PSYCH 9 Course Outline as of Summer 2019

CATALOG INFORMATION

Dept and Nbr: PSYCH 9   Title: INTRO/BEH SCI STATISTICS
Full Title: Introduction to Behavioral Sciences Statistics
Last Reviewed: 2/10/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00   Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable
Grading: Grade Only
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly: PSYCH 1C

Catalog Description:
This course introduces statistical methods for analyzing data in the behavioral sciences. Topics include basic research design; descriptive statistics, probability and sampling distributions; statistical inference and power; linear correlation and regression; t-test and analysis of variance; chi-square. Students use appropriate technology (e.g., calculators and SPSS) to analyze real-world data and report results using American Psychological Association style.

Prerequisites/Corequisites:
Course Completion of MATH 154 OR MATH 155 OR higher or appropriate placement based on AB 705 mandates.;
AND Course Completion of PSYCH 1A OR ANTHRO 1 OR SOC 1

Recommended Preparation:
Eligibility for ENGL 1A or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: This course introduces statistical methods for analyzing data in the behavioral sciences. Topics include basic research design; descriptive statistics, probability and sampling

distributions; statistical inference and power; linear correlation and regression; t-test and analysis of variance; chi-square. Students use appropriate technology (e.g., calculators and SPSS) to analyze real-world data and report results using American Psychological Association style. (Grade Only)
Prerequisites/Corequisites: Course Completion of MATH 154 OR MATH 155 OR higher or appropriate placement based on AB 705 mandates.;
AND Course Completion of PSYCH 1A OR ANTHRO 1 OR SOC 1
Recommended: Eligibility for ENGL 1A or equivalent
Limits on Enrollment:
Transfer Credit: CSU;UC.
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area		Effective:	Inactive:
	B	Communication and Analytical Thinking	Fall 2018	
	MC	Math Competency		
	D	Social and Behavioral Sciences	Fall 2015	Fall 2016
CSU GE:	Transfer Area		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 2016	
IGETC:	Transfer Area		Effective:	Inactive:
	2A	Mathematical Concepts & Quantitative Reasoning	Fall 2016	

CSU Transfer:	Transferable	Effective:	Fall 2015	Inactive:
UC Transfer:	Transferable	Effective:	Fall 2015	Inactive:

CID:

CID Descriptor:SOCI 125	Introduction to Statistics in Sociology
SRJC Equivalent Course(s):	PSYCH9
CID Descriptor:MATH 110	Introduction to Statistics
SRJC Equivalent Course(s):	MATH15 OR PSYCH9

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Determine the appropriate statistical test for a given data set for behavioral sciences and hypothesis.
2. Analyze behavioral sciences research data (e.g. SPSS, Excel).
3. Interpret research findings and present them in American Psychological Association format.

Objectives:
Upon completion of this course, students will be able to:
1. Specify the appropriate independent variables, dependent variables, research hypothesis, and null hypothesis.

2. Compare and contrast an experimental design with a correlational research design.
3. Produce both a diagrammatic and numerical summary for a given set of raw data.
4. Calculate probabilities for a normal distribution.
5. Interpret the relationship between the correlation coefficient and the regression line.
6. Compute a confidence interval for a population proportion and for a population mean.
7. Test hypotheses about a single sample (one and two variables).
8. Test hypotheses involving two samples using samples t-test.
9. Test hypotheses involving several samples using analysis of the variance.
10. Test hypotheses involving a single nominal variable using the chi-square goodness of fit.
11. Test hypotheses involving two nominal variables using chi-square.
12. Determine and interpret the effect size for statistical tests
    (e.g., Pearson's r, independent samples t-test).
13. Report statistical results using American Psychological Association style.
14. Analyze data using a statistical software package (e.g., SPSS).

Topics and Scope:

1. Introduction to Statistics that follows American Psychological Association style.
2. Summarizing Data: Tables, Graphs, and Distributions
3. Summarizing Data: Central Tendency
4. Summarizing Data: Variability
5. Foundations of Inferential Statistics
6. Introduction to Probability and Normal Distributions
7. Probability and Sampling Distributions: The Distribution of Sample Means
8. Introduction to Hypothesis Testing
9. Testing Means: Independent Sample t-Tests
10. Testing Means: Related Samples t-Test
11. Estimation and Confidence Intervals
12. Introduction to Analysis of Variance: One-Way Between-Subjects Design
13. Analysis of Variance: One-Way Within-Subjects (Repeated Measures) Design
14. Analysis of Variance: Two-Way Between-Subjects Factorial Design
15. Introduction to Correlation
16. Introduction to Linear Regression
17. Introduction to Nonparametric Tests: Chi-Square Tests
18. Introduction to Nonparametric Tests: Tests For Ordinal Data

Assignment:

1. Read approximately 20-25 pages per week, recapitulate assigned material in the textbook, supplements, and research articles.
2. One to two midterm exams and one final on lectures, reading concepts and terminology.
3. Solve statistical problems and scenarios related to behavioral sciences data.
4. Report results on a statistical project using American Psychological Association style.
5. Complete approximately a 1250 word (5 pages) statistical project/report involving the use of both descriptive and inferential statistics (e.g., given a data set for behavioral sciences and hypothesis, determine how to analyze the data, evaluate the hypothesis, and share the results using American Psychological Association style).
6. Oral presentations and group projects may be assigned.

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.

Statistical Research paper(s) and Essay(s)

Writing 10 - 25%

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

Question/Answer Worksheets

Problem solving 25 - 50%

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

None

Skill Demonstrations 0 - 0%

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

Multiple choice, true/false, fill-in, short answer

Exams 25 - 35%

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

Oral presentations, group projects

Other Category 10 - 20%

Representative Textbooks and Materials:

Essentials of Statistics for The Behavioral Sciences. 9th ed. Gravetter, Frederick and Wallnau, Larry. Cengage Learning. 2018

Statistics for the Behavioral Sciences. 3rd ed. Privitera, Gregory. Sage Publications. 2017

Modern Statistics for the Social and Behavioral Sciences: A Practical Introduction 2nd ed. Wilcox, Rand. CRC Press: Taylor & Francis Group. 2017

Other Recommended Materials
    Calculator
    Access to IBM Statistical Package for the Social Sciences (SPSS) Statistical Software or comparable