

# STA 3024 Introduction to Statistics II

**Prerequisite:** STA 2023 or equivalent

*Section 4433 Meets on MWF at 10:40 in NRN 137*

**Course Website:** <http://www.stat.ufl.edu/~yy>

Fall 2012 Course Team	
<b><u>Instructor:</u></b> Dr. Yasar Yesilcay ( <a href="mailto:yy@stat.ufl.edu">yy@stat.ufl.edu</a> ) <b>Office:</b> Griffin Floyd 101 B <b>Phone:</b> 273 - 1839 <b>Office Hours:</b> Tuesday 9:35 – 11:30 and Thursday 10:30 – 11:30	<b><u>Teaching Assistants<sup>(1)</sup>:</u></b> • Zhe Chen ( <a href="mailto:zhe.chen@stat.ufl.edu">zhe.chen@stat.ufl.edu</a> ) Room FLO 209, Phone: 273 - 2986 • Xiaofan Xu ( <a href="mailto:ibictts@stat.ufl.edu">ibictts@stat.ufl.edu</a> ) Room FLO 117D, Phone: 273 - 2977 • Liyuan Zhang ( <a href="mailto:zhangliyuan@stat.ufl.edu">zhangliyuan@stat.ufl.edu</a> ) Room McCarty C 401, Phone: 273 – 0792

## **Course Description and Objectives:**

This course satisfies General Education Credits in the Mathematical Sciences. Students learn how to summarize data and how to make appropriate decisions based on data. 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 covers 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.

Introduction to Statistics II focuses on the following four topics:

1. **Analysis of Variance** to compare three or more population means.
2. **Inference for Regression**, covering Simple Linear Regression and Multiple Linear Regression.
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.

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<sup>1</sup> See announcement page for the office hours of the teaching assistants.

### **Required Materials**

1. **Statistics: The Art and Science of Learning from Data**, by Alan Agresti and Chris Franklin, Prentice Hall, 2<sup>nd</sup> ed. 2009 [ISBN 0 – 13 – 513199 – 5]. **IMPORTANT:** You will need the whole book, chapters 1 – 14. Volume 1 of the book (soft cover), which includes only chapters 1 – 9 and is used in STA 2023 is NOT sufficient. You can purchase the full book (hard cover) or, if you already have Volume 1 you can purchase Volume 2 (soft cover) to complete it.
2. **Scientific Calculator** (around \$10 to \$15) that has some basic statistical functions like mean and standard deviation (look for the following symbols:  $\bar{X}$  and either S or  $\sigma_{n-1}$ ). **Graphing calculators are allowed.**

### **Suggested Homework Problems:**

The suggested homework problems are given at the end of this document. They will help you master the material but will not be collected. I strongly urge you to solve these problems and more. See last page for a list of suggested problems. Solve all of these problems and many more.

### **Exams:**

There will be three multiple-choice exams of equal weight given on the dates and times as shown below:

Exam 1	Friday, 10/5/2012	Chapters 9 and 13
Exam 2	Friday, 11/2/ 2012	Chapters 11 and 12
Exam 3	Wednesday, 12/5/2012	Chapters 10 and 14

Note that instead of a final exam, you will have Exam 3 on the last day of classes. All exams will be given in class, during the lecture times.

A grade of zero is the minimum punishment of any type of dishonesty on an exam. All students must bring to the exam: their student ID number, a picture ID, a calculator, and pencils and eraser

### **Make up Exam:**

**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 **immediately**, for any arrangements to be made for a makeup. Valid and detailed documentation is a prerequisite under such extenuating circumstances. Each case will be reviewed individually, and a make up is not guaranteed.

**All makeup exams will be given on the last day of classes and will be cumulative, it may not be multiple-choice.**

In addition to the three examinations (that will give you 90% of your grade) there will be quizzes every Friday (10%).

## **Course Assessment:**

### **Grading Scale**

A	90% to 100%
B+	85% to 89%
B	80% to 84%
C+	75% to 79%
C	65% to 74%
D	60% to 64% (No D+ given)
E	59% and below

### **Course Policies:**

**Email:** will be answered within one working day in most cases. Please be aware that statistical questions should be answered in person (in class or during office hours or in tutoring room by TAs) since they often require pictures and formulas that make it very hard to communicate through email.

**Attendance:** Although not required, is very highly recommended. This class is NOT offered online. If you miss a class for any reason, it is your responsibility to get a copy of the notes and all information given in class from another student.

**Classroom Behavior:** I love student participation in class and encourage you to stop me and ask questions at any point during the lectures. However, please do not talk with your friends during the lectures. I strongly suggest that you work in groups outside the lecture and you can talk as much as you like then.

Additionally, during class students should turn off their cellular phones and refrain from any distraction (e.g., eating, drinking, chewing gum, reading newspapers, doing homework, listening to music and checking internet).

**Instructor's Honor Code:** We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

**Academic Dishonesty:** We adhere to the University of Florida rules and guidelines for handling instances of academic dishonesty. Please refer to the Office for Student Services for detailed information about the current policies.

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

**Incomplete Grades:** are only assigned when extraordinary circumstances, 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.

**Students with Disabilities:** Students who require special accommodations in class or during exams should follow the procedures outlined by the Disability Resources Program (<http://www.dso.ufl.edu/drp/>). Please see the instructor during office hours during the first f2 – 3 days to discuss your accommodation letter confidentially.

**How to succeed in this course:**

- Study daily. Make sure you understand the material as soon as it is covered in the lecture. If not, stop me and ask.
- This course depends heavily on what you (should) have learned in STA 2023. If you took this course long ago, please review the course material (at least Chapters 5 to 9) as soon as possible, like today.
- There are teaching assistants to help you. Make sure you make good use of this free tutoring facility, as well as my office hours.
- Watch my power point presentation on how to study effectively on the first day of courses.

**Suggested Problems**

Chap 7 Distribution of sample statistics	7.35, 7.41, 7.43, 7.45
Chap 8 Confidence intervals	8.61, 8.62, 8.65, 8.66, 8.74, 8.75, 8.76, 8.78, 8.79, 8.82
Chap 9 Significance Tests	9.66, 9.67, 9.69, 9.70, 9.71, 9.76, 9.77, 9.81, 9.83, 9.85
Chap 10 Comparing Two groups	10.70, 10.71, 10.72, 10.80, 10.81, 10.82, 10.84, 10.86
Chap 14 ANOVA	10.35, 10.36, 10.38, 10.39, 14.40, 14.42, 14.44, 14.46, 14.47, 14.48, 14.49, 14.50, 14.52, 14.53, 14.54
Chap 3, 12, 13 Regression Analysis	3.33, 3.37, 12.64, 12.66, 12.37, 12.90, 12.92, 13.62, 13.63, 13.65, 13.70, 13.74, 13.75, 13.76, 13.77
Chap 11 Association between two categorical variables	11.43, 11.45, 11.48, 11.49, 11.51, 11.52, 11.53, 11.54, 11.55, 11.57
Chap 15 Nonparametric Statistics	15.4, 15.5, 15.7, 15.8, 15.9, 15.11, 15.16, 15.17, 15.18, 15.19, 15.20,