

# STA 3024 Introduction to Statistics 2

## Fall 2024

### Instructor Information

**Instructor:** Stephanie Stine

**Office:** 117B Griffin Floyd Hall

**Phone Number:** (352) 273-2975

**email:** s.stine@ufl.edu

**Office Hours:** Monday and Thursday 10:00am – 11:30am, Wednesday 2:00pm – 3:30pm, or by appointment

- Monday is in person
- Wednesday and Thursday are online via Zoom. Zoom link is on Canvas

### Teaching Assistant Information

**email:** Contact the teaching assistants through Canvas email

**Office Hours:** In person office hours are in the Saw Library in Griffin Floyd Hall. Online office hours can be accessed through the Zoom link on Canvas.

Katlyn Brown: In-person: T 10:40am – 12:35pm; Online: M 11:45am – 1:40pm

Sabrina Fortney: In-person: F 3pm – 5pm; Online: R 2:30pm – 4:30pm

Miguel Pascual Anton: In person: T 2pm – 6pm

Rebecca Kern: In-person M 1pm – 3pm; Online: W 3:30pm – 5:30pm

### Course Information

**Class Times:** Monday, Wednesday, Friday: 8:30am – 9:20am (Period 2) in LIT 109.

**Course Website:** <https://elearning.ufl.edu>

### 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.

By the end of the course, students will be able to

1. Solve Analysis of Variance problems to compare three or more population means.
2. Construct Simple Linear Regression and Multiple Regression models to predict a quantitative response.
3. Analyze Two-Way Tables to study the relationship between two categorical variables.
4. Apply nonparametric statistics that do not require a Normal distribution of the response variables.

## Required Course Materials

**Lecture Notes:** These are needed to follow along with the lectures. You can print them from the Course Materials link on the course home page. Alternatively, you can use them electronically if your device is able to write on a pdf.

**Scientific Calculator:** You will need a scientific calculator with some basic statistical functions such as mean and standard deviation. The calculator will be needed for in class exams.

**Access Pearson:** Purchase this through UF All Access for around \$70 for the semester. See the instructions on this [flyer](#) for opting in to UF All Access.

**Reliable Computer:** This includes having access to an Internet connection. You will need this to view Canvas, complete the homework, and turn in the computer assignments.

## Optional Course Materials

**Access Pearson/Textbook:** Statistics: The Art and Science of Learning from Data by Agresti, Franklin, Klingenberg, 5th Edition. Once you opt in to UF All Access for Access Pearson, you will have access to the textbook.

## Course Assignments

In this class, your overall grade will be made up of homework, computer assignments and exams.

**Homework:** There will be approximately eight homework assignments. These will be online through Access Pearson. You will need to opt in to UF All Access to be able to complete them. The tentative due dates are given on the course schedule at the end of the syllabus.

**Assignments:** There will be two computer assignments (CA) and one Virtual Exchange assignment. Each assignment is similar to a small project and will practice the concepts learned in the course.

- Computer assignments: You will need to type your computer assignment in a document and upload your assignment to Canvas as a pdf. The computer assignment is due by 11:59pm on the date given on the course schedule. There will be a 5-point penalty per day the assignment is late. It will not be accepted after the second day beyond the due date.
- Virtual Exchange assignment: For this assignment you will be partnered with a school/students in Germany to complete a Simple Linear Regression analysis of some data. More details will be given nearer the time.

Academic dishonesty on a computer assignment or the virtual exchange assignment will result in a minimum penalty of a grade of zero on that assignment.

**Exams:** There will be three in-class exams during the semester. You will need to bring to the exam your student UFID#, picture ID, scientific calculator, and pencils/eraser. Smart devices, or any type of device that connects to the Internet or other people are not allowed.

In the case of conflict or illness, you must contact me at [s.stine@ufl.edu](mailto:s.stine@ufl.edu) prior to the exam – as soon as you realize you will be unable to take the exam at the scheduled time. As a pre-requisite for arranging a make-up exam, valid and detailed documentation is required. Each case will be reviewed individually. There are no retakes.

Academic dishonesty on any exam will result in a minimum penalty of a grade of zero on that exam.

| <b>Exam</b> | <b>Exam Dates</b>                       |
|-------------|---|
| Exam 1      | Friday October 4th, 8:30am – 9:20am     |
| Exam 2      | Monday November 4th, 8:30am – 9:20am    |
| Exam 3      | Wednesday December 4th, 8:30am – 9:20am |

## **Grading Structure**

For this course your overall grade will be determined as follows.

| <b>Assessment</b>           | <b>% of Grade</b> |
|-----------------------------|-------------------|
| Exams (3 exams at 24% each) | 72%               |
| Assignments                 | 20%               |
| Homework                    | 8%                |

The grading scale for the course is given below.

| <b>Letter Grade</b> | <b>Percent</b> |
|---------------------|----------------|
| A                   | 91% to 100%    |
| A-                  | 88% to 90%     |
| B+                  | 85% to 87%     |
| B                   | 81% to 84%     |
| B-                  | 78% to 80%     |
| C+                  | 75% to 77%     |
| C                   | 68% to 74%     |
| C-                  | 65% to 67%     |
| D                   | 60% to 64%     |
| E                   | 0% to 59%      |

Current UF grading policies for assigning grade points can be found on the [Grades and Grading Policies](#) webpage.

## **Accommodations for Students with Disabilities**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the “[Get Started With the DRC](#)” webpage on the Disability Resource Center site. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. Accommodations cannot be given retroactively.

## **Course Evaluation Process**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via Gator Evals. Guidance on how to give feedback in a

professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from Gator Evals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## Course Policies

**Attendance:** You should arrive to class on time and attend all lectures. Exams will be based on the lecture notes, assignments and homework problems. If you miss class for any reason, it is your responsibility to get the notes and other information you have missed. While in class you should not use your cellphones and refrain from eating, drinking, excessive talking and doing homework for other classes.

**Extensions/Make-Up Policy:** If you miss a deadline due to illness or other reason, you will be required to provide documentation before an assignment deadline extension or make-up exam will be given. Each case will be reviewed individually.

Requirements for class attendance, make-up exams and other work in this course are consistent with university policies. See [UF Academic Regulations and Policies](#) for more information regarding the University Attendance Policies.

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

**Incomplete:** Incompletes are only assigned when extraordinary circumstances, arising after more than two-thirds of the course has been completed, prevent the student from completing the course requirements. Having a failing grade in the course is not a valid reason for requesting an Incomplete.

**Privacy Policy:** Student records are confidential. Only information designated as “UF directory information” may be released without your written consent. UF views each student as the primary contact for all communication. If your parents contact me about your grade, attendance or other information that is not “UF directory information” I will ask them to contact you.

**Email:** If you have a question regarding the class or your grade, please email me, Stephanie Stine at [s.stine@ufl.edu](mailto:s.stine@ufl.edu). Your message will be answered within one to two working days.

## UF Policies

**University’s Honesty Policy:** UF students are bound by The Honor Pledge which states, “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 Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the [UF Conduct Code](#) website for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

**Class Recording:** Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for

personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

## **Campus Resources**

### **Health and Wellness**

**U Matter, We Care:** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care](#) website to refer or report a concern and a team member will reach out to the student in distress.

**Counseling and Wellness Center:** Visit the [Counseling and Wellness Center](#) website or call 352-392-1575 for information on crisis services as well as non-crisis services.

**Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center](#) website.

**University Policy Department:** Visit the [UF Police Department](#) website or call 352-392-1111 (or 9-1-1 for emergencies).

**UF Health Shands Emergency Room/Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the [UF Health Emergency Room and Trauma Center](#) website.

**GatorWell Health Promotion Services:** For Prevention services focused on optimal wellbeing, including Wellness Coaching For Academic Success, visit the [GatorWell](#) website or call 352-273-4450.

### **Academic Resources**

**E-learning Technical Support:** Contact the [UF Computing Help Desk](#) at 352-392-4357 or via email at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

**Career Connections Center:** Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

**Library Support:** Various way to receive assistance with respect to using the libraries or finding resources.

**Teaching Center:** Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.

**Writing Studio:** 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

**Academic Complaints:** Office of the Ombuds; Visit the [Complaint Portal](#) webpage for more information.

**Enrollment Management Complaints (Registrar, Financial Aid, Admissions):** View the [Student Complaint Procedure](#) webpage for more information.

## Weekly Course Schedule

| Tentative STA 3024 Fall 2024 Schedule (due dates subject to change) |          |   |                  |            |                     |
|---|----------|---|------------------|------------|---------------------|
| Date  | Day      | Topic   | Textbook Section | Homework   | Computer Assignment |
| 8/23  | F        | Syllabus; Review: Sampling Distributions                  | 7.1, 7.2         |            |                     |
| 8/26  | M        | Review: Descriptive Statistics                            |                  |            |                     |
| 8/28  | W        | Inference Review: One Mean                                | 8.3, 9.3         |            |                     |
| 8/30  | F        | Matched t-test; Sign Test                                 | 10.4, 15.2       |            |                     |
| 9/2   | M        | <i>Labor Day – no class</i>                               |                  |            |                     |
| 9/4   | W        | Nonparametric: Wilcoxon Signed-Rank Test                  | 15.2             |            |                     |
| 9/6   | F        | Inference Review: Two Independent Means                   | 10.2             | HW1        |                     |
| 9/9   | M        | Nonparametric: Rank Sum Test                              | 15.1             |            |                     |
| 9/11  | W        | Permutation Resampling                                    | 10.3             |            |                     |
| 9/13  | F        | The F Test for two group variances                        |                  | HW2        |                     |
| 9/16  | M        | Review: Design of Experiments                             | Ch. 4            |            |                     |
| 9/18  | W        | One-Way ANOVA   | 14.1             |            |                     |
| 9/20  | F        | One-Way ANOVA   | 14.1             |            |                     |
| 9/23  | M        | Bonferroni and Tukey Methods                              | 14.2             |            |                     |
| 9/25  | W        | Two-Way ANOVA   | 14.3             |            |                     |
| 9/27  | F        | Two-Way ANOVA   | 14.3             | HW3        |                     |
| 9/30  | M        | Nonparametric: Kruskal-Wallis Test                        | 15.2             |            |                     |
| 10/2  | W        | Exam 1 Review   |                  |            | CA1                 |
| <b>10/4</b>   | <b>F</b> | <b>Exam 1</b>   |                  | <b>HW4</b> |                     |
| 10/7  | M        | Review: Simple Linear Regression                          | Ch 3, 12.1       |            |                     |
| 10/9  | W        | Inference for the Slope                                   | 12.2             |            |                     |
| 10/11   | F        | Correlation; How the Data Vary Around the Regression Line | 12.3, 12.4       |            |                     |
| 10/14   | M        | Virtual Exchange Introduction                             |                  |            |                     |
| 10/16   | W        | Transformations   |                  | HW5        |                     |
| 10/18   | F        | <i>Homecoming – no class</i>                              |                  |            |                     |
| 10/21   | M        | Multiple Regression                                       | 13.1             |            |                     |
| 10/23   | W        | Extended the Correlation Coefficient and $R^2$            | 13.2             |            |                     |
| 10/25   | F        | Inference for the MR Slope and Residual Plots             | 13.3, 13.4       |            |                     |
| 10/28   | M        | Categorical Predictors and Regression                     | 13.5             |            |                     |
| 10/30   | W        | Modeling a Categorical Response                           | 13.6             |            |                     |
| 11/1  | F        | Exam 2 Review   |                  | HW6        |                     |
| <b>11/4</b>   | <b>M</b> | <b>Exam 2</b>   |                  |            |                     |

|             |          |  |                |     |            |
|-------------|----------|--|----------------|-----|------------|
| 11/6        | W        | Inference Review: One Proportion; Two Independent Proportions. | 8.2, 9.2, 10.1 |     |            |
| 11/8        | F        | Association for Categorical Variables                          | 11.1           |     |            |
| 11/11       | M        | <i>Veterans Day – No class</i>                                 |                |     |            |
| 11/13       | W        | Chi-Squared Distribution; Test for Goodness of Fit             | 11.2           |     |            |
| 11/15       | F        | Chi-Squared Tests for Independence and Homogeneity             | 11.2           | HW7 | VE Project |
| 11/18       | M        | Virtual Exchange Project Presentations                         |                |     |            |
| 11/20       | W        | Relative Risk and the Odds Ratio                               | 11.3           |     |            |
| 11/22       | F        | Fisher’s Exact Test and Permutation Test                       | 11.5           | HW8 | CA2        |
| 11/25       | M        | <i>Thanksgiving – no class</i>                                 |                |     |            |
| 11/27       | W        | <i>Thanksgiving – no class</i>                                 |                |     |            |
| 11/29       | F        | <i>Thanksgiving – no class</i>                                 |                |     |            |
| 12/2        | M        | Exam 3 Review  |                |     |            |
| <b>12/4</b> | <b>W</b> | <b>Exam 3</b>  |                |     |            |