

**STA 4321 Section 1055 and STA 5325 Section 1057**  
**Introduction to Probability**  
**Summer A 2013**

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**Course Information:** MTWRF Period 2 (9:30 - 10:45 a.m.) in Turlington (TUR) L011.

**Office Hours/Help Sessions:** TBA

**Course Description:** The sequence of courses STA 4321 (5325) and 4322 (5328) develops the basic mathematical theory of statistical inference at an undergraduate level. Three semesters of calculus are prerequisite for these courses. In the first course, STA 4321 (5325), the student is introduced to the ideas and methods of probability and distribution theory. In STA 4322 (5328), these tools are used to develop the theory of statistical estimation and hypothesis testing. The topics covered in STA 4321 (5325) are contained in Chapters 1-7 of the course text and include: the basics of discrete probability; discrete and continuous random variables and their distributions, especially those distributions most commonly encountered in statistics; calculation of means, variances, and other expectations; moment generating functions; multivariate probability distributions; variances and covariances of linear combinations of random variables; methods for finding the distributions of functions of random variables; and the Central Limit Theorem.

**Course Materials Required:** Wackerly, Mendenhall, and Scheaffer, Mathematical Statistics with Applications (7th ed), Duxbury Press (Thomson Brooks/Cole Publishing), 2008.

**Exams:** There will be two exams, given on the dates listed below.

Exam I: May 28<sup>th</sup>

Exam II: June 21<sup>st</sup>

**Quizzes:** Unannounced. Prepare each day!

**Homework:** Reading textbook and watching YouTube videos is required. Homework assigned is due the next day unless otherwise specified.

**Grades:** Exam I (30%), Exam 2 (40%), Quizzes and Homework (30%).

**Grading Scale:** The grading scale will be as follows:

A: 92-100%, A-: 88- <92%, B+: 84- <88%, B: 80- <84%, B-: 77- <80%,

C+: 74- <77%, C: 70- <74%, C-: 67- <70%, D+: 64- <67%, D: 56- <64%, E: < 55%.

**Course Policies:**

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

**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.

**Grading:** Grades will be changed only when an error has been made by the instructor.

**Incomplete:** Incompletes are only assigned when extraordinary circumstances, arising after the date for dropping off the course, prevent the student from completing the course requirements. The student must be currently passing the course and discuss the circumstances with the instructor before the final exam takes place. Having a failing grade in the course is not a valid reason for requesting an incomplete.

**Students with disabilities:** Students requesting classroom accommodation must first register with the Dean of Students office. The Dean of Students will provide documentation to the students who must then provide this documentation to the Instructor when requesting information.

**Privacy Policies:** Student records are confidential. Only information designated "UF directory information" may be released without your written consent. UF views each student as the primary contact for all communication.

**Tentative material covered:**

Date	Topic	Book Sections	Exercises
MON 5/13/13	What is Statistics?	Chapter 1	1.11,1.23,1.28
TUE 5/14/13	Probability	Chapter 2 1,2,3,4	2.1,2.4,2.5,2.7,2.10,2.18
WED 5/15/13	Probability	Chapter 2 5,6	2.31,2.32, 2.38, 2.41, 2.42, 2.46, 2.51, 2.52, 2.58, 2.64
THU 5/16/13	Probability	Chapter 2 7,8	2.71, 2.72, 2.73, 2.76, 2.77,2.82,2.83,2.85,2.95,2.102 DUE MON 5/20/13
FRI 5/17/13	Probability	Chapter 2 9	2.111,2.112,2.114,2.115,2.118, 2.120,2.121
MON 5/20/13	Probability	Chapter 2 10,11,12	2.124, 2.128, 2.130, 2.133, 2.135, 2.137
TUE 5/21/13	Discrete Random Variables <a href="http://www.youtube.com/watch?v=0P5WRKihQ4E">http://www.youtube.com/watch?v=0P5WRKihQ4E</a> <a href="http://www.youtube.com/watch?v=OvTEhNL96v0">http://www.youtube.com/watch?v=OvTEhNL96v0</a>	Chapter 3 1,2,3	3.2, 3.3, 3.5, 3.6, 3.7, 3.12, 3.13, 3.17, 3.33
WED 5/22/13	Discrete Random Variables <a href="http://www.youtube.com/watch?v=bT1p5tJwn_0">http://www.youtube.com/watch?v=bT1p5tJwn_0</a> <a href="http://www.youtube.com/watch?v=eSJ6ufTSJNk">http://www.youtube.com/watch?v=eSJ6ufTSJNk</a>	Chapter 3 4	3.38, 3.48, 3.51, 3.53, 3.56, 3.60

	<a href="http://www.youtube.com/watch?v=UJFIZY0xx_s">http://www.youtube.com/watch?v=UJFIZY0xx_s</a>		
THU 5/23/13	Discrete Random Variables <a href="http://www.youtube.com/watch?v=nbgjuf0utjl">http://www.youtube.com/watch?v=nbgjuf0utjl</a> <a href="http://www.youtube.com/watch?v=BPlmjp2ymxw">http://www.youtube.com/watch?v=BPlmjp2ymxw</a> <a href="http://www.youtube.com/watch?v=BCeFgnh6A1U">http://www.youtube.com/watch?v=BCeFgnh6A1U</a> <a href="http://www.youtube.com/watch?v=8x3pnyYCBto">http://www.youtube.com/watch?v=8x3pnyYCBto</a> <a href="http://www.youtube.com/watch?v=lu25wy7icok">http://www.youtube.com/watch?v=lu25wy7icok</a>	Chapter 3 5,6,7,8	3.71, 3.72, 3.73, 3.74, 3.77, 3.90, 3.92, 3.97, 3.102, 3.103, 3.105, 3.122, 3.124, 3.127, 3.128, 3.131, 3.139, 3.141 DUE MON 5/27/13
FRI 5/24/13	Discrete Random Variables	Chapter 3 9,10,11	3.145, 3.146, 3.147, 3.153, 3.155, 3.158, 3.167, 3.168
MON 5/27/13	Continuous Random Variables <a href="http://www.youtube.com/watch?v=OWSOhpS00_s">http://www.youtube.com/watch?v=OWSOhpS00_s</a> Review Exam I	Chapter 4 1,2	4.1, 4.8, 4.10, 4.12, 4.19 DUE WED 5/29/13
TUE 5/28/13	EXAM I Chapters 1, 2, 3		
WED 5/29/13	Continuous Random Variables <a href="http://www.youtube.com/watch?v=-qt8CPladWQ">http://www.youtube.com/watch?v=-qt8CPladWQ</a> <a href="http://www.youtube.com/watch?v=Ro7dayHU5DQ">http://www.youtube.com/watch?v=Ro7dayHU5DQ</a> <a href="http://www.youtube.com/watch?v=iYiOIVISWXS4">http://www.youtube.com/watch?v=iYiOIVISWXS4</a>	Chapter 4 3,4,5	4.25, 4.28, 4.30, 4.41, 4.43, 4.54, 4.58 (a-e), 4.59, 4.66(a), 4.71, 4.74 (a-d,f), 4.75, 4.77, 4.80 DUE FRI 5/30/13
THU 5/30/13	Continuous Random Variables	Chapter 4 6,7	4.92, 4.93, 4.96 (a-c), 4.106(a), 4.109, 4.110, 4.111, 4.112, 4.123(a), 4.124(a), 4.125, 4.126, 4.130 DUE MON 6/3/13
FRI 5/31/13	Continuous Random Variables	Chapter 4 8,9,10,11	4.140, 4.141, 4.143, 4.144, 4.145, 4.146, 4.147
MON 6/3/13	Multivariate Probability Distributions	Chapter 5 1,2	5.1, 5.7, 5.9, 5.10, 5.14, 5.15, 5.16
TUE 6/4/13	Multivariate Probability Distributions	Chapter 5 3,4	5.19, 5.25 (a,b,d,e,f), 5.27, 5.28, 5.32, 5.36, 5.45, 5.53, 5.54, 5.58, 5.59, 5.60, 5.62 DUE THU 6/6/13
WED 6/5/13	Multivariate Probability Distributions	Chapter 5 5,6	5.72, 5.77, 5.78, 5.80, 5.84
THU 6/6/13	Multivariate Probability Distributions	Chapter 5 7,8	5.89, 5.92, 5.93, 5.95, 5.97, 5.103, 5.106, 5.108, 5.109, 5.113 DUE MON 6/10/13
FRI 6/7/13	Multivariate Probability Distributions <a href="http://www.youtube.com/watch?v=syVW7DgvUaY">http://www.youtube.com/watch?v=syVW7DgvUaY</a>	Chapter 5 9,10,11	5.119, 5.122, 5.133, 5.138, 5.141, 5.149
MON 6/10/13	Functions of Random Variables	Chapter 6 1,2,3	6.2, 6.5, 6.6, 6.10 (a), 6.14, 6.17, 6.18

TUE 6/11/13	Functions of Random Variables	Chapter 6 4	6.23, 6.26, 6.29, 6.32, 6.33
WED 6/12/13	Functions of Random Variables	Chapter 6 5,6	6.38, 6.40, 6.41, 6.42, 6.43, 6.48, 6.52, 6.57, 6.59 DUE FRI 6/14/13
THU 6/13/13	Functions of Random Variables	Chapter 6 7	6.74, 6.75, 6.80, 6.81, 6.84 DUE MON 6/17/13
FRI 6/14/13	Sampling Distributions and the Central Limit Theorem <a href="http://www.youtube.com/watch?v=Zbw-YvELsaM">http://www.youtube.com/watch?v=Zbw-YvELsaM</a>	Chapter 7 1,2	7.11, 7.13, 7.15, 7.20, 7.21
MON 6/17/13	Sampling Distributions and the Central Limit Theorem <a href="http://www.youtube.com/watch?v=Pujol1yC1_A">http://www.youtube.com/watch?v=Pujol1yC1_A</a>	Chapter 7 3	7.43, 7.45, 7.50, 7.53
TUE 6/18/13	Sampling Distributions and the Central Limit Theorem	Chapter 7 4	
WED 6/19/13	Sampling Distributions and the Central Limit Theorem <a href="http://www.youtube.com/watch?v=CCqWkJ_pgNU">http://www.youtube.com/watch?v=CCqWkJ_pgNU</a>	Chapter 7 5	7.70, 7.74, 7.82
THU 6/20/13	Review		
FRI 6/21/13	EXAM II Chapters 4, 5, 6, & 7	-	

The instructor reserves the right to update any parts of this syllabus as necessary. Students will be notified of any changes.