

## **COUN / PSYC 5300-120 BEHAVIORAL STATISTICS (CRN 10308/10309)**

Spring 2020

Texas A&M University - Central Texas

### **COURSE DATES, MODALITY, AND LOCATION**

This course is a 100% online course and uses the [TAMUCT Canvas Learning Management System](https://tamuct.instructure.com) [https://tamuct.instructure.com]. The course is offered in the spring 2019 16-week semester, and the course date range spans January 13 through May 8, 2019 (inclusive). All course deadlines are based on the time zone of the physical location of the university, which is in the Central Standard Time (CST) zone, but Central Daylight Time (CDT) is observed in the summer.

### **INSTRUCTOR AND CONTACT INFORMATION**

#### **Instructor**

Dr. Andria Schwegler

#### **Office**

WebEx, linked on left menu bar in the course

#### **Phone**

VoIP via WebEx; schedule an appointment to receive connection information

#### **Email**

Preferred email is through Canvas "Inbox" for course-related information. If correspondence is not related to the course, [contact the professor via TAMUCT email](mailto:schwegler@tamuct.edu) (schwegler@tamuct.edu).

#### **Office Hours**

The professor is available to meet with students via WebEx by appointment. Students should email the professor to schedule a time. Appointment times are very flexible, and frequent interaction with the instructor is highly encouraged.

#### **Student-Instructor Interaction**

The professor will logon to the course in Canvas every week day (Monday through Friday) and will reply to email within two business days.

If students have course-related questions, these should be posted in Study Hall (discussion board) instead of sending the professor an email/message. When posted in Study Hall, a classmate may be able to reply to questions faster than the professor, and all students will have access to the information.

Students are expected to logon to the course in Canvas daily to review and post assignments, read discussion boards, review Study Hall, check messages, etc.

The professor will provide feedback on assignments by marking grading rubrics and/or posting comments as needed in the Submission box or on attached documents. Students should review all assignments in the Grade Center when grades are posted to examine and apply the feedback on subsequent assignments.

Students can message the professor to schedule an appointment to talk via video-teleconference when needed.

## **WARRIOR SHIELD**

### **Emergency Warning System for Texas A&M University-Central Texas**

Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](https://portal.publicsafetycloud.net/Account/Login) [https://portal.publicsafetycloud.net/Account/Login] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

## **COURSE INFORMATION**

### **Course Overview and Description**

Review of descriptive statistics with emphasis on inferential statistics. Learn correlation, one-way and two-way analysis of variance, regression analysis and experimental design. Use of computer software with emphasis on experience with SPSS. Prerequisite: undergraduate statistics recommended.

### **Student Learning Outcomes**

#### ***Course Learning Outcomes and Assessments***

1. *Demonstrate comprehension and application of factual knowledge (terminology, classifications, methods, trends).* Students will calculate measures of central tendency and variability, z scores, correlation coefficients, regression equations, analyses of variance and chi-square both by hand and using standard office software and SPSS to solve problems. Students will demonstrate their ability to define terms and compute functions on Homework Problems, SPSS assignments, and Exams.
2. *Demonstrate comprehension and application of factual knowledge of fundamental principles, generalizations, or theories regarding basic statistics.* Students will read, discuss, and write about theoretical concepts underlying descriptive and inferential statistics, including frequency distributions and graphing, empirical distributions, theoretical distributions (including the normal distribution), sampling distributions, the Central Limit Theorem, and the logic underlying confidence intervals and hypothesis testing. Students will demonstrate their ability to discuss and write about selected concepts on the Concept Application Discussions.
3. *Integrate course material to improve thinking, problem solving, and decisions.* Students will identify the variables under study, state research hypotheses, choose the appropriate descriptive methods, identify the independent and dependent variables, locate the number of samples under study, locate the number of scores per participant, select the

appropriate inferential or correlational tests, draw statistical conclusions from the numerical results of their analyses, and present them in APA style. Examples and problems will be applied to research in psychology. Students will demonstrate these skills on Homework Problems, SPSS assignments, APA style Results sections, Research Article Analyses, and Exams.

4. *Analyze and critically evaluate ideas, arguments, and points of view.* Students will respond to others' writing (including that of peers and experts in the field) on statistical concepts and substantiate their comments with course materials. Students will derive null and alternative research hypotheses that are supported by information provided for research scenarios. Students will demonstrate their ability to critically evaluate ideas on the Concept Application Discussion replies (weekly) and Research Article Analyses.
5. *Demonstrate skill in expressing oneself in writing.* Using appropriate APA style, students will write Concept Application Discussions each week with replies, Research Article Analyses, and APA style Results sections.

### ***Standards for Clinical Mental Health Counseling***

In accordance with CACREP best practices standards for all counselors-in-training development, the following areas will be promoted in this course:

Table 1 CACREP Standards

<b>CACREP Standard Common Core for All Students:</b>	<b>Activity</b>	<b>SLOs</b>
1. Understands the importance of research in advancing the counseling profession, including how to critique research to inform counseling practice (IIF8a);	Homework Problems, SPSS Assignments, Exams	SLO4
2. Understands qualitative, quantitative, and mixed research methods( IIF8f);	Concept Application Discussions	SLO2
3. Understands designs used in research and program evaluation (IIF8g);	Homework Problems, SPSS Assignments, APA Style Results Sections, Research Article Analysis, Exams	SLO2

CACREP Standard Common Core for All Students:	Activity	SLOs
4. Use of statistical methods used in conducting research and program evaluation (IIF8h);	Concept Application Discussions, Article Analysis, Homework Problems	SLO1
5. Basic concepts of analysis and use of data in counseling (IIF8i);	Homework Problems, SPSS Assignments, Exams	SLO1
6. Statistical concepts, including scales of measurement, central tendency, variability, distributions, and correlations;	Homework Problems, SPSS Assignments, APA Style Results Sections, Research Article Analysis, Exams	SLO2
7. Reliability and validity in the use of assessments.	Concept Application Discussions, Article Analysis, Homework Problems	SLO2

**Required Reading and Textbook(s)**

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7<sup>th</sup> ed.). Washington, DC: Author. (ISBN: 978-1-4338-3216-1)

Gravetter, F. J., & Wallnau, L. B. (2017). *Statistics for the behavioral sciences* (10<sup>th</sup> ed.) Belmont, CA: Wadsworth. (ISBN: 978-1305504912)

Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: Analyzing and understanding the data* (8<sup>th</sup> ed). Boston: Pearson. (ISBN: 978-0-134319889)

**Required Electronic Resources**

MindTap. MindTap is an online instructional and homework delivery tool for the Gravetter and Wallnau textbook. Students can purchase MindTap access, which comes with an e-book. **The instructions to register for MindTap are located in the course materials in Module 1 on the “Modules” tab in Canvas.**

IBM Statistical Package for the Social Sciences (SPSS) Standard GradPack **v. 24**. This computing software is widely used to compute statistical analyses and is available for

students to use on University computers **free** of charge. If students live far from the University or do not want to use the computer lab resources, students can [rent a subscription to SPSS](#) for their personal computers at home. Students can purchase a 6-month or 12-month lease for the program via one of many online vendors. **Be sure to select the STANDARD GradPack not the BASE GradPack.** See the IBM website for a description of the product and a list of vendors (<http://www-03.ibm.com/software/products/en/spss-stats-gradpack>).

*A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer (Sec. 51.9705).*

## **COURSE REQUIREMENTS**

### **Course Sequence of Instruction**

This course is organized into weekly learning modules (on the “Modules” link on the left menu bar). Each module requires students to perform the following actions. Complete these actions in the following order for each module.

- 1) When first logging on to Canvas, read the module learning objectives for each module before completing any course assignments.**
  - a. The learning objectives for each module should serve to direct students’ attention to important course content and describe the alignment between learning outcomes, assignments, and assessments of the learning outcomes.
- 2) Participate in Study Hall by posting and responding to questions at any time as you study** (on the “Discussions” tab on the left menu bar).
  - a. In the spirit of student-led study groups, the professor created a virtual space for informal, student-to-student (and student-to-professor) communication concerning matters related to this class. All questions related to the academic content of this class should be asked in Study Hall. Students are expected to respond to their classmates’ questions/comments with helpful explanations. Students who can answer a posted question or provide assistance should not wait for the professor to respond. Student led discussion of academic content is expected in Study Hall just as it is in the Concept Application Discussion forums; however, the professor will monitor Study Hall and will respond to any post that is not adequately addressed by peers (e.g., posts that are unanswered, posts that include inaccurate information, etc.). While students should provide accurate information in their posts, Study Hall posts are ungraded and present a low threat way of interacting with classmates to help each other learn.
  - b. Study Hall is designed to bring students together for mutual support and problem solving in a low threat environment. In addition, this online environment allows your personal information to remain private; you do not have to share personal emails or phone numbers with classmates.

- c. To use Study Hall effectively, students should check the forum each time they log on to the class and perform the following actions:
    - i. Ask for explanations by creating a new thread in the Study Hall forum. It is acceptable to ask for assistance on any topic in the course **except specific items that are graded** (e.g., questions assigned for homework and questions on exams).
      - 1. Please note: There are NO graded group projects in this class. All graded assignments must be completed individually with no assistance from classmates, tutors, or other people. **While learning is not a solo endeavor, assessment is!** If you cannot understand this distinction or if you are unsure what acts constitute academic dishonesty, ask the professor before engaging in the behavior.
    - ii. Offer explanations to other students by replying to a question thread.
    - iii. Read old Q&A threads as a study tool and reference. Peer explanations are another source of examples and clarifications in addition to your textbook, the videos, and your communications with the professor.
    - iv. Network! Don't lose sight of the fact that your classmates are (or will soon be) your colleagues in your profession. Establish professional contacts now that you can rely upon later.
  - d. Students should know that Study Hall is a public forum, and all students in the course can access and read all postings; therefore, **private information should not be discussed in Study Hall** (e.g., personal problems or events, confidential information including grades and disability accommodations, and other issues that should be kept between the student and professor only). If students have a personal or confidential topic to discuss, the student should send an email addressed to the professor only via the Inbox tool.
- 3) **Use additional online resources at any time as you study each chapter.**
- a. The number of websites offering help with statistics is staggering. So, instead of overwhelming you with an exhaustive list, I have suggested a couple of links in addition to MindTap to aid you in completing this course. The links are provided on the "Modules" tab in "Course Resources."
- 4) **Read/work through the assigned chapter(s) in the Gravetter & Wallnau textbook.** This text provides the primary content for the course. It introduces students to specific techniques and theory in statistics. Follow the steps below when beginning each chapter. (For more information on this technique, search "SQ3R" on the web.)
- a. **Survey** – Before reading, spend 2 minutes flipping through the pages of the chapter to get a general idea of the chapter content. During this time, read only titles, headings, subheadings, and captions for pictures, tables, graphs, etc. for the entire chapter.
  - b. **Question** – Next, go back to the beginning of the chapter and flip through it again, turning the title, headings, and subheadings into questions. Guess a plausible answer to each question. Finally, review the section at the beginning of

each chapter and assess the adequacy of your background knowledge. Review previous chapters before reading the new chapter, if needed.

- c. **Read** – Go back to the beginning of the chapter and start reading. Slow down your speed for difficult passages, reread captions for graphs and tables as you encounter them, reread sections that are unclear, read only a section at a time, and work through each calculation as it is presented. If you do not understand a given calculation by “mentally” working through it, take the time to “physically” (with paper and pencil) work through it. Stop reading at each “Learning Check” to recite (see next step).
  - d. **Recite** – At the end of each section, stop reading and go back to take notes from the text, writing them in your own words. Do not copy notes verbatim from the text. Use the publisher provided PowerPoint slides to organize the notes you take from each chapter. Next, work the problems presented at each “Learning Check” in the text. Completing these checks will identify the material you may not fully understand, so you can immediately review it. You will be unable to understand later concepts without first understanding initial concepts. **The material in this class is cumulative.** You must understand each calculation and its rationale as you encounter it because it will form the foundation for more sophisticated techniques later.
  - e. **Review** – Use the odd-numbered “Problems” at the end of each chapter to review the material for that chapter. Work the odd-numbered problems for each chapter and check your work. Answers are provided for the odd-numbered problems in the back of the text. Similar problem sets will be assigned as Homework through MindTap, which also includes practice problems with solutions.
- 5) **Use the PowerPoint (PPT) slides for each chapter to take notes from the text on them.**
- a. See the ‘Recite’ section of the SQ3R method above for taking notes as you read the text. The use of these slides is optional. Some students prefer to take notes on the slides; others prefer to use only the text. Use the technique that works best for you.
- 6) **Watch the instructional video(s) that accompany each chapter as you study the text.**
- a. The professor filmed short video segments to demonstrate examples of the analyses presented in the text. The intent of the videos is NOT to replace the text but to walk students through the process of setting up a problem and finding its solution to supplement the ready-made solutions presented in the textbook.
  - b. Many students find it puzzling that the completed problems in the text seem so easy and obvious while beginning a problem on a blank piece of paper is so difficult and confusing. The videos will guide students from a blank page to a completed problem with the goal of bringing the problem ‘to life.’
  - c. Students can watch each video and work the problems with the professor just as they would in a face-to-face course. But, unique to an online course, students have the ability to pause the video to finish working calculations at their own pace, and students can repeat segments of the video as many times as needed.

**7) Make an appointment for virtual office hours (synchronous communication) or email the professor (asynchronous communication) for assistance when needed.**

- a. The professor will log on to the class daily on weekdays (Monday through Friday), unless otherwise announced. The professor will respond as quickly as possible to emails, usually within two business days. All course-related email should be conducted through the “Inbox” tool linked on the left menu bar.
- b. In addition, the professor will hold synchronous, online office hours as requested by appointment using WebEx. During these office hours, students may log on and interact with the professor in real time. Students will need a headset with microphone (or speakers and a microphone) to use this option on their computers, or students can dial into the session on their phones. If using a computer, students should use a headset if possible when speaking in the environment to reduce echo and feedback, and students should use a wired (not wireless) internet connection. WebEx is linked on the left menu bar in class.

**8) Write the Concept Application Discussion for each module.**

- a. Concepts that are critical to grasp or are typically challenging for students are identified in the Concept Application Discussion prompts. Students are to select any concept of their choice and write an explanatory paragraph about it. Each paragraph should be between 8-12 sentences, should be well-organized, and should fully explain the concept.
- b. Classmates will read and discuss concept explanations in the discussion forums in class after initial posts are submitted. Students should write and review those concepts they find most challenging to get the most learning benefit from the assignment.
- c. Initial posts are due by the end of the day on Thursdays (i.e., 11:59pm CST) prior to the close each Module. Replies to initial posts are due with the remaining assignments on Mondays by 8:00am CST.

**9) Complete the Homework problems for each chapter.**

- a. Only after thoroughly reading the text, working the “Learning Check” problems in the text, and reviewing the problems at the end of the chapter, students should complete the problem sets assigned in MindTap. This site delivers practice problems with explanations (optional) and assigned homework problems (required). For your homework problems, MindTap provides grading feedback and explanations for each problem at the deadline for the assignment. Immediate feedback is available for the practice problems in MindTap.

**10) Complete the SPSS Assignments from the G&S textbook for each module.**

- a. This text provides a thorough explanation for using the computer software Statistical Package for the Social Sciences (SPSS) to perform statistical analyses of data using a computer.
- b. Students should not only read this text, but students should also follow along with each step using the SPSS program itself. Students will be unable to fully understand how to use SPSS by merely reading the textbook. Students should work with the SPSS program on a computer, using the textbook as a reference.



- c. To practice the techniques in the Green and Salkind textbook, students will submit labeled SPSS output of assigned statistical analyses. Students will use SPSS to perform virtually every statistical procedure we learn to compute by hand in the course. The hand computations reveal what the SPSS program does “behind the scenes.” In future school work and professions, students will be more likely to use computer programs such as SPSS to perform statistical analyses; however, numbers on a page are meaningless unless students understand what the data means and know how to interpret it. Therefore, both hand calculations and software calculations of data are integrated in this course.

**11) Write the APA Style Results Section for selected modules.**

- a. After the reading, discussion, practice, and homework assignments are complete, students should have a solid understanding of chapter content. The next step in the learning process is to interpret the results of statistical analyses in sentence form. The APA style Results sections for a completed analysis involve explanation of statistical analyses and outcomes that are appropriate for inclusion in a manuscript submitted for publication (e.g., thesis or research article). Students may reference published works for examples and use the APA style instructions provided in the G&S, G&W, and APA texts.
- b. Students should create a folder on their computers to save and chronologically order all of their completed APA Style Results Sections as they may be very valuable to students in subsequent coursework.
- c. All Results sections must be completed independently and written in a student’s own words. Any evidence of collaboration or plagiarism will result in no credit for the assignment. The length of each assignment will vary based on the analysis.
- d. All Results sections should be written in APA style and submitted through Canvas.

**12) Write the Research Article Analysis for selected modules.**

- a. As the semester progresses, students will research, read, and summarize demonstrations of selected statistical tests in peer-reviewed, published research articles. Students will use the library databases to research and locate four empirical reports to summarize. The purpose of the assignment is to provide examples of how statistical tests are used to inform decisions in research contexts in students’ fields of interest.
- b. The analyses will be submitted as an assignment in Canvas.

**13) Comprehensively review and take the Exams.**

- a. The final step of study will be completing five timed exams and a comprehensive final exam. Once an exam is started, it must be completed in the same session. Each exam will be comprised of questions that span several chapters. The material in this course is cumulative, and as such, all course content covered prior to an exam is testable material. On the Course Calendar, each exam is labeled with the chapters that will be the primary focus of the exam. However, students should realize that calculations learned in earlier chapters will also

appear on exams though the specific chapter where the calculation was first introduced may not be listed.

- b. **When completing exams, students should use a hardwired internet connection, NOT a wireless connection.**
- c. Links to Exams are available in Canvas on the “Modules” tab.

### Course Assignments

**Concept Application Discussions (14.0% of Overall Course Grade) (10 points each, 14 assignments due).** Active online participation in diverse learning activities that are delivered throughout the learning process is expected in this course. One of these activities is the class-wide, concept discussion forums. Students are expected to write a brief (8-12 sentences) explanation of one of the critical concept prompts provided by the professor in the **student’s own words** (quoting from the textbook will not receive credit), and submit the explanation of the concept each week in the corresponding module’s discussion forum in Canvas. The professor identified concepts in each module that are critical for students to understand. Writing, reading others’ posts, and discussing these concepts will help students recognize and clarify their understanding of concepts as they progress through the course. The following rubric will be used to grade discussion forum participation and concept explanations.

#### Post Content:

0 = no post; or post is not explicitly related to an assigned prompt

1 = concept is stated in post; relevant terms are not defined; concept is not explained

2 = concept is stated in post and relevant terms are defined but a clear explanation of the concept is missing; or concept is stated in post and a clear explanation of the concept is provided but relevant terms are not defined

3 = concept is stated in post; relevant terms are defined; a clear explanation of the concept is provided

4 = concept is stated in post; relevant terms are defined; a clear explanation of the concept is provided; and illustrative examples or applications of the concept are provided

#### Reply Content (two required):

0 = no reply; reply merely states agreement with post content or indicates “good job;” reply contains inaccurate information

1 = reply merely restates content of the original post but adds no new information

2 = reply adds new information and extends the consideration of the concept beyond what has already been posted

#### Writing Standards (Post and Replies):

0 = no post; several writing and usage errors interfere with comprehension of the explanation

1 = some grammatical errors distract the reader and slow comprehension of the

explanation

2 = few grammatical errors if any; errors do not interfere with comprehension or distract reader

**Chapter Homework Problems (17.0% of Overall Course Grade) (10 points each, 17 assignments due).** Problem sets are assigned as homework in MindTap. All homework assignments must be completed independently. To complete homework, students may use textbooks, notes, calculators, and internet resources, but students may not use other people (i.e., classmates, friends, tutors) as resources to complete graded assignments.

**SPSS Assignments (15.0% of Overall Course Grade) (15 points each, 10 assignments due).** Each week students will perform analyses using SPSS software and will submit 10 assignments through the course of the semester. The initial assignments for SPSS (Units 1 through 4) are intended to allow students to gain familiarity with the program. Then, beginning with Unit 5, students will begin to submit graded assignments. Credit will be awarded only for properly labeled assignments as indicated on each set of instructions. Without labels, there is no evidence that students have examined the output, and there is no evidence that students can interpret the output. To meet the goals of this assignment, it is not sufficient that students are able to generate SPSS output. Thus, students who submit SPSS output that is not labeled as specified in each assignment will not receive credit for their submissions. Labels to include on all SPSS output are explicitly stated in each assignment and vary depending on the type of analysis conducted. Points awarded for each label are stated on each assignment.

**APA Style Results Sections (12.5% of Overall Course Grade) (25 points each, 5 assignments due).** For selected inferential analyses performed in the course, students will write APA style Results sections that state statistical conclusions from numerical results of each analysis in sentence format. The Results sections will be graded using the following grading rubric.

Statement of Variables in Test (Independent and Dependent)

0 1 2 3

Statement of Statistical Test

0 1 2 3

Statement of Alpha Level Used for Statistical Test

0 1 2

Report of Descriptive Statistics for Groups in Test ( $n$ ,  $M$ ,  $SD$  for all groups)

0 1 2 3

APA Formatting of Descriptive Statistics

0 1 2

Report of Statistical Test Results

0 1 2

APA Formatting of Statistical Test Results

0 1 2

Narrative Interpretation of Test Results	0	1	2	3	4
APA Formatting – General	0	1	2		
Grammar and Expression	0	1	2		

**Research Article Analysis (10.0% of Overall Course Grade) (25 points each, 4 assignments due).** After researching and identifying a demonstration of the specified statistical test in a published research article, students will summarize the major sections of the article according to the format provided in an essay exercise. Students should use the grading rubric provided with the assignment to guide their writing.

**Examinations (22.5% of Overall Course Grade) (45 points each, 5 assignments due).** Exams that include theoretical, definitional, and computational problems will be given at regular intervals during the semester (see Course Calendar). These tests will cover content from the assigned chapters and activities listed in the Course Calendar. Material in this class is cumulative so exams will include the use of information from previous chapters in addition to those stated for the exam. **Students should use a hard wired internet connection when taking all exams.** Wireless connections “blink,” and when they do, students will be logged out of the exam and not permitted to resume. If using a laptop, turn off the wireless switch. Computers should be physically plugged into the internet port on the wall with an internet cable for exams.

**Comprehensive Final Examination (9.0% of Overall Course Grade) (90 points each, 1 assignment due).** A comprehensive final examination that includes all content discussed in the course will be given during final exam week. In addition to a review of course material, the exam will require students to determine the appropriate statistical test for a research question and analysis of a data set to address the research question. Students may use textbooks, notes, and calculators when completing the exam. However, all exams must be completed independently. Direct all questions to the professor of the course.

## Grading Criteria Rubric and Conversion

Table 2 Assignments and Point Values

<u>Assignment</u>	<u>Number Due</u>	<u>Points Each</u>	<u>Points Total</u>	<u>Percentage</u>
Concept Application Discussion	14	10	140	14.0
Chapter Homework Problems	17	10	170	17.0
SPSS Assignments	10	15	150	15.0
APA Style Results Sections	5	25	125	12.5
Research Article Analysis	4	25	100	10.0
Exam 1	1	45	45	4.5
Exam 2	1	45	45	4.5
Exam 3	1	45	45	4.5
Exam 4	1	45	45	4.5
Exam 5	1	45	45	4.5
Comprehensive Final Exam	1	90	<u>90</u>	<u>9.0</u>
			1000	100%

### Posting of Grades

#### **Grading Scale**

Grades are not 'given' in this course; they are earned. Students earn grades by actively utilizing course content to learn the material (i.e., Concept Application Discussions, Homework Problems, and SPSS Assignments) and by demonstrating their grasp of subject-matter content on written assignments (i.e., APA Style Results Sections, Research Article Analysis) and exams. Grades are determined based on the percentage of points earned on each assignment and the assignment's weight toward the overall course grade.

Table 3 Grades

<u>Grade</u>	<u>University Definition</u>	<u>Percentage</u>
A	Excellent	90-100
B	Good	80-89
C	Fair	70-79
D	Not Passing	60-69
F	Failing	59 or below

#### **Grade Posting**

All students' grades will be posted in the Canvas Grade Center after the assignment due date has passed. Grades on Homework Problems will also be available in the MindTap grade book immediately after the assignment's due date has passed. On the SPSS and writing assignments, the professor will begin reading, grading and recording grades on the Monday they are due and will have all grades posted within one week. Students should regularly monitor their grades in the Canvas Grade Center, and *students should not hesitate to ask the professor about any grade*

or concern.

### **Grading Policies**

Students are responsible for meeting the course requirements as scheduled for each module in the course calendar. **Assignments submitted after the due date will not be credited.** Students who are excused from coursework due to medical issues or military training must provide a written excuse documenting the dates of the absence, which must coincide with the work to be made up, provided by physicians, military supervisors, or law enforcement officers.

All assignments must be written in a student's own words. No credit will be awarded for quoted or plagiarized material on any assignment. **Quoting or paraphrasing that closely mirrors the source (textbook or other reference material) will receive no credit even if properly cited. Students must write original sentences conveying the information they have learned to the reader (i.e., paraphrasing) and properly cite the source of the information to receive credit for writing.**

All assignments should be written in proper APA style. Students must follow the APA style guidelines provided in the *Publication Manual* and use online style resources provided by the [American Psychological Association](http://www.apastyle.org) at [www.apastyle.org](http://www.apastyle.org)

## COURSE OUTLINE AND CALENDAR

Table 4 Course Outline and Calendar

Week	Module	Instructional Activities	Assignments Due
January 9 through January 12	Getting Started  (Complete before the semester begins.)	Log on to Canvas and review syllabus Establish library access from home Create a quiet study environment Resolve all computer difficulties Find 2 'back-up' computers w/internet	<b>All assignments are due by 8:00am CST on Mondays except for initial discussion posts which are due by the end of the day on Thursdays (i.e., 11:59pm CST) prior to the close of the Module.</b>
January 13 (12:30am) through January 20 (8:00am)	<b>Module 1:</b> Introduction to Statistics	Read G&W Chapter 1 Complete Homework Problems Ch 1  Read G&W Chapter 2 Complete Homework Problems Ch 2  Read/Work G&S SPSS Unit 1 (Lessons 1 through 4)  Write Application Discussion	Ch 1 Homework Problems  Ch 2 Homework Problems  Application Discussion
January 17 (12:30am) through January 27 (8:00am)	<b>Module 2:</b> Descriptive Statistics	Read G&W Chapter 3 Complete Homework Problems Ch 3  Read G&W Chapter 4 Complete Homework Problems Ch 4  Read/Work G&S SPSS Unit 2 (Lessons 5 through 11)  Write Application Discussion	Ch 3 Homework Problems  Ch 4 Homework Problems  Application Discussion
January 24 (12:30am) through February 3 (8:00am)	<b>Module 3:</b> z-Scores	<b>Take Exam 1 (Chapters 1-4)</b>  Read G&W Chapter 5 Complete Homework Problems Ch 5  Read/Work G&S SPSS Unit 3 (Lessons 12 through 15)  Write Application Discussion	<b>Exam 1 (Chapters 1-4)</b>  Ch 5 Homework Problems  Application Discussion

<b>Week</b>	<b>Module</b>	<b>Instructional Activities</b>	<b>Assignments Due</b>
January 31 (12:30am) through February 10 (8:00am)	<b>Module 4:</b> Probability and Samples	Read G&W Chapter 6 Complete Homework Problems Ch 6  Read G&W Chapter 7 Complete Homework Problems Ch 7  Read/Work G&S SPSS Unit 4 (Lessons 16 through 18)  Write Application Discussion	Ch 6 Homework Problems  Ch 7 Homework Problems  Application Discussion
February 7 (12:30am) through February 17 (8:00am)	<b>Module 5:</b> Hypothesis Testing	Read G&W Chapter 8 Complete Homework Problems Ch 8  Read/Work G&S SPSS Unit 5 (Lessons 19 through 21)  Write Application Discussion  Write Research Article Analysis	Ch 8 Homework Problems  SPSS Frequency Analysis (Lesson 20)  Application Discussion  Article Analysis
February 14 (12:30am) through February 24 (8:00am)	<b>Module 6:</b> Introduction to the $t$ Statistic	<b>Take Exam 2 (Chapters 5-8)</b>  Read G&W Chapter 9 Complete Homework Problems Ch 9  Read/Work G&S SPSS Lessons 21 and 22  Write Application Discussion	<b>Exam 2 (Chapters 5-8)</b>  Ch 9 Homework Problems  SPSS One-Sample $t$ Test (Lesson 22)  Application Discussion
February 21 (12:30am) through March 2 (8:00am)	<b>Module 7:</b> Independent Samples $t$ Test	Read G&W Chapter 10 Complete Homework Problems Ch 10  Read/Work G&S SPSS Lesson 24  Write Application Discussion  Write APA Style Results Section	Ch10 Homework Problem  SPSS Independent $t$ Test (Lesson 24)  Application Discussion  Results Section



<b>Week</b>	<b>Module</b>	<b>Instructional Activities</b>	<b>Assignments Due</b>
February 28 (12:30am) through March 9 (8:00am)	<b>Module 8:</b> Related Samples <i>t</i> Test	Read G&W Chapter 11 Complete Homework Problems Ch 11  Read/Work G&S SPSS Lesson 23  Write Application Discussion  Write APA Style Results Section	Ch 11 Homework Problem  SPSS Related <i>t</i> Test (Lesson 23)  Application Discussion  Results Section
March 9 through March 13	<b>SPRING BREAK</b>		
March 13 (12:30am) through March 23 (8:00am)	<b>Module 9:</b> Introduction to Analysis of Variance (ANOVA)	<b>Take Exam 3 (Chapters 9-11)</b>  Read G&W Chapter 12 Complete Homework Problems Ch 12  Read/Work G&S SPSS Lesson 25  Write Application Discussion	<b>Exam 3 (Chapters 9-11)</b>  Ch12 Homework Problem  SPSS One-Way ANOVA (Lesson 25)  Application Discussion
March 20 (12:30am) through March 30 (8:00am)  Graduation Application for Ceremony Participation Deadline March 27	<b>Module 10:</b> Repeated Measures ANOVA	Read G&W Chapter 13 Complete Homework Problems Ch 13  Read/Work G&S SPSS Lesson 29  Write Application Discussion  Write APA Style Results Section  Write Research Article Analysis	Ch13 Homework Problem  SPSS Repeated ANOVA (Lesson 29)  Application Discussion  Results Section  Article Analysis
March 27 (12:30am) through April 6 (8:00am)	<b>Module 11:</b> Two-Factor ANOVA	Read G&W Chapter 14 Complete Homework Problems Ch 14  Read/Work G&S SPSS Lesson 26  Write Application Discussion  Write APA Style Results Section	Ch14 Homework Problem  SPSS Factorial ANOVA (Lesson 26)  Application Discussion  Results Section

<b>Week</b>	<b>Module</b>	<b>Instructional Activities</b>	<b>Assignments Due</b>
April 3 (12:30am) through April 13 (8:00am)	<b>Module 12:</b> Correlation	<b>Take Exam 4 (Chapters 12-14)</b>  Read G&W Chapter 15 Complete Homework Problems Ch 15  Read/Work G&S SPSS Lesson 31  Write Application Discussion	<b>Exam 4 (Chapters 12-14)</b>  Ch15 Homework Problem  SPSS Correlation (Lesson 31)  Application Discussion
April 10 (12:30am) through April 20 (8:00am)	<b>Module 13:</b> Introduction to Regression	Read G&W Chapter 16 Complete Homework Problems Ch 16  Read/Work G&S SPSS Lessons 33 and 19  Write Application Discussion  Write Research Article Analysis	Ch16 Homework Problem  SPSS Regression (Lesson 33)  Application Discussion  Article Analysis
April 17 (12:30am) through April 27 (8:00am)	<b>Module 14:</b> Chi-Square Statistic	Read G&W Chapter 17 Complete Homework Problems Ch 17  Read/Work G&S SPSS Lessons 39, 40, 41  Write Application Discussion  Write APA Style Results Section	Ch17 Homework Problem  SPSS Chi Square (Lesson 41)  Application Discussion  Results Section
April 24 (12:30am) through May 4 (8:00am)	<b>Module 15:</b> Wrap Up and Review	<b>Take Exam 5 (Chapters 15-17)</b>  Write Research Article Analysis  Review Course Material	<b>Exam 5 (Chapters 15-17)</b>  Article Analysis
May 4 (8:00am) through May 8 (11:59pm)	<b>Module 16:</b> Final Exam	Take Comprehensive Final Exam (Chapters 1-17)	Comprehensive Final Exam

The professor reserves the right to amend this syllabus at any time. If revisions are necessary, the professor will make every effort to provide as much advanced notice as possible.

Important [University Dates](https://www.tamuct.edu/registrar/academic-calendar.html): <https://www.tamuct.edu/registrar/academic-calendar.html>

## TECHNOLOGY REQUIREMENTS AND SUPPORT

### Technology Requirements

Students must be able to perform basic computer skills such as access the internet; log on to websites that require usernames and passwords; navigate tabs and links on web pages; open and send emails; create and send attachments; download and view attachments including Microsoft Word documents and PowerPoint slideshows; open and view streaming video; input and save information entered into online questionnaires; create, save, and upload files in widely-accessible formats (e.g., .rtf, .pdf, or .docx); copy, paste, and insert textboxes onto documents, and create folders on personal computers to organize and save completed work. Students will need reliable and frequent access to a computer and to the Internet. Students will also need a headset with a microphone (or speakers and a microphone) to listen to online resources and conduct other activities in the course.

This course will use the A&M-Central Texas Instructure Canvas learning management system. Logon to A&M-Central Texas Canvas [<https://tamuct.instructure.com/>] or access Canvas through the TAMUCT Online link in myCT [<https://tamuct.onecampus.com/>]. You will log in through our Microsoft portal.

Username: Your MyCT email address. Password: Your MyCT password

### Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your instructor.

### Other Technology Support

For log-in problems, students should contact Help Desk Central.

24 hours a day, 7 days a week:

Email: [helpdesk@tamu.edu](mailto:helpdesk@tamu.edu)

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): [<http://hdc.tamu.edu>]

*Please let the support technician know you are an A&M-Central Texas student.*

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## UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

### Drop Policy

If you discover that you need to drop this class, you must complete a [Drop Request Form](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf) [[https://www.tamuct.edu/registrar/docs/Drop\\_Request\\_Form.pdf](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf)].

Professors cannot drop students; this is always the responsibility of the student. The Registrar’s Office will provide a deadline on the University Calendar for which the form must be

completed, signed and returned. Once you return the signed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

### **Academic Integrity**

Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, working with others in an unauthorized manner, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be referred to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more [information regarding the Student Conduct process](https://www.tamuct.edu/student-affairs/student-conduct.html),  
[https://www.tamuct.edu/student-affairs/student-conduct.html].

If you know of potential honor violations by other students, you may [submit a report](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0),  
[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout\_id=0].

### **Academic Accommodations**

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Office of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations, please contact the Office of Access and Inclusion, WH-212 or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information please visit our [Access & Inclusion](https://tamuct.instructure.com/courses/717) Canvas page (log-in required)  
[https://tamuct.instructure.com/courses/717]

### **Important information for Pregnant and/or Parenting Students**

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of

Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit [Student Affairs](https://www.tamuct.edu/student-affairs/index.html) [https://www.tamuct.edu/student-affairs/index.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines](http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf) online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

### **Tutoring**

Tutoring is available to all A&M-Central Texas students, both on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111. Tutor.com tutoring **will not offer writing support** beginning August 1, 2019 but will continue to offer other tutoring support.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or email [studentsuccess@tamuct.edu](mailto:studentsuccess@tamuct.edu) .

Chat live with a tutor 24/7 for almost any subject from your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas. Access Tutor.com through Canvas.

### **University Writing Center**

Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University—Central Texas (TAMUCT) is a free workspace open to all TAMUCT students from 10:00 a.m.-5:00 p.m. Monday thru Thursday with satellite hours in the University Library Monday thru Thursday from 6:00-9:00 p.m. This semester, the UWC is also offering online only hours from 12:00-3:00 p.m. on Saturdays.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing,

our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via [WOnline](https://tamuct.mywconline.com/) [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at [bruce.bowles@tamuct.edu](mailto:bruce.bowles@tamuct.edu) if you have any questions about the UWC and/or need any assistance with scheduling.

### **University Library**

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index].

### **Sexual Violence at A&M-Central Texas**

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the [Title IX webpage](https://www.tamuct.edu/departments/compliance/titleix.php) [https://www.tamuct.edu/departments/compliance/titleix.php].

### **Behavioral Intervention**

Texas A&M University-Central Texas cares about the safety, health, and well-being of its students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, who are exhibiting concerning behaviors, or individuals causing a significant disruption to our community, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the [referral](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2) online [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout\_id=2].

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](https://www.tamuct.edu/student-affairs/bat.html) website for more information [https://www.tamuct.edu/student-affairs/bat.html]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5800.

## **INSTRUCTOR POLICIES**

### **Course Calendar**

Carefully examine the Course Calendar. Note that each Module will be available to students for 10 days with the exception of Module 1, which opens on the first day of the semester. Each Module (except Module 1) opens on a Friday at 12:30am CST, and Module assignments are due 10 days later on Monday morning by 8:00am CST (except the initial discussion posts). Students should have all assignments submitted for each Module well before the deadlines. **No assignments will be accepted for credit after the deadline without a written excuse documenting the dates of the absence, which must coincide with the work to be made up, provided by physicians, military supervisors, or law enforcement officers (late work policy, make up policy).**

When planning study time, students should realize that the upcoming Module opens before the current Module closes, so a portion of the 10 days that each Module is available overlaps with another Module. Students should plan accordingly and realize they do not have 10 days to devote to each Module exclusively. However, a 10-day period of availability, instead of a one-week period, allows students greater flexibility to plan their coursework and still complete their assignments on time should an unexpected emergency arise.

Students should also realize that the professor will not be available on the weekends to answer

questions. Therefore, students should not plan to complete and submit work on the weekend before it is due. Instead, students should begin each Module the first weekend it opens so that students can seek the professor's assistance during the week and submit accurate assignments well before the deadline.

### Recommended Academic Strategies

1. Complete the 'Getting Started' tasks on the course calendar before the first day of class. The goal of this class is to learn statistics, not to learn how to use a computer. Students should have two 'back-up' computers located before the course begins so they can concentrate on completing coursework even in the event of technical difficulties.
2. Be realistic about the time you must devote to the course. You should set aside a *minimum of 9 hours each week for the next 16 weeks to devote to this course.*
  - a. According to the federal definition of a credit hour and our [accreditation requirements](#), students should spend "not less than one hour of classroom or direct faculty instruction and a minimum of two hours out of class...for one semester hour of credit" (<http://www.sacscoc.org/subchg/policy/CreditHours.pdf>). Because this is a 3-credit hour class, students should be spending at least 9 hours on coursework per week. Bear in mind that this guideline is for an average class. Many students find statistics to be a difficult course, so you may require *significantly more time* to grasp the concepts and complete the assignments.
  - b. We know from research that spaced practice is better than massed practice when learning new information. Thus, spending 2 hours a day for 5 days a week on coursework is better for your learning and your grade than 'pulling an all-nighter.' Adjust your schedule accordingly.
  - c. Begin each module the day it opens. The course requirements are too time-demanding and labor-intensive to wait until the last day assignments are due to begin work.
3. Follow the sequence of instruction. Gaining a full, independent understanding of the content is absolutely critical in an online course, and the sequence of instruction provides diverse activities based on sound educational practice to meet this goal. (If you are memorizing the formulas, you are studying for the class incorrectly!)
4. Pay attention to the percentage of your grade each assignment is worth. Simply doing well on the exams will not allow you to pass the course. Students must submit all assignments every week to do well in the course.
5. Complete and submit course assignments on time. Extensions for coursework will not be granted. Find at least two 'back-up' computers with internet access if your primary computer "crashes" or you have connection difficulties. Save your work often and on multiple media (e.g., hard drive, jump drive), so you do not lose your work.



6. Stay focused. Just as in a face-to-face class, reduce as many distractions as possible when working on course assignments. Turn off all electronic devices such as cell phones, music players, gaming equipment, etc. Postpone business not related to the course until you have completed your assignments for the day.
7. Keep me informed. At the first sign of confusion or difficulty, request assistance in Study Hall or email me for an appointment in WebEx. Unless I hear from you, I will not know how to help you.
8. Be professional and use proper netiquette (i.e., internet etiquette).
  - a. Use standard English in all of your communications, and write all correspondence in complete sentences. Do not abbreviate or use texting shortcuts (e.g., OMG! R U kidding. ROFL!). Spell check, proofread, and revise your messages before sending them.
  - b. Be polite and respectful of others. Do not use all UPPERCASE LETTERS, which is equivalent to shouting. Avoid sarcasm and irony because they are easily misinterpreted by the reader. Do not 'flame' others by sending negative or hurtful comments; though the reader cannot see you, you are not anonymous.
  - c. Remember that you are individually accountable for all your messages and online actions. Treat Study Hall and your interactions with others in class as you would in your professional career.

### Copyright Notice

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas' Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

### Clinical Mental Health Counseling Program Student Learning Outcomes Rubrics

Table 5 CMHC Rubric SLO1

Homework Problems (SLO1 Competence)	None	Some	Basic	Above Average	Superior
Use of statistical methods used in conducting research and program evaluation (IIF8h);					
Basic concepts of analysis and use of data in counseling (IIF8i);					

Table 6 CMHC Rubric SLO2

<b>Research Article Analysis (SLO2 Competence)</b>	<b>None</b>	<b>Some</b>	<b>Basic</b>	<b>Above Average</b>	<b>Superior</b>
Understands qualitative, quantitative, and mixed research methods( IIF8f);					
Understands designs used in research and program evaluation (IIF8g);					
Statistical concepts, including scales of measurement, central tendency, variability, distributions, and correlations.					
Reliability and validity in the use of assessments.					

Table 7 CMHC Rubric SLO3&4

<b>Concept Applications Discussions &amp; Homework Assignments (SLO3&amp;4 Competence)</b>	<b>None</b>	<b>Some</b>	<b>Basic</b>	<b>Above Average</b>	<b>Superior</b>
Understands the importance of research in advancing the counseling profession, including how to critique research to inform counseling practice (IIF8a);					