

TENNESSEE TECH UNIVERSITY
DEPARTMENT OF COUNSELING AND PSYCHOLOGY
COUN 7740 ADVANCED QUANTITATIVE
INQUIRY AND RESEARCH METHODS

THURSDAY, 9:00-11:50AM, FARR 305, 3 HOURS, FALL 2021

INSTRUCTOR INFORMATION

Instructor's Name: Tony Michael, Ph.D., LPC-MHSP, ACS, RPT-S, NCC

Office: Farr 303F

Telephone Number: **931-372-3457**

Email: tmichael@tntech.edu

OFFICE HOURS

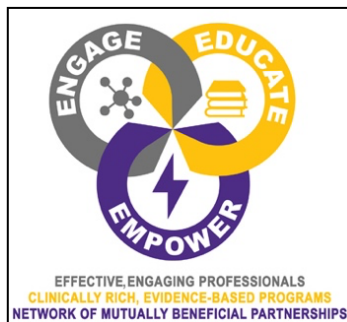
BY APPOINTMENT

COURSE INFORMATION

Welcome to Advanced Quantitative Inquiry and Research Methods! I am excited to work with you all this semester. My hope is that this course will assist you in your professional development and research competence as a Scholar-Practitioner.

TTU COLLEGE OF EDUCATION CONCEPTUAL FRAMEWORK:

Prepare effective, engaging professionals through clinically rich, evidence-based programs with a network of mutually beneficial partnerships.



PREREQUISITES

Permission of director of doctoral studies.

TEXTS AND REFERENCES

Required:

1. Furr, R. M. (2011). *Scale Construction and Psychometrics for Social and Personality Psychology*. London, UK: Sage Publications. (Part of the SAGE Library in Social and Personality Psychology Methods).
2. Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh, 8th Edition*. Pearson.
3. Access to Statistical Package for Social Sciences (SPSS) software.
4. There are also required articles/book chapters included on the reference list at the end of this document which will be posted on ilearn and/or available online through the library portal.

Additional References:

- Allen, M.P. (1997). *Understanding regression analysis*. NY: Plenum Press.
- Pagano, R.R. (1994). *Understanding statistics in the behavioral sciences*. NY: West Publishing.
- Pett, M. A., Lackey, N. R., Sullivan, J. (2003). *Making Sense of Factor Analysis: The Use of Factor Analysis for Instrument Development in Health Care Research*. Sage.
- Spatz, C. (2001). *Basic statistics*. NY: Wadsworth.
- Tabachnick, B.G. & Fidell, L. S. (2019). *Using Multivariate Statistics*. (7th Ed.). NY: Pearson Education. ISBN: 9780134790541
- Wampold, B.E. and Drew, C.J. (1990). *Theory and application of statistics*. NY: McGraw Hill.

COURSE DESCRIPTION

COUN-7740. Advanced skills used to conduct quantitative research in counseling.

COURSE CACREP OBJECTIVES/STUDENT LEARNING OUTCOMES

Standards	Content/Reading	Formative Assessment	Summative Assessment
6.B.4.e. models and methods of instrument design	Furr, M. (2011). Chapters 1-10.	Discussions, SPSS outputs, AMOS outputs, etc.	Confirmatory Factor Analysis Presentation

MAJOR TEACHING METHODS

Lectures, demonstrations, discussion, reading, or written assignments

SPECIAL INSTRUCTIONAL PLATFORM/MATERIALS

ILearn, laptop, etc.

TOPICS TO BE COVERED

- To provide students with advanced skills in models and methods of instrument design (CACREP Doctoral Standard 4.e)

- To offer students additional knowledge in the usage of SPSS for Windows and Macintosh.
- Conduct all of the statistical techniques noted above using SPSS software, including testing the assumptions of the technique, interpret the results of the SPSS output and write the results in APA publication style.
- To provide students with additional expertise in the analyzation of quantitative research and the ability to use multiple techniques that are introduced in this class.
- Demonstrate a conceptual understanding of multiple regression with mediators and moderators and generalized linear modeling (e.g., logistic regression) as evidenced by your ability to select and justify the statistic that is appropriate to test a particular hypothesis, explain what the procedure is accomplishing and the logic underlying the given procedure.

GRADING AND EVALUATION PROCEDURES

GRADING SCALE

Letter Grade	Grade Range
A	100-93
B	92-85
C	84-77
D	76-70
F	69 and below

COURSE POLICIES

STUDENT ACADEMIC MISCONDUCT POLICY

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Academic Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 – [Student Academic Misconduct at Policy Central](#).

ATTENDANCE POLICY

Attendance to, arriving on time for, preparation for, and participation in scheduled classes is required. There are no excused absences, as this class requires a high level of participation from students. Should a student miss more than one (1) class, then the student will be dropped from the course and receive a failing grade at the instructor's discretion. As arriving late or leaving early is a disruption to the entire class, I would ask that all students inform the class members and me should leaving early or arriving late for class be necessary. Habitually leaving early or arriving late will result in failure of the course.

CLASS PARTICIPATION

Participation in class is essential to the value of the learning experience within this course. A student's grade may be affected negatively by low participation. In particular, the instructor will evaluate students' participation on the basis of the following criteria.

ASSIGNMENTS AND RELATED POLICY

The overall objective of this course will be to learn the advanced quantitative research methods of exploratory and confirmatory factor analyses for scale construction, validation, and item analysis. In addition, this course will assist in the further development of your competence in using SPSS and ability to perform a more complex regression analysis.

1. Presentation of the Construct (Presentation #1)

You will make a presentation on a construct that you would like to measure. This should be a 20-30 minute presentation which will include the justification and rationale for the construct. You will include in this presentation the design for a potential future pilot study. Students will provide a projected example SPSS output table of an exploratory factor analysis. This presentation will account for 15% of your grade.

2. Confirmatory Factor Analysis Presentation (Presentation #2)

You will make a presentation on the validation and reliability of a scale using a data set provided to them from the professor. This is a 30 minute presentation where students will demonstrate competencies in utilizing a confirmatory factor analysis and usage of AMOS software and descriptive statistics through SPSS software. Students will present the scale's constructs, methodology, results, and discussion sections. This presentation will account for 35% of your grade.

3. Final Paper

The final assignment is a research paper that does not exceed 15 pages and includes the methodology, results, and discussion sections from a data set provided by the professor. Students will demonstrate competency in implementing a special form of regression analysis. Some examples include logistic regression, hierarchical linear regression, or a regression discontinuity design. This assignment will account for 50% of your grade.

DISABILITY ACCOMMODATION

Students with a disability requiring accommodations should contact the Accessible Education Center (AEC). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The AEC is located in the Roaden University Center, Room 112; phone 931-372-6119. For details, view the Tennessee Tech's Policy 340 – [Services for Students with Disabilities at Policy Central](#).

COVID-19 UNIVERSITY PROTOCOLS

1. Each student must take personal responsibility for knowing and following the university's COVID-19 protocols. Students are expected to follow all COVID-19 directives published by Tennessee Tech on its official COVID-19 webpage: www.tntech.edu/covid19.
2. As conditions related to the pandemic change, the university's COVID-19 protocols are also likely to change. Students are expected to monitor the university's official COVID-19 webpage to stay up to date on all university COVID-19 protocols.
3. If the university's COVID-19 protocols include the wearing of face coverings inside campus facilities, then face coverings must be worn covering the mouth and nose. Protocols will apply to all vaccinated and unvaccinated individuals.
4. Students who refuse to comply with university protocols will be reported to the Tennessee Tech Dean of Students.
5. Students should direct all requests for excused class absences related to COVID-19 to Tennessee Tech's Health Services by following the student link at the following website: www.tntech.edu/covid19/report.php . The Office of Student Affairs will provide notifications to faculty members of student absences and the expected length of the absence.
6. Students can get a COVID-19 vaccine on campus at Tech Health Services. Call ahead to schedule at (931) 372-3320. COVID-19 vaccines are given free of charge daily, as well as testing.
7. Per CDC guidelines, you are considered fully vaccinated:
 - 2 weeks after your second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, OR
 - 2 weeks after a single-dose vaccine, such as Johnson & Johnson's Janssen vaccine

INCLEMENT WEATHER

In the event of campus closure or course cancellations due to bad weather, course content and assignments may be modified as needed. If the campus is open and classes are in session, but weather conditions in the student's locale present a risk for travel, the student will be excused from class and will be allowed to make up work. It is the student's responsibility to access media sources for information on school closures or class cancellations. When in doubt, email the instructor.

PANDEMIC PLAN

Should normal classroom activities at your placement be disrupted by a pandemic outbreak, the format for this course may be modified to enable completion. In that event, new instructions for the continuation of the course will be provided.

ADDITIONAL RESOURCES

TECHNICAL HELP

If you are experiencing technical problems, visit the myTech IT Helpdesk for assistance. If you are having trouble with one of the instructional technologies (i.e. Zoom, Teams, Qualtrics, Respondus, or any technology listed here) visit the Center for Innovation in Teaching and

Learning (CITL) website or call 931-372-3675 for assistance. For accessibility information and statements for our instructional technologies, visit the CITL's Learner Success Resource page.

TUTORING

The university provides free tutoring to all Tennessee Tech students. Tutoring is available for any class or subject as well as writing, test prep, study skills, resumes, etc. Appointments are scheduled. Please see the Learning Center website for more information.

HEALTH AND WELLNESS

COUNSELING CENTER

The Counseling Center offers brief, short-term, solution-focused therapeutic interventions for Tennessee Tech University students. The staff of the Counseling Center is available to assist students with their personal and social concerns in hopes of helping them achieve satisfying educational and life experiences. To learn more or schedule an appointment, visit the Counseling Center website.

HEALTH SERVICES

Health Services offers high-quality, affordable care that is accessible and promotes the health and wellness of our Tennessee Tech community. Visit the Health Services website to learn more.