

COURSE IMPLEMENTATION DATE:	September 1993
COURSE REVISED IMPLEMENTATION DATE:	January 2002
COURSE TO BE REVIEWED:	January 2006
(Four years after implementation date)	(MONTH YEAR format)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT:	MATHEMATICS AND STATISTICS	
MATH 104		4
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
	INTRODUCTORY STATISTICS	
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

This course is an introduction to descriptive statistics, sampling, probability, estimation, hypothesis testing, correlation, and regression. It provides an intuitive approach to why and when the procedures may be used, without involving mathematical proofs.

This course is recommended to anyone who wishes to develop the ability to intelligently evaluate published statistical data, and for students of arts, criminal justice, education, and social science in particular.

As a general rule, students with math 11 are expected to take MATH 104, those with Math 12 are expected to take MATH 106, and those with a full year of calculus are expected to take MATH 270. Students should check program requirements.

Students with credit for MATH 106 or MATH 270 are not allowed to take MATH 104. Students with credit for MATH 104 may subsequently take MATH 270 in order to satisfy the requirements for a math degree.

PREREQUISITES: A "C" or better is required in one of the following: Math 11 (or Principles of Math 11), or Math 085, or Applications of Math 11.

COREQUISITES:

SYNONYMOUS COURSE(S)	SERVICE COURSE TO:
(a) Replaces: _____ (Course #)	_____
(b) Cannot take: _____ for further credit. (Course #)	_____

TOTAL HOURS PER TERM: 75	TRAINING DAY-BASED INSTRUCTION	
STRUCTURE OF HOURS:	LENGTH OF COURSE: _____	
Lectures: 75 Hrs	HOURS PER DAY: _____	
Seminar: _____ Hrs		
Laboratory: _____ Hrs		
Field Experience: _____ Hrs		
Student Directed Learning: _____ Hrs		
Other (Specify): _____ Hrs		

MAXIMUM ENROLLMENT:	36
EXPECTED FREQUENCY OF COURSE OFFERINGS:	Fall, Winter, Spring
WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	<input type="checkbox"/> Yes <input type="checkbox"/> No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

AUTHORIZATION SIGNATURES:

Course Designer(s): _____ Lidna Riva/Barry Garner - update	Chairperson: _____ (Curriculum Committee)
Department Head: _____ Greg Schlitt	Dean: _____ Jackie Snodgrass
PAC Approval in Principle Date: _____	PAC Final Approval Date: November 28, 2001

COURSE NAME/NUMBER**LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:**

The successful student will be able to:

1. Construct frequency tables, histograms and cumulative frequency diagrams from raw data;
2. Obtain simple measures of location and dispersion from the data, and interpret the same;
3. Calculate, with the use of technology, the correlation between two sets of data, and obtain and interpret lines of 'best' fit.
4. Solve simple problems in probability requiring knowledge of conditional probability and statistical independence;
5. Use simple mathematical models for commonly occurring situations such as sampling with replacement, and physical or biological measurements;
6. Apply Pearson's chi-square statistic to draw inferences in appropriate categorical sampling situations;
7. Draw inferences using linear regression.

METHODS:

Lectures, mixed with sessions in the computer lab.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check :) Yes No

METHODS OF OBTAINING PLAR:

Course challenge

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

The text is chosen by a departmental curriculum committee.

Recent text:

Moore and Freeman, WH. *The Basic Practice of Statistics*. Second edition.

SUPPLIES / MATERIALS:

A scientific calculator with statistical functions is required.

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Assignments and quizzes	20 – 30%
Mid-term examinations (2)	30 – 40%
Final examination	40 – 45%

Students must achieve at least 40% on the final exam in order to receive credit for this course.

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

1. Introduction to statistical concepts, e.g. variation; and software, e.g. MINITAB, Excel, Quattro Pro.
2. Descriptive statistics:
 - Frequency tables, histograms, cumulative frequencies, etc.
 - Measures of location, e.g. mean, median, mode; and scale, e.g. standard deviation, quantiles.
 - Linear transformations.
 - Bivariate data, correlation, linear regression, least squares, interpretation of computer output.
3. Probability:
 - Two-way tables, Venn and tree diagrams; joint, marginal and conditional probability.
 - Independence and dependence.
 - Simple models for discrete random variables, sampling with and without replacement.

Expectation, mean, variance and standard deviation.

The normal distribution, standardization, linear transformations

The chi-square probability distribution.

Random sampling, simulation, especially as applied to limit theorems, e.g. the Central Limit Theorem.

4. Inferential statistics: estimation, confidence intervals and tests of hypothesis.

These notions applied to proportions, rates and means for one and two populations.

Pearson's chi-square statistic applied to a variety of problems, e.g. goodness-of-fit, testing for independence in a two-way table.

The Student 't' probability distribution.

Confidence intervals and test of hypothesis about the slope in simple linear regression.