MATH 15 Course Outline as of Fall 1999

CATALOG INFORMATION

Dept and Nbr: MATH 15   Title: ELEM STAT COMPUTER
Full Title: Elementary Statistics with Computer
Last Reviewed: 1/9/2024

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	4.00	17.5	Lecture Scheduled	70.00
Minimum	4.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 140.00   Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable
Grading: Grade or P/NP
Repeatability: 05 - May Be Taken for a Total of 4 Units
Also Listed As:
Formerly:

Catalog Description:
Computer investigation, exploration and simulations of concepts in statistics, descriptive statistics, probability theory including the uniform, binomial, hypergeometric, Poisson, normal, chi-square and Student's t distributions, central limit theorem, estimation of population parameters from a sample, hypothesis testing including parametric and nonparametric methods, confidence intervals, correlation and linear regression, introduction to analysis of variance computer simulations and Monte Carlo methods.

Prerequisites/Corequisites:
Math 155.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Computer investigation, exploration and simulations of concepts in statistics: descriptive statistics, probability theory, central limit theorem, estimation, hypothesis (parametric & non-parametric), confidence intervals, correlation and linear regression, analysis

of variance. (Grade or P/NP)
Prerequisites/Corequisites: Math 155.
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC. (CAN STAT2)
Repeatability: May Be Taken for a Total of 4 Units

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area		Effective:	Inactive:
	B	Communication and Analytical Thinking	Fall 1989	
	MC	Math Competency	Fall 1981	
CSU GE:	Transfer Area		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 1990	

IGETC:	Transfer Area		Effective:	Inactive:
	2A	Mathematical Concepts & Quantitative Reasoning	Fall 1993	

CSU Transfer:	Transferable	Effective:	Fall 1989	Inactive:
UC Transfer:	Transferable	Effective:	Fall 1989	Inactive:

CID:
CID Descriptor:MATH 110   Introduction to Statistics
SRJC Equivalent Course(s):   MATH15 OR PSYCH9

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
1. Apply graphic displays of data and frequency distrributions.
Define mean, median, mode, percentiles, variability, standard
deviation.
3. Apply laws of probability and Baye's formula.
4. Define combinations, permutations, sample space, probability
distributions.
5. Apply Central limit theorem.
6. Calculate sampling distributions of means, proportions, standard error
confidence intervals.
7. Apply hypothesis testing for mean, proportion, variance.
8. Apply goodness to fit and independence, required sample size,
correlation and linear regression, introduction to analysis of variance.
9. Apply statistics software package for evaluation of data and inference.

Topics and Scope:

1. Statistical Description.
   Graphic display of data, frequency distributions, mean, medium,

mode, percentiles, variability, standard deviation, Chebyshev's Theorem.
2. Counting and Probability Distributions.
   Sample space, laws of probability, Bayes' Formula, combinations, permutations, probability distributions (including the uniform, binomial, hypergeometric, Poisson, normal, chi-square, and Student's t), normal approximation to bionomial.
3. Statistical Inference.
   The sampling distributions of means proportions, standard error, Central Limit Theorem, confidence intervals, hypothesis testing (parametric and extended nonparametric), mean, proportion, variance, large and small samples, goodness of fit and independence, required sample size, correlation and linear regression, introduction to analysis of variance.
4. Uses of Computer and Electronic Calculator.
   Use of statistics software package, evaluation of data, Monte Carlo methods of simulations.

Assignment:

1. The student will have daily outside reading, problem set assignments from required text(s), or instructor chosen supplementary materials.
2. Instructional methodology may include, but not limited to: lecture, demonstrations, oral recitation discussion, supervised practice, independent study, outside project or other assignments.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Exams	Problem solving 25 - 75%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Performance exams	Skill Demonstrations 20 - 40%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice		Exams 5 - 25%

Other: Includes any assessment tools that do not logically fit into the above categories.

PROJECT - ORAL OR WRITTEN		Other Category 0 - 15%

Representative Textbooks and Materials:
Text(s) required of each student will be selected by the department, a committee of the department, or the responsible instructor from the books currently available. Choices in the past have included:
STATISTICS, Triola, (7th) 1997 Addison-Wesley
STATISTICS, Bluman (3RD) 1997 WC Brown