

COURSE IMPLEMENTATION DATE:	January 1998
COURSE REVISED IMPLEMENTATION DATE:	September 2003
COURSE TO BE REVIEWED:	September 2007
(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 108		3
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
	Statistics for Nursing Research	
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

The emphasis of this course is on the understanding of nursing research papers. Topics include: types of data and corresponding graphical and summary description; methods of sampling from finite populations; two-way tables and independence; sensitivity and specificity; prevalence and incidence; the normal distribution; regression and correlation; measure of association; sampling proportions and rates; Pearson's chi-square; hypotheses and confidence intervals; multiple regression, validity and reliability; and experimental versus observational data. Students will use computer software, such as Minitab, or a spreadsheet.

Note: It is not intended to fulfill a statistics requirement for any program other than Nursing.

PREREQUISITES: **Prerequisites: Entry into the Nursing degree program or permission of the Nursing department.**

COREQUISITES: **none**

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

TOTAL HOURS PER TERM:	45	TRAINING DAY-BASED INSTRUCTION
STRUCTURE OF HOURS:		LENGTH OF COURSE: _____
Lectures:	30	HOURS PER DAY: _____
Seminar:		
Laboratory:	15	
Field Experience:		
Student Directed Learning:		
Other (Specify):		

MAXIMUM ENROLLMENT:	36
EXPECTED FREQUENCY OF COURSE OFFERINGS:	Every winter semester
WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	<input 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No

AUTHORIZATION SIGNATURES:

Course Designer(s): _____ Barry Garner & Wanda Gordon	Chairperson: _____ Edith Camm (<i>Curriculum Committee</i>)
Department Head: _____ Greg Schlitt	Dean: _____ Jackie Snodgrass
PAC Approval in Principle Date: _____	PAC Final Approval Date: February 27, 2002

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

The successful student will be able to:

1. Be familiar with the basic statistical nomenclature;
2. Understand the inherent variation in all types of measurement, response and prediction;
3. Appreciate the uses and limitations of diagnostic tests, and the need for supporting evidence;
4. Consider the effects of measurement errors in the independent variable and the notions of replicability and reliability;
5. Assemble experimental and observational responses into an appropriate flat software file for statistical analysis;
6. Use statistical software to perform customary statistical analyses;
7. Have some understanding of the output of the statistical software.

METHODS:

Lectures, class discussion, use of statistical software in computing labs.

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 textbook is chosen by a departmental curriculum committee.

Recent text: Norman, G.R. and Streiner, D.L., *PDQ Statistics*, Mosby (Times Mirror).

SUPPLIES / MATERIALS:

A computer lab with Minitab and a spreadsheet program.

STUDENT EVALUATION:

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

Assignments	20%
Tests	40%
Final exam	40%

A student 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:]

Data: nominal ordinal, interval, ratio data; appropriate graphical representation, bar charts, pie charts, histograms, frequency diagram, relative cumulative frequency diagrams. Mode, modal interval, median, quartiles, percentiles, percentile ranks, average, grouped average. Range, interquartile range, variance, standard deviation (SD).

Sampling Designs: discussion of the following topics for consumers of statistics: population and sampling frames; probability and non-probability sampling; simple random sampling with and without replacement; stratification; cluster sampling; ratio estimation. Mean, proportion and rates: estimates and SDs.

Two-Way Tables: Cross-classification. Marginal, joint and conditional proportions/probabilities. Independence. Prevalence and incidence. Sensitivity and specificity.

The Normal Distribution: The standard normal probability distribution. Standardisation. Change of means and SDs. The implications of the Central Limit Theorem.

Simple Linear Regression and Correlation: Covariance and correlation. Regression. Simulation of given correlations. Association versus causal effects. Means, SDs, covariances and correlations for linear combinations.

Measures of Association: Cohen's Kappa, Odds ratio, Yule's colligation. Spearman's rank correlation.

Sampling Proportions and Rates: Sampling variations, Pearson's chi-square measure of goodness-of-fit. Hypothesis testing, confidence intervals. The P-value. Tests of independence and equality of rates. Standardized mortality ratio.

Sampling Means: Large sample and small sample inference for means. Student's t distribution. Directional alternate hypotheses, one-tailed and two-tailed tests. Type I and II errors.

Multiple Regression: comparison of treatments by multiple regression. The ANOVA table. Covariates.

Experimental Design: Experimental versus observational situations. Randomization. Reliability and reproducibility; Cronbach's alpha; attenuation. N of 1 designs.