QINGDAO UNIVERSITY
ONPS INTERNATIONAL SUMMER SCHOOL

Introduction to Statistics

instructor: *Marcello Di Bello*
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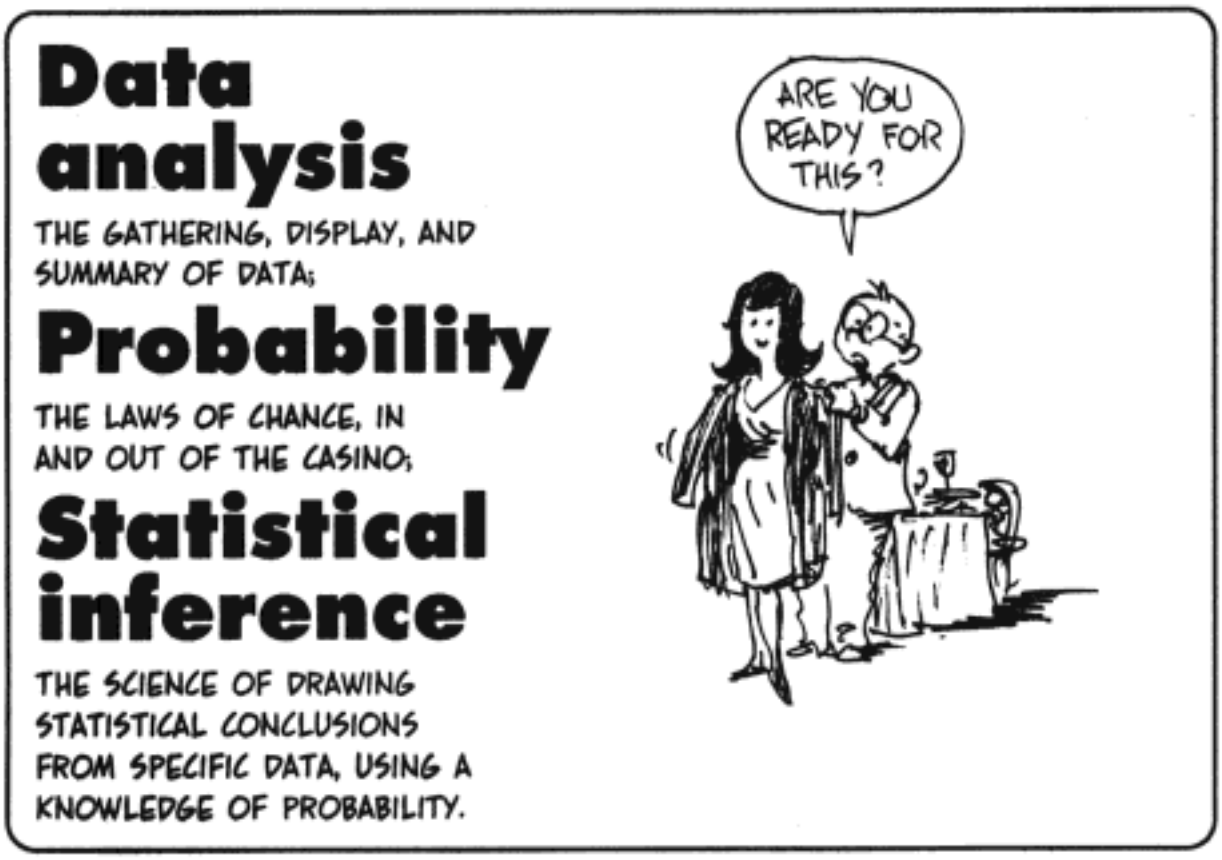
time: July 1st, 2013 – August 2st, 2013
Monday through Friday
45 class hours
4 credit units



OBJECTIVES AND FORMAT

This is a basic introduction to statistics. Emphasis is on the concepts rather than the computations. No mathematical background is needed, except high school algebra and willingness to think carefully. In this course, students will develop an understanding of the basic statistical concepts and tools, and they will appreciate the uses, misuses and limitations of statistical methods. There will be lectures from Monday to Thursday, and a discussion session every Friday.

REQUIREMENTS AND GRADES

Students are expected to fulfill the following requirements:
(1) Four homework assignments [60 % of the grade]
(2) A final in-class exam [40 % of the grade]

Homework assignments and the final exam will be graded on a scale between 0 and 100. The grade scale I shall adopt is as follows:

A+ = 100-95 A = 94-90 A- = 89-85 B+ = 84-80 B = 79-75
B- = 74-70 C+ = 69-65 C= 64-60 C- = 59-55 D = 54-50
Below 50 = F

COURSE MATERIALS

Required textbook is

D. Freeman, R. Pisani, and R. Purves, *Statistics*, 4th Edition, Northon & Company, Inc.

You may also want to consult

David J. Hand, *Statistics: A Very Short Introduction*, Oxford UP.
L. Gonick and W. Smith, *The Cartoon Guide to Statistics*, Harper Perennial.

SCHEDULE | READINGS

PART 1: COLLECTION, DISPLAY AND ANALYSIS OF DATA

Week 1	*Topic*	*Readings*
Mon	Experiment design	Textbook, chapters 1-2
Tue	Histograms	Textbook, chapter 3
Wed	Average and standard deviation	Textbook, chapter 4
Thu	Normal curve	Textbook, chapter 5
Fri	Section discussion	

Week 2	*Topic*	*Readings*
Mon	Correlation **[HW # 1 DUE]**	Textbook, chapters 8
Tue	Correlation	Textbook, chapter 9
Wed	Regression	Textbook, chapter 10
Thu	Regression	Textbook, chapter 11-12
Fri	Section discussion	
PART 2: PROBABILITY		
Week 3	*Topic*	*Readings*
Mon	Probability basics **[HW # 2 DUE]**	Textbook, chapter 13-14
Tue	Binomial distribution	Textbook, chapter 15
Wed	Law of averages; expected value	Textbook, chapter 16-17
Thu	Central limit theorem	Textbook, chapter 18
Fri	Section discussion	
PART 3: STATISTICAL INFERENCE		
Week 4	*Topic*	*Readings*
Mon	Sampling **[HW # 3 DUE]**	Textbook, chapter 19-20
Tue	Confidence intervals	Textbook, chapter 21
Wed	Confidence intervals	Textbook, chapter 23
Thu	Statistical models	Textbook, chapter 24-15
Fri	Section discussion	
Week 5 #	*Topic*	*Readings*
Mon	Hypothesis testing **[HW # 4 DUE]**	Textbook, chapter 26
Tue	Hypothesis testing	Textbook, chapter 27
Wed	Hypothesis testing	Textbook, chapter 28
Thu	The limits of statistics	handout
Fri	**FINAL EXAM**	

Academic Integrity

Academic dishonesty, such as cheating, plagiarism, falsifying identity and academic records, will not be tolerated. Students who are found to have committed any act of academic dishonesty will fail the class.