

STA 3024 Introduction to Statistics II

Summer A 2009

Prerequisite: STA 2023 or equivalent

Will meet MTWRF in Turlington L011 at 9:30 – 10:45 (Period 2)

Course Team	
<p>Instructor: Dr. Yasar Yesilcay (yy@stat.ufl.edu) Web: http://www.stat.ufl.edu/~yy Office: FLO 101 B, Phone: 273 – 1859 Office Hours: By appointment</p>	<p>Teaching Assistants: Michael Hyman (mhyman@stat.ufl.edu) Office: FLO 115A, Phone: 273 – 2967 Alexander Kirpic (akirpich@stat.ufl.edu) Office: FLO 105, Phone: 273 – 2965 Office Hours: MTWR 11 AM – 3 PM. and by appointment</p>

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 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.

Required Materials

1. **Statistics: The Art and Science of Learning from Data**, by Alan Agresti and Chris Franklin, Prentice Hall, 2009. 2nd Edition. **IMPORTANT:** You will need the whole book, Chapters 1- 15.
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 σ_{n-1}). **Graphing calculators are allowed.**

Course Website: http://www.stat.ufl.edu/~yy/STA_3024.doc

Announcements for the course, and computer output to supplement the examples done in class, will be linked from this page. Once the semester is underway, there will also be instructions on that website that will direct you to WebCT VISTA, an integrated, password protected, Web based classroom management tool. In WebCT you will be able to take the **online quizzes**, and check all your grades. **Note: The lectures for this class will NOT be available online.**

Exams:

There will be three exams of equal weight (30% each), **given every other week**, in class during the semester. All exams are in multiple- choice format.

All students must bring to the exam:

* Their UFID number,

* A calculator,

and

* A picture ID,

* Pencils and eraser

Exam 1 **Friday, May 22, 2009 (in class)**

Chapters 10 and 14

Exam 2 **Friday, June 5, 2009 (in class)**

Chapters 12 and 13

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Exam 3 **Friday, June 19, 2009 (in class)**

Chapters 10 and 15

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Projects: There will be two small projects at dates to be announced in class. Each project is worth 5 points.

Honesty is assumed in all assessments. A grade of zero is the minimum punishment of any type of dishonesty on an exam.

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. The makeup exam will be given on the last day of classes and **WILL BE CUMULATIVE, IT MAY NOT BE MULTIPLE-CHOICE.**

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%	E	59% and below
	(No D+ given)		

Any fractional part of the overall points will be rounded UP to the next integer.

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) 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. As in all other summer courses the **speed of the lectures will be very high** and if you miss one lecture, that is equivalent to more than 3 lectures in a regular semester. The workload of this course is equivalent to 2 or 3 courses in a regular semester. So you must study every day for at least 3 hours outside the classroom.

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. Also, during class turn off your cellular phones and refrain from eating, drinking, 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.

Grade Changes: will be made only when we have made an error. 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 2 – 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 10) as soon as possible, like today.
- There are two teaching assistants to help you. Make sure you make good use of this free tutoring facility.
- Watch my power point presentation on how to study effectively on the first day of courses.

STA 3024 Introduction to Statistics II
Tentative Time Table for Summer A 2009

Date	Chapters	Sections
Monday 5/11	Chapters 1- 8 <u>Review</u>	1.1 to 7.3 Review All subjects
Tuesday 5/12	Chapter 8 Statistical Inference I <u>Review</u>	8.1 Methods of Statistical Inference 8.2 Confidence Interval for p 8.3 confidence interval for μ 8.4 Determining sample size
Wednesday 5/13	Chapter 9 Statistical Inference II <u>Review</u>	9.1 Steps in significance tests 9.2 Significance tests for p 9.3 Significance tests for μ Limitations and erroneous decisions
Thursday 5/14	Chapter 10 Statistical Inference III <u>Review</u>	10.1 Comparing 2 proportions 10.2 Comparing 2 means
Friday 5/15		10.3 More on comparing 2 populations 10.4 Analysis of Dependent Samples
Monday 5/18	Chapter 14 <u>ANOVA</u>	14.1 One – way ANOVA 14.2 Follow up ANOVA
Tuesday 5/19		14.3 Two-way ANOVA
Wednesday 5/20	Chap 3 Simple Linear Regression <u>Review</u>	3.2 Association between two quantitative variables
Thursday 5/21		3.2 Prediction of response
Friday 5/22	TEST – 1 Covers Chapters 10 and 14	
Monday 5/25	Chapter 12 Regression Analysis	12.1 Relation between two variables 12.2 Strength of Association
Tuesday 5/26		12.3 Inferences about association
Wednesday 5/27		12.4 Regression Line
Thursday 5/28		13.1 Multiple Regression
Friday 5/29	Chapter 13: Multiple Regression	13.2 Correlation and R-Square
Monday 6/1		13.3 Inferences using MLR
Tuesday 6/2		13.4 Residual Plots
Wednesday 6/3		11.1 Independence and Association
Thursday 6/4	Chapter 11 Contingency Tables	11.2 Independence
Friday 6/5	TEST – 2 Covers Chapters 3, 12, 13 (Except 13.6)	
Monday 6/8	Chapter 11 Contingency Tables	11.3 Strength of Association
Tuesday 6/9		11.4 Residuals and Association
Wednesday 6/10		11.5 Fisher's Exact Test
Thursday 6/11	Section 13.5 Logistic Regression	13.5 Categorical variables
Friday 6/12	Chap 15 Nonparametric Statistics	15.1 Comparing Groups by Ranks
Monday 6/15		15.2 Case of Several Groups
Tuesday 6/16		15.2 Case of Matched Pairs
Wednesday 6/17		15.2 The sign Test
Thursday 6/18	All Text	Problem Identification
Friday 6/19	TEST – 3 Covers Chapters 11, 15 and Section 13.5 as well as problem identification	