MARIAN UNIVERSITY
Indianapolis

PSY 205 Statistical Methods 3 Credits

Semester and Year:

Online Instructor:

Email: Contact via Canvas email

Required Textbook(s):

- Spatz, C. (2018). *Exploring Statistics Tales of Distributions*. 12th edition. Conway, AR: Outcrop. ISBN# 978-0-9963392-2-3
- Kirkpatrick, L. A. & Feeney, B. C. (2016). *A Simple Guide to IBM SPSS for Version 23*. Belmont, CA: Thompson Wadsworth. ISBN # 978-1-305-87771-9

Students are required to purchase the items listed above prior to the start of the course. Look into all of your options - new, used, rental or e-books. If you choose a rental option, be sure to understand the policies and the due dates for the returns. While you have the option to obtain your course materials from any source, ordering from the MU Book Store can be a convenient option. Please note that you can also charge bookstore purchases to your student account or use your MU financial aid if applicable. Visit www.bkstr.com/marianustore/home (Links to an external site.).

Additional Resources:

The Mother Teresa Hacklemeier Memorial Library at Marian University provides various databases http://www.marian.edu/library/Pages/default.aspx (Links to an external site.)

- **Marian University requires all work be completed on a laptop or PC; this includes all exams and quizzes.**

Prerequisites: At least one year of high school algebra.

Course Description

This course is designed to provide the student with an introductory knowledge of the statistical methods used in Behavioral Sciences and experience with their use. Basic concepts, uses, and methods of statistical computation, including descriptive statistics, correlation and regression, probability, estimation, sampling, design, hypothesis testing, t-tests, ANOVAs, and Chi Square are presented in this course. This is a computational and interpretational statistics course designed to prepare students for upper division/graduate courses in research, data evaluation, and analytical reasoning. Computer software is included to facilitate learning.

Course Objectives:

Upon successful completion of this course, students will be able to:

General Education Learning Objectives

- b. Demonstrate a knowledge and applications of the basic concepts of the natural sciences and mathematics and their relationships to contemporary life and work by:
- b3. Appropriately using mathematical concepts, language, and tools for problem-solving
- GE Goal 3: Intellectual Skills: This domain involves the acquisition of competent skills and abilities in reasoning, inquiry, information resources, diversity, and quantitative and communication fluency.

Quantitative Fluency

- Translate verbal problems into mathematical algorithms and construct valid mathematical arguments using the accepted symbolic system of mathematical reasoning
- To produce computational accuracy for basic algebra skills including solving for unknowns, using the rules of summation and order of operation, using exponents, expanding binomials, and factorials
- To construct computational accuracy for descriptive statistics including measures of central tendency and variability and the ability to create and interpret graphs, tables, and frequency distributions
- To apply accurate logic and computation of research data by identifying and applying statistical tests and procedures, recognizing inappropriate values and problem solutions, and correctly applying the appropriate statistical problem solving
- To explain the comprehension of statistical concepts such as probability, theoretical distributions, samples from populations, critical values, and statistical assumptions
- To accurately interpret and evaluate tests of statistical hypotheses performed by hand and using SPSS software

Teaching Strategies

Homework, quizzes, exams.

Assignments & Assessment Methods:

<u>Discussions:</u>

There will be one **discussion assignment** per module (10 total) which will involve you posting a response to a discussion assignment question(s) and then responding to the posts of other students.

Submit an initial post(s) responding to the prompt before 11:59 pm on Wednesday of weeks with discussion forums, and post your reflections on at least two other students' posts before 11:59 pm on Friday of that same week.

<u>Homework:</u>

The **homework problems** will consist of problems from each chapter (15 total) that are assigned as practice for the concepts and calculations in that chapter. These homework problems will provide valuable practice for the exams and using SPSS.

<u>Quizzes & Exams:</u>

There will be a **quiz for every module** (10 quizzes total). Each quiz will consist of a mixture of **conceptual**, **calculation**, and **SPSS questions.** The questions will be either multiple choice or short answer format and is open book with notes allowed.

The **SPSS questions** will require the use of SPSS to generate output which can then be pasted into the quiz.

Free SPSS Resource: https://jasp-stats.org/download/ (Links to an external site.)

The **final exam** will be comprehensive (in reality, all quizzes are cumulative since that is the nature of statistics), and will include conceptual, calculation, and SPSS questions on content from the previous chapters.

***Special note on entering equation information in Canvas:** At times, you will be required to show your work by entering equation process information using the built-in math equation editor. This is a built-in tool within the Canvas quiz question(s) itself.

Here is a tutorial (Links to an external site.)on using this math equation editor: (**IMPORTANT**: The current Canvas math equation button is the √ and not the , as describe in the tutorial)

Do not be lulled into thinking that the quizzes and final exam will be easy since you may use your text and notes on them, the majority of these questions will be based on your ability to apply the concepts, procedures, and formulae to new situations, so the only chance you have of completing these exams successfully is to know the information well by having practiced it on your homework assignments and study guides.

Methods of Evaluation

Your overall grade for the course will be based upon the final exam, module quizzes, homework problems, and discussion assignments.

Here is a concise listing of the factors contributing to the overall course grade:

Assignments	**Points**
Final Exam	120
Module Quizzes (**45** points per chapter)	630
Homework Problems (**10** points per chapter)	150
Discussion Assignments (**10** points per module)	100
Total	**1000**

Grading Scale

Course grades will be determined as a percentage out of 1000 possible points:

A	100%-92%
A-	90%-91%
B+	89%-87%
B	86%-82%
B-	81%-80%
C+	79%-77%

C	76%-72%
C-	71%-70%
D+	69%-67%
D	66%-60%
F	59% and below

Grades will not be curved or converted to a normal distribution. Quizzes and the final exam will be due on the scheduled dates regardless of anything short of a natural disaster. Make-ups will be available only to those who have a legitimate excuse (e.g., accident, illness, slow death by rounding error, etc.) for missing the quiz or exam. If you are not able to complete a quiz or exam is due for any very good reason; **inform the instructor in advance** so that you may take the quiz or exam in advance. If you miss the due date on a quiz or exam, you will receive a grade of zero on that exam.

Course Policies:

Late Policy & Due Date Extensions:

Homework and discussion assignments that are submitted later than the due date will be penalized one point for each class period late; there is very little time for catching up in a course that is comprehensive as is this one, so don't get behind.

Acceptance of work submitted past the due date or requests of due date extensions may be considered in the event of unforeseen, documentable events. Examples of such events include medical emergencies, documentable technical issues, death of a loved one, etc. However, simply forgetting, time zone differences, going on vacation, or not preforming a well as intended are not acceptable excuses.

Plagiarism Statement: Plagiarism is using the words or ideas of another as your own without giving credit to the source author. This also includes taking a paper found online and submitting it as one's own paper and/or cutting and pasting from a website and submitting it as your work product.

Plagiarism is defined in detail in the Code of Student Rights and Responsibilities under Section 8: Academic Conduct Procedures, as well as an extended description of academic dishonesty:

https://www.marian.edu/docs/default-source/campus-life/codeofstudentrightsandresponsibilities.pdf?sfvrsn=18 (Links to an external site.)

The following are some helpful websites for understanding plagiarism, documentation and citation:

- Marian University's library: https://www.marian.edu/current-students/library (Links to an external site.)
- Plagiarism.org: https://plagiarism.org/ (Links to an external site.)
- Purdue OWL: https://owl.purdue.edu/ (Links to an external site.)

Student Handbook

Please refer to the MAP Student Resources and Student Support Resources modules for information regarding academic and school of policies including Services for Students with Disabilities.

****Any changes to this syllabi will be communicated to the student.**