

ORIGINATOR'S SECTION:														
1. College: <input type="checkbox"/> CHABSS <input type="checkbox"/> CoBA <input checked="" type="checkbox"/> CoEHHS <input type="checkbox"/> CSM	Desired Term and Year of Implementation (e.g., Fall 2008): Fall 2016													
2. Course is to be considered for G.E.? (If yes, also fill out appropriate GE form*) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No														
3. Course will be a variable-topics (generic) course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ("generic" is a placeholder for topics)														
4. Course abbreviation and Number:* HD 220														
5. Title: (Titles using jargon, slang, copyrighted names, trade names, or any non-essential punctuation may not be used.) Statistics in Human Development														
6. Abbreviated Title for PeopleSoft: (no more than 25 characters, including spaces) Statistics in Human Dev														
7. Number of Units: 3														
8. Catalog Description: (Not to exceed 80 words; language should conform to catalog copy. Please consult the catalog for models of style and format; include all necessary information regarding consent for enrollment, pre- and/or corequisites, repeated enrollment, crosslisting, as detailed below. Such information does <u>not</u> count toward the 80-word limit.) Focus on statistical analysis and application in health and human services, including quantitative research methods, frequency distributions and graphs, relative measures and normative distribution, correlation and regression, sampling and hypothesis testing, one- and two-sample t-tests, analysis of variance, two-way analysis of variance, repeated measures analysis of variance, and chi-square. Includes hands-on experience with research scenarios, statistical software, electronic databases, and report writing. Prerequisite: MATH 115														
9. Why is this course being proposed? Introduction to Statistics is a lower-division requirement for Human Development (HD) majors and has been taught by the Psychology Department over the years. The Psychology Department leadership now wants the Human Development Department to offer this course for HD majors so they will no longer be required to do so. Offering the course from within the HD Department will also allow us to specifically orient the course for HD majors, focusing on research topics that are linked to health and human services.														
10. Mode of Instruction* For definitions of the Course Classification Numbers: http://www.csusm.edu/academic_programs/curriculumscheduling/catalogcurricula/DOCUMENTS/Curricular_Forms_Tab/Instructional%20Mode%20Conventions.pdf														
	<table border="1"> <thead> <tr> <th>Type of Instruction</th> <th>Number of Credit Units</th> <th>Instructional Mode (Course Classification Number)</th> </tr> </thead> <tbody> <tr> <td>Lecture</td> <td>3</td> <td>C2</td> </tr> <tr> <td>Activity</td> <td></td> <td></td> </tr> <tr> <td>Lab</td> <td></td> <td></td> </tr> </tbody> </table>	Type of Instruction	Number of Credit Units	Instructional Mode (Course Classification Number)	Lecture	3	C2	Activity			Lab			
Type of Instruction	Number of Credit Units	Instructional Mode (Course Classification Number)												
Lecture	3	C2												
Activity														
Lab														
11. Grading Method:* <input checked="" type="checkbox"/> Normal (N) (Allows Letter Grade +/-, and Credit/No Credit) <input type="checkbox"/> Normal Plus Report-in-Progress (NP) (Allows Letter Grade +/-, Credit/No Credit, and Report-in-Progress) <input type="checkbox"/> Credit/No Credit Only (C) <input type="checkbox"/> Credit/No Credit or Report-in-Progress Only (CP)														
12. If the (NP) or (CP) grading system was selected, please explain the need for this grade option.														

13. Course Requires Consent for Enrollment? Yes No
 Faculty Credential Analyst Dean Program/Department - Director/Chair

14. Course Can be Taken for Credit More than Once? Yes No
 If yes, how many times? (including first offering)

15. Is Course Crosslisted: Yes No
 If yes, indicate which course _____ and check "yes" in item #22 below.

16. Prerequisite(s): Yes No MATH 115

17. Corequisite(s): Yes No

18. Documentation attached:
 Syllabus Detailed Course Outline

19. If this course has been offered as a topic, please enter topic abbreviation, number, and suffix:* n/a

20. How often will this course be offered once established?* once a year

PROGRAM DIRECTOR/CHAIR - COLLEGE CURRICULUM COMMITTEE SECTION:
(Mandatory information – all items in this section must be completed.)

21. Does this course fulfill a requirement for any major (i.e., core course or elective for a major, majors in other departments, minors in other departments)? Yes No
 If yes, please specify:
 The course will be required for all HD majors.

22. Does this course impact other discipline(s)? *(If there is any uncertainty as to whether a particular discipline is affected, check "yes" and obtain signature.)* Yes No
 If yes, obtain signature(s). Any objections should be stated in writing and attached to this form.

Psychology Discipline	<u>see att.</u> Signature	<u>3/11/16</u> Date	_____ Support _____ Oppose
Sociology Discipline	<u>see email</u> Signature	<u>2/11/16</u> Date	<input checked="" type="checkbox"/> Support _____ Oppose
<u>Math</u>			

Rodney Beaulieu Sept. 13, 2016

1. Originator (please print or type name) _____ Date _____
Alicia M. J. Sanchez 2/22/16

2. Program Director/Chair _____ Date _____
[Signature] 2/19/16

3. College Curriculum Committee _____ Date _____
Denise Garcia 2/22/16

4. College Dean (or Designee) _____ Date _____

5. UCC Committee Chair _____ Date _____

6. Vice President for Academic Affairs (or Designee) _____ Date _____

7. President (or Designee) _____ Date _____



* If Originator is uncertain of this entry, please consult with Program/Department Director/Chair.

Psychology Department Response to February 2016 HD proposals (P-2, C, C-2)
March 11, 2016

General Issues:

The Psychology department is, in general, supportive of the efforts by HD to make changes that will allow the HD department to offer more of the coursework for its own major. We have some specific concerns, though, with a few of the proposed new courses. Below, these concerns will be detailed course-by-course, but the overall issue is that five of the proposed courses overlap too much with existing CSUSM courses that will continue to be used by the PSYC and CHAD majors. This will create problems for PSYC, for CHAD, and for HD when students have any involvement with the HD major and the CHAD major, or any involvement with the HD major and the PSYC major or minor. Conflicts may arise when:

- students double-major in PSYC and HD (a problem for both programs)
- students double-major in CHAD and HD (a problem for both programs)
- students major in HD and minor in PSYC (a common pattern; a problem for both programs)
- students switch majors from HD to PSYC (a problem for PSYC, not for HD)
- students switch majors from HD to CHAD (a problem for CHAD, not for HD)
- students switch majors from PSYC to HD (a problem for HD, not for PSYC)
- students switch majors from CHAD to HD (a problem for HD, not for CHAD)

Students in the first five categories above will be required by PSYC and CHAD to take PSYC 220 and PSYC 230, even if they have previously successfully completed HD 220 and HD 230—but the overlap in content is substantial. The same problem arises between PSYC 330/331 and HD 302, and between PSYC 348/349 and HD 303, and between PSYC 356 and HD 304. Students in these situations will have good grounds to claim that the course content of the required PSYC course was covered by an HD course they already completed (or vice versa). The overall problem is that several of the proposed courses are too psychology focused, and not enough reflective of the unique Human Development/Human Services perspective. Courses that have too much overlap with one another can create havoc for students.

Details by course, for the courses that are problematic:

HD 220 Statistics in Human Development (New Course):

The list of topics covered by the new course is virtually identical to that of PSYC 220. The examples used both by the textbook and in the Case Illustration Portfolios shown in the example syllabus for HD 220 may be ones that are particularly relevant to human services research, but the actual theories and procedures taught are identical to those covered in PSYC 220. Every weekly topic/chapter in the HD 220 syllabus is mirrored in the PSYC 220 syllabus. This will create problems when students have taken HD 220 and then are required (by a new major or a second major or a minor) to take PSYC 220 as well.

HD 230 Research Methods in Human Development (New Course):

This new course has significant overlap with PSYC 230, but does include substantial coverage of several topics that are not a focus in PSYC 230; for example, qualitative field research and

Virginia Mann

SOC
re HD 220, 230, 231

Subject: FW: Proposed Courses for Human Development

From: Sharon Elise
Sent: Thursday, February 11, 2016 7:08 AM
To: Rodney Beaulieu
Cc: Miriam Schustack; Denise Garcia; Alice Quioco; Fernando Soriano; Heidi Jones
Subject: Re: Proposed Courses for Human Development

Sociology has no objection to these courses.

Best,

Sharon Elise

Sent from my iPhone

On Feb 10, 2016, at 4:18 PM, Rodney Beaulieu <rbeaulieu@csusm.edu> wrote:

Dear Dr. Schustack and Dr. Elise,

The Human Development Department is proposing several new courses on research methods that will affect your Departments:

- HD 220 Statistics in Human Development
- HD 230 Research Methods in Human Development
- HD 231 Action Research in Human Development

As you will see from the attached C-Forms and syllabi, the courses emphasize human services, a central focus for the Human Development Department. We would like to start running these courses in Fall 2017 and need your feedback to move forward. Please let me know your thoughts at your earliest convenience.

I'm aware that signatures will be required from me (the originator), the Human Development Department Chair (Dr. Alice Quioco), the CEHHS College Curriculum Committee, and the CEHHS Dean (Dr. Janet Powell) or Associate Dean (Dr. Denise Garcia), and these are expected to be secured soon. For now, I want to bring these proposed courses to your attention for feedback. I hope we can have your support to move forward. Please let me know if you have questions or concerns.

Thanks for you attention.

Rodney Beaulieu

Rodney Beaulieu, Ph.D.

Human Development Department | California State University San Marcos
333 S. Twin Oaks Valley Road San Marcos, CA 92096-0001
Office: University Hall 302 | 760.750.8251 | http://www.csusm.edu/human_development/

Virginia Mann

email to Math re HD 220

From: Alice Quioco
Sent: Thursday, February 25, 2016 7:10 PM
To: Wayne Aitken
Cc: Virginia Mann
Subject: HD 220 new course proposal review
Attachments: HD 220 Syllabus 2- 11-16.docx; HD 220 2- 11-16.docx

Dear Wayne.

Please find attached a C form and syllabus to create HD 220, a new statistics course for HD majors. There is a Math 115 prerequisite. We are not attempting to propose this as B4 option. Our students historically took Psyc 220 and we would like to focus their studies on human services.

This proposal is at UCC and awaits your review. Thank you for your consideration.

Alice

*Alice M.L. Quioco, Ed.D., Chair
Human Development
Professor Emerita, Language and Literacy
College of Education, Health and Human Services
California State University San Marcos
Office: Uh 301
Email: aquioco@csusm.edu
Phone: 760-750-4035*

*Okamae uahala, uahala ia (Ancient Hawaiian).
Leave the past where it is. Be in the present and be at peace.*

CALIFORNIA STATE UNIVERSITY SAN MARCOS
HD 220: Statistics in Human Development

COURSE SYLLABUS

TERM: FALL 2016 CRN: XXXXX

MEETING DAY/TIME:

MEETING LOCATION: (MUST BE CLASSROOM WITH SPSS ACCESS)

PROFESSOR: TBD

OFFICE HOURS: TBD

CONTACT INFORMATION: (EMAIL AND PHONE)

COURSE DESCRIPTION

Focus on statistical analysis and application in health and human services, including quantitative research methods, frequency distributions and graphs, relative measures and normative distribution, correlation and regression, sampling and hypothesis testing, one- and two-sample t-tests, analysis of variance, two-way analysis of variance, repeated measures analysis of variance, and chi-square. Includes hands-on experience with research scenarios, statistical software, electronic databases, and report writing.

PREREQUISITE: MATH 115

MODE OF INSTRUCTION, ATTENDANCE AND CREDIT UNITS:

This course is conducted face-to-face and attendance is required. Weekly lectures are designed to familiarize students with statistical concepts, following the topics from the textbook and are indicated below and on Cougar Courses. During the classroom session, the instructor will illustrate concepts with a PowerPoint presentation, then students will work on case illustrations to build their learning and produce a portfolio. Our class will meet in a computer lab where students can apply their learning, manipulate data, and print materials for their portfolio. Please watch for updated instructions on Cougar Courses for topics, assignments and due dates. Students are expected to spend a minimum of 6 hours outside the classroom to read the textbook chapters and complete portfolio assignments.

PROGRAM STUDENT LEARNING OUTCOMES

The Human Development (HD) degree has 5 Programmatic Student Learning Outcomes (PSLOs), identified at: https://www.csusm.edu/human_development/learning/index.html. This course contributes to PSLO #4: Demonstrate understanding of research methods commonly used in human development scholarship and how to design, conduct, and present an original research project.

COURSE STUDENT LEARNING OUTCOMES

California State University specifies 15 expected learning outcomes for Introduction to Statistics in the Social and Behavioral Sciences. At the successful completion of this course, students will be able to:

- CSLO1 Distinguish among different scales of measurement and their implications.
- CSLO2 Interpret data displayed in tables and graphically.
- CSLO3 Correctly apply the following concepts from sets and probability to solve simple problems: Venn diagrams, sample spaces, tree diagrams, samples spaces, probability distributions, complementary events, mutually exclusive events, and the addition rule.
- CSLO4 Determine measures of central tendency and variation for a given data set.

- CSLO5 Discuss the standard methods of obtaining data and enunciate the advantages and disadvantages of each.
- CSLO6 Calculate the mean and variance of a discrete distribution.
- CSLO7 Calculate probabilities using normal and Student's t distributions.
- CSLO8 Explain the difference between sample and population distributions and the role played by the central limit theorem.
- CSLO9 Construct and interpret confidence intervals.
- CSLO10 Interpret levels of statistical significance including p-values.
- CSLO11 Interpret the output of a computer-based statistical analysis.
- CSLO12 Explain the basic concept of hypothesis testing including Type I and II errors.
- CSLO13 Formulate a hypothesis test (i.e., choose the forms of null and alternative hypotheses) involving samples from two populations.
- CSLO14 Select the appropriate technique for testing a hypothesis and interpret the result
- CSLO15 Use simple regression analysis for estimation, inference, and interpret the associated statistics.
- CSLO16 Analyze case illustrations, determine appropriate SPSS operation and print results.
- CSLO17 Describe statistical concepts and findings in a narrative report, conforming to APA writing guidelines.

READINGS & CLASS MATERIALS:

1. *Compassionate Statistics: Applied Quantitative Analysis for Social Services* by Vincent E. Faherty, University of Southern Maine. Sage Publications. ISBN: 9781412939829
2. SPSS (available for free via [Cougar Courses](#)). In preparation for this course, please see Top 10 Tips for Beginners in SPSS, [Part 1](#) and [Part 2](#).
3. Calculator - A simple calculator that adds, subtracts, divides, multiplies, and square roots is useful but not required.
4. American Psychological Association. (2009). [Publication Manual of the American Psychological Association](#) (6th ed.). Washington, DC: Author. (optional)
5. Electronic data sets for research scenarios will be provided on Cougar Courses for your convenience.

COURSE REQUIREMENTS AND GRADING SYSTEM (3 CASE ILLUSTRATION PORTFOLIOS AND A FINAL EXAM):

THREE PORTFOLIOS (60% of Final Grade for the Course)

Students will be directed to do weekly readings that correspond to the textbook chapters, and case illustrations will accommodate each chapter (except for Chapters 1 and 8). Students will be expected to complete the end-of-chapter assignments that involve these case illustrations, run appropriate statistical procedures with SPSS, print the findings, and summarize the results in narrative format. A description of each portfolio follows.

Portfolio #1 (20 points)

This portfolio will contain end of chapter assignments associated with Chapters 1-5, including written responses to assigned questions for each chapter and case illustration. Written responses are expected to be a minimum of 2 pages long. This portfolio must also contain printouts for the following case illustrations: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 5.2, and 5.3.

Portfolio #2 (20 points)

This portfolio will contain end of chapter assignments associated with Chapters 6-11, including written responses to assigned questions for each chapter and case illustration. Written responses, including case illustration summaries, are expected to be a minimum of 4 pages long. This portfolio

must also contain printouts for the following case illustrations: 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 4.1, 4.2, 4.3, 5.1, 5.2, and 5.3, 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 9.1, 9.2, 9.3, 10.1, 10.2., 10.3, 11.1, 11.2, and 11.3.

Portfolio #3 (20 points)

This portfolio will contain end of chapter assignments associated with Chapters 12-15, including written responses to assigned questions for each chapter and case illustrations. Written responses, including case illustration summaries, are expected to be a minimum of 4 pages long. This portfolio must also contain printouts for the following case illustrations: 12.2, 12.2, 12.3, 13.1, 13.2, 13.3, 14.1, 14.2, 14.3, 15.1, 15.2, and 15.3.

FINAL EXAM (40% of the Final Grade for the Course)

During the last week of this course, an in-class final exam will be required. The exam will consist of questions relating to all the chapters from the textbook, requiring students to demonstrate analytic abilities, conduct statistical calculations, and produce appropriate reports. The exam can be completed with SPSS or by hand with a calculator.

CREDIT HOUR POLICY

According to the "Study Time Required Outside of Class Per University" policy, you are expected to devote 2 hours of study outside of class for every unit of class. This is a 3 unit course, so you are expected to devote a minimum of 6 hours of study time per week outside the classroom. This class will meet the University Credit Hour Policy.

WRITING REQUIREMENT

In accordance with the University's "All-University Writing Requirement" students will be required to have a writing component for the class, which is to meet or surpass the minimum of 10 pages or 2,500 word requirement. Two pages will be met by written responses to the end-of-chapter questions and narrative summaries associated with Portfolio #1, 4 pages will be met by written responses to the end-of-chapter questions and narrative summaries associated with Portfolio #2, and 4 pages will met by written responses to the end-of-chapter questions and narrative summaries associated with Portfolio #3.

GRADING SYSTEM (BASED ON THE ACCUMULATED OF POINTS):

A	93-100%	A-	90-92%	B+	88-89%	B	83-87%
B-	80-82%	C+	78-79%	C	73-77%	C-	70-72%
D+	68-69%	D	63-67%	D-	60-62%	F	59% or Less

BEING SUCCESSFUL IN THIS COURSE

Please read the assigned chapters prior to meeting for the lectures, and after each chapter, please complete the end-of-chapter questions and case illustrations, and compile your work (responses to questions, SPSS printouts of case illustrations, and summary reports) in a portfolio. Attending each class is recommended because complex statistical concepts will be presented in lecture format along with case illustrations, and support will be provided for hands-on SPSS case illustrations. Please allow 6 hours of weekly time for reading the chapters, completing end-of-chapter questions and case illustrations, processing electronic data sets, and writing narrative summaries. Please note the due dates for each academic component on the schedule below. Late or missing assignments will result in no points ("0") for each.

EXPECTED BEHAVIOR

Please feel free to use your own educational technology. Do not take photos or recordings without written informed consent. Respect others, promote a safe environment, and support your colleagues.

GETTING HELP

For technical assistance with technology, please direct questions to helpdesk@csusm.edu. Or, drop by the convenient Help Desk in the Library.

ACADEMIC HONESTY AND INTEGRITY

Please adhere to standards of academic honesty and integrity as outlined in the Student Academic Honesty Policy. All written work and oral presentation assignments must be original work. All ideas/materials that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated with quotation marks. Students are responsible for honest completion of their work including examinations. The instructor reserves the right to discipline any student for academic dishonesty in accordance with the general rules and regulations of the university, including lowering grades and/or assigning a failing grade for an exam, assignment, or the class as a whole. Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

STUDENTS WITH DISABILITIES

Students with disabilities who require reasonable accommodations must be approved for services by the Office of Disabled Student Services (DSS). DSS is located in Craven Hall 4300, phone (760) 750-4905, TTY (760) 750-4909. For additional information, see the CSUSM DSS Student Handbook at <http://www.csusm.edu/dss/handbooks/>. Students authorized by DDS to receive accommodations or who have disability related questions should email me as soon as possible.

COURSE SCHEDULE, TOPICS, ACTIVITIES, AND ASSIGNMENT DUE DATES

TOPICS AND DUE DATES ARE SUBJECT TO CHANGE. PLEASE SEE COUGAR COURSES FOR UPDATES

Week	Topic: Read the Chapter(s) before class
1	Chapter 1: Introduction, Overview, and Nondefinitions Assignment: End-of-Chapter Questions
2	Chapter 2: Levels of Data Assignment: End-of-Chapter Questions and Case Illustrations 2.1, 2.2, and 2.3 SPSS Activities Involved: Data Set #1: Nominal, Ordinal-, and Scale-Level Data
3	Chapter 3: Presenting Data in Tables Assignment: End-of-Chapter Questions and Case Illustrations 3.1, 3.2, and 3.3 SPSS Activities Involved: Data Set #1: Tables and Data
4	Chapter 4: Presenting Data in Figures Assignment: End-of-Chapter Questions and Case Illustrations 4.1, 4.2, and 4.3 SPSS Activities involved: Data Set #1: Data and Figures

5	<p>Chapter 5: The 3Ms: Mean, Median, and Mode</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 5.1, 5.2, and 5.3</p> <p>SPSS Activities involved: Data Set #1: Mean, Median, and Mode</p>
6	<p>Chapter 6: Standard Deviation, Ranges, and Quartiles</p> <p>Assignment: End-of-Chapter Questions Case Illustrations 6.1, 6.2, and 6.3</p> <p>SPSS Activities involved: Data Set #1: Measures of Variability</p> <p>Portfolio #1 is Due (Chapters 1 - 5)</p>
7	<p>Chapter 7: Other Descriptive Statistics</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 7.1, 7.2, and 7.3</p> <p>SPSS Activities involved: Data Set #1: Other Descriptive Statistics</p>
8	<p>Chapter 8: Probability and Statistical Significance</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 8.1, 8.2, 8.3</p> <p>SPSS Activities involved: Data Set #1: Probability, Statistical Significance, and Hypothesis Testing</p>
9	<p>Chapter 9: Chi-Square Test of Independence</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 9.1, 9.2, and 9.3</p> <p>SPSS Activities involved: Data Set #2: The Chi-Square Test</p>
10	<p>Chapter 10: Correlation, Scattergrams</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 10.1, 10.2, and 10.3</p> <p>SPSS Activities involved: Data Set #3: Scattergrams</p>
11	<p>Chapter 11: Correlation: Spearman's rho and Pearson's r</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 11.1, 11.2, and 11.3</p> <p>SPSS Activities involved: Data Set #3: Correlations for Inferential Purposes</p>
12	<p>Chapter 12: t-test for Paired Samples</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 12.1, 12.2, and 12.3</p> <p>SPSS Activities involved: Data Set #4: Paired Samples t-Test</p> <p>Portfolio #2 is Due (Chapters 6 -11)</p>
13	<p>Chapter 13: t-test for Independent Samples</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 13.1, 13.2, and 13.3</p> <p>SPSS Activities involved: Data Set #5: Independent Samples t-Test</p>
14	<p>Chapter 14: One-Way Analysis of Variance (ANOCA) and a Post Hoc Test</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 14.1, 14.2, and 14.3</p> <p>SPSS Activities involved: Data Set #6: One-Way ANOVA and Post Hoc Tests</p>
15	<p>Chapter 15: Nonparametric Alternatives to Common Parametric Tests</p> <p>Assignment: End-of-Chapter Questions and Case Illustrations 15.1, 15.2, and 15.3</p> <p>SPSS Activities involved: Data Set #6: Alternative Nonparametric Tests</p>
16	<p>Final Exam (Chapters 1 - 15)</p>

Portfolio #3 is Due (Chapters 12-15)

UPDATES AND SYLLABUS CHANGES

Please note that the syllabus is subject to change. Please refer to Cougar Courses for actual weekly topics, assignments and due dates.

RUBRIC FOR ASSESSING PORTFOLIOS

1. Distinguish among different scales of measurement and their implications.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

2. Interpret data displayed in tables and graphically:

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

3. Correctly apply the following concepts from sets and probability to solve simple problems: Venn diagrams, sample spaces, tree diagrams, samples spaces, probability distributions, complementary events, mutually exclusive events, and the addition rule.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

4. Determine measures of central tendency and variation for a given data set.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

5. Discuss the standard methods of obtaining data and enunciate the advantages and disadvantages of each.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

6. Calculate the mean and variance of a discrete distribution.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

7. Calculate probabilities using normal and Student's t distributions.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

8. Explain the difference between sample and population distributions and the role played by the central limit theorem.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

9. Construct and interpret confidence intervals.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

10. Interpret levels of statistical significance including p-values.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

11. Interpret the output of a computer-based statistical analysis.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

12. Explain the basic concept of hypothesis testing including Type I and II errors.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

13. Formulate a hypothesis test (i.e., choose the forms of null and alternative hypotheses) involving samples from two populations.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

14. Select the appropriate technique for testing a hypothesis and interpret the result.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

15. Use simple regression analysis for estimation, inference, and interpret the associated statistics.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

16. Analyze case illustrations, determine appropriate SPSS operation and print results.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio

17. Describe statistical concepts and findings in a narrative report, conforming to APA writing guidelines.

- Excellent (6 points)
- Satisfactory (3 points)
- Unsatisfactory (0 points)
- Not Applicable for this Portfolio