

Mathematical Statistics  
Spring 2008  
Tentative Course Syllabus

Instructor: Dr. Jayawardhana

Phone: 235-4414

Office: 207 Yates Hall

e-mail: [ananda@pittstate.edu](mailto:ananda@pittstate.edu)

Office Hours: See the timetable below

Class web page: <http://www.pittstate.edu/~ananda/MATHSTAT/MathStat.html>

Text: Probability and Statistical Inference (Seventh Edition) by Hogg and Tanis, Prentice Hall

Prerequisites: Math 253 (Calculus III) and Math 543 (Probability and Statistics)

Coverage:	Chapter 3	3.4	The Gamma and the Chi-Square distributions
		5.2	The normal distribution
		5.3	Random functions associated with normal distribution
	Chapter 4		Multivariate Distributions
		4.1	Distributions of two random variables
		4.2	The correlation coefficient
		4.3	Conditional distributions
		4.4	Transformations of random variables
	Chapter 5		The Normal Distribution
		5.6	The bivariate normal distribution

From other books

The  $T$  and  $F$  distributions

**Test 1 (Closed book)**

Chapter 6	Estimation
	6.2 Point estimation
	6.3 Sufficient statistics
	6.4 Confidence interval for means
	6.5 Confidence interval for difference of two means
	6.6 Confidence interval for variances
	6.7 Confidence interval for proportions
	6.8 Sample size
	6.9 Order statistics
	6.14 Asymptotic distributions of maximum likelihood estimators

**Test 2 (Part 1 closed book, Part 2 open book and notes)**

Chapter 8	Tests of Statistical Hypotheses
8.1	Tests about proportions
8.2	Tests about one mean and one variance
8.3	Tests of equality of two normal distributions
8.5	Chisquare goodness of fit tests
8.6	Contingency tables
8.10	Kolmogorov-Smirnov goodness of fit test
	<b>Test 3 (Open book or take home)</b>

Chapter 7	Baysian Statistics
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Chapter 9	Theory of Statistical Inference
9.1	Power of a statistical test
9.2	Best critical regions
9.3	Likelihood ratio tests
	<b>Test 4 (Closed book)</b>

The instructor will provide additional material wherever necessary.

Final exam will be comprehensive. **(50% closed book. 50% open TEXT book. Notes are not allowed)**

Evaluation:	Hour Tests	= 400 points
	Homework	= 150 points
	Paper	= 25 points
	Final	= 200 points

Grading Scale:	90% - 100%	= A
	80% - 89%	= B
	70% - 79%	= C
	60% - 69%	= D
	<60%	= F

Instructor keeps the right to lower the scale if necessary.

Regular attendance is expected, but it is not counted in your grade. **There will be four one-hour exams and a comprehensive final.** Exam dates will always be announced at least two class sessions ahead of time. The last in-class exam may be given during the last week of classes. Daily homework assignments will be made. Homework will be collected once a week and all the problems will be graded. At the end, homework will be scaled to 200 points. No tests will be made up except for absences due to official university activities or health problems with a Dr.'s excuse. If you have a special need addressed by the **American with Disabilities Act**, please notify me immediately so that appropriate accommodations can be provided.

### Instructor's Time-table

	Monday	Tuesday	Wednesday	Thursday	Friday
8.00-8.50	Math 658 Yates 226	Office	Math 658 Yates 226	Office	Math 658 Yates 226
9.00-9.50 MWF 9:30-10.45 TT		Math 643/743 Yates 106		Math 643/743 Yates 106	
10.00-10.50	Math 543 Yates 216		Math 543 Yates 216		Math 543 Yates 216
11.00-11.50	Office	Office	Office	Office	Office
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1.00-2.00	Math 646 Yates 225	Office	Math 646 Yates 225	Office	Math 646 Yates 225
2.00-3.00					
3.00-4.00					

\* Note that from 2.00 p.m. to 5.00 p.m. there are other commitments such as independent studies, committee meetings, departmental meetings, departmental colloquia etc. You are encouraged to use the office hours allocated before 2.00 p.m. If my office hours conflict with your other classes please let me know.

### Other Issues

- Please take clear notes.
- Please let me know if I am going faster than your pace.
- Please participate in class activities.
- Please ask questions in class, after the class or in my office.
- Please answer my questions and participate in class.
- Please make friends in class and share notes, study together etc.
- Please use my office hours anytime you need help. I care about you and your success.