8/28<br>Continue Review Stats 1 | 8/30<br>Review Ch 4 – Design of Experiments **Quiz 1 close** |
| 9/02<br>**No Class – Labor Day** | 9/04<br>Ch 10 – ANOVA Formulas | 9/06<br>One-Way ANOVA examples<br>**Quiz 2 close** |
| 9/09<br>Multiple Comparisons | 9/11<br>Bonferroni | 9/13<br>More One-Way ANOVA examples.<br>**Quiz 3 close** |
| 9/16<br>One/ Two-Way ANOVA | 9/18<br>Two-Way ANOVA | 9/20<br>Two-Way ANOVA<br>**Quiz 4 close** |
| 9/23<br>Two-Way ANOVA | 9/25<br>Exam Review | 9/27<br>**EXAM 1** |
| 9/30<br>Review Ch 3 – Simple Linear Regression Basics | 10/02<br>Ch 12- Regression Analysis | 10/04<br>Continue Inference Reg<br>**Quiz 5 close** |
| 10/07<br>CI, PI, Residuals | 10/09<br>Ch 13 Multiple Regression Basics | 10/11<br>Quadratic Regression<br>**Quiz 6 close** |
| 10/14<br>Regression with Dummy Variables | 10/16<br>More Reg. with Dummy Vars<br>**Quiz 7 close** | 10/18<br>**No Class – Homecoming** |
| 10/21<br>More Reg. with Dummy Vars | 10/23<br>Best Subsets Regression | 10/25<br>More Regression Examples<br>**Quiz 8 close** |
| 10/28<br>More Regression Examples | 10/30<br>Exam Review | 11/01<br>**EXAM 2** |

| | | |
|---|---|---|
| 11/04<br>Sec 13.6 Logistic Regression | 11/06<br>Ch 11 Contingency Tables | 11/08<br>Contingency Tables<br>**Quiz 9 close** |
| 11/11<br>**No Class** | 11/13<br>Contingency Tables | 11/15<br>Ch 14 Nonparametric Methods<br>**Quiz 10 close** |
| 11/18<br>Nonparametric Methods | 11/20<br>Nonparametric Methods | 11/22<br>Nonparametric Methods<br>**Quiz 11 close** |
| 11/25<br>**No Class-Thanksgiving** | 11/27<br>**No Class-Thanksgiving** | 11/29<br>**No Class-Thanksgiving** |
| 12/02<br>Exam Review | 12/06<br>**EXAM 3** | |