

**STA 3024: Introduction to Statistics II**  
**Fall 2021**

*UF Course Catalog: An introduction to the analysis of variance. Nonparametric statistical methods and applications. Analysis of count data: chi-square and contingency tables. Simple and multiple linear regression methods with applications. Prerequisite: [STA 2023](#) or the equivalent.*

**Instructor:** Beth Johnson  
**Office:** 115-B Griffin-Floyd Hall

**Email:** [ejohnson5@ufl.edu](mailto:ejohnson5@ufl.edu)  
**Telephone:** 352-273-1897

**Instructor Office Hours:** TBD, zoom link will be posted on Canvas course page  
**Graduate Teaching Assistants:** TBD  
**GTA Office Hours/Location:** TBD

**Course Description and Objectives**

**Days:** MWF  
**Time:** 8:30 am – 9:20 am  
**Place:** MCCC0100

**Course Description:** 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 1-9 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

**Required Course Materials**

**Textbook:** Statistics, The Art and Science of Learning from Data, by Agresti, Franklin and Klingenberg, 4th edition, Prentice Hall. Purchase as an e-text (around \$60) from UF All Access. Then access the text using the MyLab and Mastering link in Canvas. This format allows you to complete the suggested homework problems electronically, check your answers, and use the homework help for extra videos and examples.

**Scientific Calculator (around \$10 to \$15):** You will need a calculator capable of basic arithmetic operations and taking square roots will be needed for in-class exams. Internet-enabled electronic devices, such as cell phones or tablets, cannot be used as calculators during exams.

**Web-enabled device:** You will need some type of web-enabled device such as a laptop, smartphone, or tablet to use in-class to access Canvas as needed.

## Course Resources

The Canvas, <https://lss.at.ufl.edu/>, course website will be used extensively throughout the semester to post notes and make course announcements. You must log on using your gatorlink username and password and access the course webpages from there. Important information about the course will be posted here including this syllabus, announcements, notes, assignments and your grades throughout the semester and computer output to supplement the examples done in class.

## Course Computer Program and Applets

Some assignments will require you to use statistical applets or a statistical software package to analyze and visualize data. One statistical software program that you will be required to use throughout the semester is **JMP**. JMP is available as a free download (recommended) or is available as an UF app. Information on how to download this program will be posted on Canvas and discussed during the first week of class. A list of other statistical applets will be posted on Canvas.

## Study Approach

You are to skim the lecture slides and text sections before class to familiarize yourself with the material and its organization. The lecture notes will be posted on Canvas. Next, you are to carefully study the lecture slides and textbook sections after each lecture to increase understanding. Remember to use the notes to help you to complete all assignments.

## Help

Remember to ask for help! You can come by during my scheduled office hours or make an appointment to see me. I can also answer some questions via email. *Emails received during the working week will be answered within 24 hours however emails received over the weekend may not be answered until Monday morning.*

## Course Assignments

Your final course grade will be based on a combination of assessment types including homeworks, computer assignments and in-class exams. Due dates will be posted on the course schedule, on the Canvas course page and announced in class.

### **Homework:**

Eight homework exercises will be assigned using the Pearson MyLab and Mastering system located in the Canvas course site. These assignments are designed to help understand the statistical topics through practice. Students can work on each problem as many times as needed to get the question correct. In addition, you can discuss these problems with other students in this course as well as the TAs and your professor. These problems will prepare you to complete the exams.

**Computer Assignments:**

There will be three computer data analysis assignments referred to as CA’s. Each computer data analysis assignment is like mini project and should be taken very seriously. You are required to type all solutions (unless otherwise specified). That is, you must integrate in Microsoft Word (or another similar program) the statistical results for any software package or applet (including any graphs) used to solve the problems with your typed answers to the questions. You must upload your solutions document as a pdf file electronically onto Canvas to get your assignment graded. It is your responsibility to make sure your posted file is readable. Unreadable files cannot be graded. **You are required to work alone on these assignments.** This means you cannot discuss these assignments with anyone except your professor and the TAs only for clarification purposes.

Due dates for all computer assignments will be posted on Canvas. There will be a 10% penalty per day for late work and no assignments will be accepted more than two days after the due date.

**Exams:**

There will be four in-class exams which will be contain multiple choice, short answer and matching items. All students must bring to the exam: their student ID number, picture ID, a calculator, and pencils. In case of conflict or illness, if a student is unable to take an exam at the scheduled time, 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. Makeup exams may not be multiple choice. A grade of zero is the minimum punishment of any type of dishonesty on an exam.

You may be provided with a packet of formulas and statistical tables to be used on the exams, if needed. A copy of this packet will be available in Canvas so that you will know what information will be provided to you on each exam.

**Grading Scheme:**

Exams (4@17% each)	68%
Computer Assignments (3@8% each)	24%
Homework (8@1% each)	8%

Your final overall numeric score is rounded to the nearest integer. So, for example, if your average is 76.4 your grade will be 76. If your grade is 76.5, your grade will be 77.

Letter grades will be assigned according to the table shown.

Numeric Score	Letter Grade
91 – 100	A
88 – 90	A-
86 – 87	B+
81 – 85	B
78 – 80	B-
76– 77	C+
71 – 75	C
65 – 70	C-
60 – 64	D
0 – 59	E

## Course Policies

### **Grading Policies:**

\*You have at most seven days after a graded assignment is posted to question the grade. If you do not notify me in writing of any issues with your grade within that time, then the posted score stands.

\*Requirements for class attendance and make-up exams, assignments, and other work in this course as well as policies regarding absences, religious holidays, illness, and student athletes are consistent with UF Attendance Policies.

Additional make-up policy requirements:

- Every effort should be made to complete the assignment/exam during the open period. Only extreme situations will warrant a makeup. Contact the instructor prior to the exam - as soon as you realize you will be unable to take the assignment/exam at the scheduled time. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite for scheduling a makeup under such extenuating circumstances.
- If you have an emergency on the day of the assignment/exam, the instructor must be contacted by midnight of the day of the assignment/exam.
- Make-ups need to be scheduled within a week from the assignment deadline. Student is responsible for scheduling.
- Additional Note: Being on vacation or booking a trip prior to the completion of the semester is not a valid reason to request a makeup. Please reference the most recent Academic Calendar, <https://catalog.ufl.edu/UGRD/dates-deadlines/pdfs/>.

\*If you have a disability that requires academic accommodation, contact the Disability Resource Center (DRC). The DRC will provide documentation to the students who must then provide this documentation to the instructor when requesting information. You must submit this documentation prior to submitting any assignments for which you are requesting accommodation.

\* 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 can be found at <https://umatter.ufl.edu/> . Information on how to Drop a class can be found in UF's Academic Catalog <https://catalog.ufl.edu/> and <https://catalog.ufl.edu/UGRD/academic-regulations/dropping-courses-withdrawals/>

\*There is no "extra credit" or forgiven grades – you are responsible for all your work done (or left undone).

**Honor Code on Computer Assignments and Exams:** You are required to abide by the University of Florida Student Honor Code. Any violation of the academic integrity expected of you will result in a minimum academic sanction of **a failing grade on the assignment or assessment**. Any alleged violations of the Student Honor Code will result in a referral to Student Conduct and Conflict Resolution. Please review the Student Honor Code and Student Conduct Code at [sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/](http://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/)

The Honor Code will be enforced for **all computer assignments and exams**.

Computer assignments are to be undertaken independently; all graded work is expected to be your original and independent work. It is not appropriate to: (1) give your work on the assignment to someone else to copy, (2) copy directly from someone else's solutions (either present or past students), (3) use someone else's computer program or output, or a copy of someone else's computer session, or (4) use solutions posted in previous semesters. ***You are responsible for making sure that there is no reason to doubt that the work you hand in is your own.*** As only your name appears on an assignment, my expectation and assumptions are that you have done the work yourself, fully and independently.

**Classroom Behavior:** During class students should turn off their cellular phones and refrain from eating, drinking, reading newspapers, doing homework, listening to music, excessive talking and all other behaviors that are distracting and disrespectful to the instructor and their fellow students.

**Privacy Policy:** Student records are confidential. Only information designated "UF directory information" may be released without your written consent. This applies to parents or anyone else who contacts me about your grades.

**Faculty Course Evaluations:** Student feedback is welcomed by the instructor and beneficial to future students in the course. Students are requested to provide feedback on the quality of instruction in this course by completing a brief confidential evaluation towards the end of the semester at <https://evaluations.ufl.edu>. Summaries of the evaluation results can be found at <https://evaluations.ufl.edu/results>.

### **Other University Services**

**U Matter, We Care:** Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**\*Sexual Assault Recovery Services (SARS): Student Health Center, 392-1161**

**\*University Police Department, 392-1111 (or 9-1-1 for emergencies),**

**<http://www.police.ufl.edu>**

## Covid Policy

In response to COVID-19, the following practices 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, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.
- **You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated.** Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.
  - Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
  - Hand sanitizing stations will be located in every classroom.
- If you sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. 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 (or email [covid@shcc.ufl.edu](mailto:covid@shcc.ufl.edu)) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the [UF Health Screen, Test & Protect website](#) for more information.
  - 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.
  - If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- Continue to regularly visit [coronavirus.UFHealth.org](https://coronavirus.UFHealth.org) and [coronavirus.ufl.edu](https://coronavirus.ufl.edu) for up-to-date information about COVID-19 and vaccination.

### Tentative Schedule Fall 2021

<b>Date</b>	<b>Day</b>	<b>Topic</b>	<b>Section</b>	<b>Assignment</b>
23-Aug	M	Review statistical inference - simulation example	Posted Notes	
25-Aug	W	Review one and two sample proportions inference procedures	Sec 8.1-8.2 and Sec 10.1	
27-Aug	F	Association for categorical variables	Sec 11.1	
30-Aug	M	The goodness of fit test	Sec 11.2	HW1
1-Sep	W	Tests for homogeneity and independence	Sec 11.2	
3-Sep	F	Relative risk and the odds ratio	Sec 11.3	
6-Sep	M	Labor Day - No Class		
8-Sep	W	Residual analysis	Sec 11.4	
10-Sep	F	Fisher's Exact Test and Permutation Tests	Sec 11.5	
13-Sep	M	Review		HW2
15-Sep	W	Exam 1		
17-Sep	F	Review basic descriptive statistics	Posted Notes	
20-Sep	M	Inference - one sample mean t-tests with assumptions	Sec 8.3 and Sec 9.3	HW3
22-Sep	W	Matched t-test and Sign Test	Sec 10.4 and Sec 15.2b	
24-Sep	F	Inference - two independent means t-tests	Sec 10.2	
27-Sep	M	Rank-sum test	Sec 15.1	CA1

29-Sep	W	The F-test	Posted Notes	
1-Oct	F	Review		
4-Oct	M	Exam 2		HW4
6-Oct	W	Introduction to Design of Experiments	Chapter 4 and Posted Notes	
8-Oct	F	Homecoming - No Class	Sec 14.1	
11-Oct	M	One-way ANOVA	Sec 14.1	HW5
13-Oct	W	One-way ANOVA	Sec 14.2	
15-Oct	F	Post-hoc Tests		
18-Oct	M	One-Way ANOVA examples and Kruskal-Wallis Test	Sec 15.2	
20-Oct	W	Two-way ANOVA	Sec 15.3	
22-Oct	F	Two-way ANOVA	Sec 15.3	
25-Oct	M	Two-way ANOVA	Sec 15.3	HW6
27-Oct	W	Randomized Block Designs	Chapter 4 and Posted Notes	
29-Oct	F	Review		
1-Nov	M	Exam 3		CA2
3-Nov	W	Correlation	Sec 12.3	
5-Nov	F	Simple Linear Regression	Sec 12.1	
8-Nov	M	Inference for the Regression Slope	Sec 12.2	



10-Nov	W	Residual Analysis	Sec 12.4	
12-Nov	F	Transformations	Posted Notes	
15-Nov	M	Multiple Regression	Sec 13.1	HW7
17-Nov	W	Multiple Regression	Sec 13.1	
19-Nov	F	Inference for MR slope	Sec 13.3 and Sec 13.4	
22-Nov	M	Model Building	Sec 13.2	CA3
24-Nov	W	Thanksgiving - No Class		
26-Nov	F	Thanksgiving - No Class		
29-Nov	M	Polynomial Regression	Posted Notes	HW8
1-Dec	W	Logistic Regression	Sec 13.6	
3-Dec	F	Logistic Regression	Sec 13.6	
6-Dec	M	Review		
8-Dec	W	Exam 4		