Basic Course Information: Psychology 214

Semester:	**Fall 22**	Instructor Name:	**Christina Aguilera**
Course Title & #:	**Psy 214 Statistical Methods in Behavior Science**	Email:	**Christina.aguilera@imperial.edu**
CRN #:	**10318**	Webpage (optional):	**https://www.imperial.edu**
Classroom:	**Online**	Office #:	**Online**
Class Dates:	**August 15- December 10**	Office Hours:	**Tuesdays 12 – 1 pm (by appointment)**
Class Days:	**Asynchronous**	Office Phone #:	**Text ONLY: (760) 457-5077**
Class Times:	**Asynchronous**	Emergency Contact:	**N/A**
Units:	4.0	Class Format:	**Asynchronous Online**

Course Description

Quantitative methods in behavioral sciences are considered including: scales of measurement, measures of central tendency and variability; probability and sampling distributions, visual displays of data (graphical methods), frequency tables and percentages; introduction to hypothesis testing, statistical inference and measures of association using correlation and linear regression; analysis of variance, chi-square and t-tests. Emphasis is placed on using software for data analysis such as SPSS and Excel and interpreting statistical findings from such analysis. Examples will be used from disciplines including business, social sciences, psychology, sociology, life sciences, health sciences, education and related areas. (C-ID: SOCI 125) (CSU/UC)

Course Prerequisite(s) and/or Corequisite(s)

PSY 101 and
MATH 091 or
MATH 098 with a grade of "C" or better or appropriate placement as defined by AB705.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Explain common methods for gathering data and identify the strengths and weaknesses of the various approaches; differentiate between descriptive and inferential statistics, populations and samples, and variables and data identify the properties of discrete and continuous variables.
2. Align statistical notation and symbols with appropriate quantities of equations (e.g. Sigma for summation notation, N for population size etc.), match data types nominal, ordinal, interval, ratio to the appropriate scales of measurement and explain the implications of data type on the choice of statistical methods.

3. Create, analyze and interpret graphical and numerical/tabular representations of data; calculate common measures of central tendency (e.g. mean) and variability/dispersion (e.g. standard deviation) for both samples and populations.
4. Construct and interpret confidence intervals and explain the importance of the Central Limit Theorem in relation to statistical inference; formulate and test hypotheses of sample data using parametric testing such as linear regression, t-tests, and analysis of variance; understand and apply non-parametric methods such as a chi-square as an alternative to parametric testing.
5. Use computer technology which may include one or more of the following Microsoft Excel, SPSS, R, Minitab to analyze data from a variety of sources such as business, social sciences, psychology, life sciences, health sciences, and education, understand how to create visual displays of data, interpret output and properly format output to conform to APA standards for publication.

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. differentiate between descriptive and inferential statistics analysis and know when to apply each correctly when answering data driven questions
2. distinguish the difference between a population and a sample along with a parameter and a statistic; and understand the benefits and drawbacks of using sample statistics to estimate population parameters
3. identify the standard methods of obtaining data such as random and representative sampling and the limitations of the techniques
4. distinguish among different scales of measurement (e.g. nominal, ordinal, interval, ratio) and the implications for data analysis
5. create frequency distribution tables with proportions, percentiles, cumulative percentile; summarizing data graphically with bar charts, histograms, and stem and leaf plots and also in tabular form
6. compute various descriptive statistics used to measure central tendency (i.e. mean, median and mode) of discrete and continuous variables and determine the appropriateness of each of these measures
7. calculate common measure of dispersion (i.e. range, SS, variance and standard deviation) of discrete and continuous variables and determine the appropriateness of each of these measures
8. use probability theory to discuss aspects of the normal distribution including its use in statistical reasoning, calculate z-scores and use the unit normal table to estimate probabilities
9. apply concepts of sample space and probability, use probability theory as it applies to the concepts of random variables and expected values
10. understand binomial and normal distribution and the relation to the Central Limit Theorem and its use in statistical reasoning; construct and interpret confidence intervals
11. formulate hypothesis tests involving samples from one and two populations and select the appropriate technique to test the hypothesis and analyze the data
12. explain the core concepts in hypothesis testing such as the null vs. alternative hypotheses, one and two-tailed tests of significance, p-values and Type I and II errors, choose the appropriate parametric (z-test, t-test, F-test, ANOVA, linear regression) or non-parametric tests (chi-square and Mann-Whitney U) to determine levels of significance
13. perform hypothesis testing when more than one independent variable is present, one-way ANOVA vs. two-way factorial designs
14. compute and interpret regression equations, the coefficients of Spearman's and of Pearson's correlations and levels of significance; and create graphical representations of data using scatter plots

15. utilize technology-based statistical procedures to analyze data, interpret results and create output such as spreadsheets, data frames, tables and charts from various disciplines including business, social sciences, psychology, sociology, life science, health science, and education using one or more popular data analysis software programs such as SPSS, Minitab, R and/or Excel.

Textbooks & Other Resources or Links

Essentials of Statistics for The Behavioral Science by Frederick J Gravetter, Larry B. Wallnau, Lori-Ann B. Forzano 8th Edition.

Course Content and Instructional Methods

Expectations for the Student and Instructor Alike

Student Expectations- To be successful in this course, you are expected to:

- Read the entire **Syllabus.**
- Consistently check **Announcements**, your school email account, and the Canvas Inbox.
- Review the **calendar** for due dates.
- Participate in **Discussions** (post weekly and respond to your classmates).
- Turn in your own work that's been thoughtfully completed, proofread for errors in spelling and grammar.
- **Communicate** with your instructor of any problems or confusion well in advance of the due date.
- **Complete** all discussions, assignments, online quizzes and/or exams on time.

Instructor Expectations- As your instructor, I will

- **Communicate** to you via Canvas announcements and Inbox.
- **Post** weekly course-related announcements.
- **Respond** to your email or phone message within 24-48 hours.
- **Monitor** all discussions and provide feedback to the entire class where needed at least weekly.
- Provide individual **feedback** on assignments/papers/projects within one week of the due date as needed.
- Work with you so you will have a **successful learning experience** in this course!
- Provide all course material in an accessible format.

Course content will be covered as necessary to meet the requirements for the course. Some of the material may be addressed and/or supplemented to reflect the appropriate quality of learning for each student. If course material is adjusted, covered or not, each student will have access to materials to accomplish tasks/address assignments. Changes in the schedule can change at any given moment for any given reason. Planned course content is for lecture and labs.

Method of Evaluation: Essay(s), Mid-term/Final Exam(s), Objective, Oral Assignments, Problem Solving Exercise, Quizzes, Written Assignments and/or Participation Activities

*Instructional Methodology: Audio/Visual,Demonstration, Discussion, Group Activity, Lecture and/or Simulation/Case Study*Course Grading Based on Course Objectives

Course Policies

Be honest in all that you do! If you use a source that is not your work, make sure you cite each and every one. Everyone deserves credit for their work. Cheating will not be tolerated in any capacity.

Course Drop Policy:

During the first week of this course, you are required to participate, or you may be dropped from the course. Please post your introduction and complete any activities required for Module O.. These activities are very important so you won't be dropped from the course for non-participation during this first week. If you have any challenges with these tasks during the first week, please notify me as soon as possible so we can get you started!

Throughout the course, I will review your participation and assignments. If you fail to complete the required activities for two consecutive weeks, this may be considered excessive absences and may be grounds for being dropped. It's your responsibility to notify me if you have any challenges as soon as possible. It is also your responsibility to drop the course if you feel you can no longer participate and complete the course.

Please refer to the General Catalog for details of drop and withdrawal "W" deadlines. If you don't drop the course before the end of the course, you will, unfortunately, earn a failing grade for the course. After the final withdrawal deadline, you will receive a grade regardless of whether you completed the work or not, potentially resulting in a failing grade on your permanent academic record.

Late Work Policy: In this online course, you are required to submit tests/quizzes, discussions and activities/ assignments by the due date via Canvas. Once a module/discussion closes, you won't be able to post or respond so please set a reminder for those due dates. Check the calendar in Canvas for due dates and reminders. A handy tip is to set a calendar item or alarm on your phone to remind yourself of the due dates. Quizzes and exams can not be made up.

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IVC Student Resources and Modality

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This is an asynchronous course. That means we will NOT regularly meet online. Office hours are Tuesdays, 12-1 pm (by appointment), from August 15 through Dec 10, 2022.

This is NOT a Live Course

This is NOT a live course and will use Zoom for class meetings/appointments. Visit Zoom for further information you may need to reference to download and use Zoom.

Live transcript via Zoom will NOT be used during live class to accommodate students who may need it. Recordings of class posted on Canvas will not include live transcript and are for students who might miss class or need to reference instructions/information/materials at a later time.

What if you need live transcript?

Should you need a copy of live transcript from a class, there will NOT be one available. Contact your instructor individually for further assistance:

- o **Email:** Christina.aguilera@imperial.edu
- o Text ONLY: 760-457-5077

If you choose to contact me via text please include the following information or there will be no reply: Your full name (first and last), your class/crn, and your concern/communication.

- o Office Hours: Office hours are Tuesdays from 11 am -1 pm. You may contact me all week to get a response within 24-48 hours. If you have a pressing matter do not hesitate to email/text me outside of office hours. As soon as I am able to, I will get back to you. You will be contacted by me via Inbox if needed or in any fashion that you have established communication (text, email, inbox, etc.)
- o If you need further assistance or accommodations the Special Programs and Services for the Disabled (DSP&S) is available as well.

Special Programs and Services for the Disabled

Your experience in this class is important to me; it is the policy and practice of Imperial Valley College, to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers or are qualified for accommodations, please contact the Disabled Student Programs and Services (Links to an external site.) (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313.

Grading and Anticipated Class Schedule/Calendar

All course work will result in a letter grade. Letter grades will be calculated according to a point system. There are 100 points available for this course. Your final amount of points earned will equal a percentage that calculates into a letter grade.

Course Work and Grading Table

Course Work	Total Points / 100	Percent of Grade (%) / 100%
Assignments, Discussions, etc.	30	30%
Quizzes	30	30%
Midterm/Final	20	20%
Labs	20	20%

Letter Grade Percentage Range: Points Range

Grading Scale

A = 90 - 100%
B = 80 - 89%
C = 70 - 79%
D = 60 - 69%
F = 59 or below

Anticipated Class Schedule Psy 214

Instructor: Christina Aguilera

Course Modality: Asynchronous course

Online: Aug 15- Dec 10

Anticipated Course Calendar Fall 22 Psy 214

Week #	Dates	Chapters	Assignments
1	Aug 15- 20	Orientation Intro Notes	• Get your book! • Read Chapter (Ch) 1 and 2 • Discussions (Disc)/Participation Activities (PA)/Assignments (Quizzes/Labs/etc.)
2	Aug 22-27	Chapter 1 Chapter 2	• Read Ch 3 • Disc/PA(s)/Assignments
3	Aug 29- Sept 3	Chapter 3	• Read Ch 4 • Disc/PA(s)/Assignments
4	Sept 5- 10	Chapter 4	• Read Ch 5 • Disc/PA(s)/Assignments
5	Sept 12-17	Chapter 5	• Disc/PA(s)/Assignments • Read Ch 6
6	Sept 19- 24	Chapter 6	• Read Ch 7 • Disc/PA(s)/Assignments

7	Sept 26- Oct 1	Chapter 7	• Read Ch 8 • Disc/PA(s)/Assignments
8	Oct 3- 8	Chapter 8	• Disc/PA(s)/Assignments • Read Ch 9 • Midterm Review
9	Oct 10- 15	Chapter 9	• Read Ch 10 • Disc/PA(s)/Assignments • Midterm
10	Oct 17- 22	Chapter 10	• Read Ch 11 • Disc/PA(s)/Assignments
11	Oct 24- 29	Chapter 11	• Disc/PA(s)/Assignments • Read Ch 12
12	Oct 31- Nov 5	Chapter 12	• Disc/PA(s)/Assignments • Read Ch 13
13	Nov 7- 12	Chapter 13	• Disc/PA(s)/Assignments • Read Ch 14 and 15
14	Nov 14- 19	Chapter 14 Chapter 15	• Disc/PA(s)/Assignments
• Nov 21- 26 Break	Break	Break	

| 16 | Nov 28- Dec 3 | Presentations

Review | • Final Study Guide & Review
• Disc/PA(s)/Assignments
• Extra Credit Review |
| 17 | Dec 5- 10 | Final

Extra Credit | • Final
• Extra Credit |

This is a tentative schedule and subject to change without notice

Subject to change without prior notice