

**Dewar College of Education and Human Services  
Valdosta State University  
Department of Curriculum, Leadership, and Technology**

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**RSCH 9850  
Advanced Quantitative Research Methods  
3 SEMESTER HOURS**

**Guiding Principles (DEPOSITS)**

*(Adapted from the Georgia Systemic Teacher Education Program Accomplished Teacher Framework)*

Dispositions Principle: Productive dispositions positively affect learners, professional growth, and the learning environment.

Equity Principle: All learners deserve high expectations and support.

Process Principle: Learning is a lifelong process of development and growth.

Ownership Principle: Professionals are committed to and assume responsibility for the future of their disciplines.

Support Principle: Successful engagement in the process of learning requires collaboration among multiple partners.

Impact Principle: Effective practice yields evidence of learning.

Technology Principle: Technology facilitates teaching, learning, community-building, and resource acquisition.

Standards Principle: Evidence-based standards systematically guide professional preparation and development.

**InTASC Model Core Teacher (Educator) Standards\***

*(To be used for all teacher preparation program courses. +Identify those that apply specifically to this course.)*

Standard #1: Learner Development. The teacher (educator) understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

Standard #2: Learning Differences. The teacher (educator) uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

Standard #3: Learning Environments. The teacher (educator) works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self motivation.

+Standard #4: Content Knowledge. The teacher (educator) understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

+Standard #5: Application of Content. The teacher (educator) understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

Standard #6: Assessment. The teacher (educator) understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.

Standard #7: Planning for Instruction. The teacher (educator) plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

*Positively Impacting Learning Through Evidence-Based Practices*

Standard #8: Instructional Strategies. The teacher (educator) understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.

Standard #9: Professional Learning and Ethical Practice. The teacher (educator) engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

Standard #10: Leadership and Collaboration. The teacher (educator) seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

\*Council of Chief State School Offices, (2013, April). *InTASC model core teacher standards and learning progressions for teachers 1.0*. Retrieved from [http://www.ccsso.org/Documents/2013/2013\\_INTASC\\_Learning\\_Progressions\\_for\\_Teachers.pdf](http://www.ccsso.org/Documents/2013/2013_INTASC_Learning_Progressions_for_Teachers.pdf)

## **COURSE DESCRIPTION**

Prerequisite: RSCH 9840. Development of the skills to identify an appropriate statistical technique, to interpret results for independent research, and to critically evaluate contemporary social research using advanced quantitative methods.

## **REQUIRED TEXTBOOKS / RESOURCE MATERIALS**

American Psychological Association (2010). *Publication manual of the American Psychological Association* (6<sup>th</sup> ed.). Washington, D.C.: The Association. ISBN 978-1-4338-0561-5.

## **COURSE OBJECTIVES** (Show alignment to InTASC Model Core Teacher Standards for all educator preparation courses).

Given the syllabus, course materials, and guidance from a professional, the candidate will accurately and/or appropriately:

1. Identify the similarities and differences between univariate statistical analyses and multivariate statistical analyses (InTASC 4 & 5);
2. Identify and describe the statistical assumptions and concerns (missing data, outliers; normality, linearity, and homoscedasticity) for conducting multivariate statistical analyses and apply appropriate techniques for addressing problematic diagnoses to example data sets (InTASC 4 & 5);
3. Describe the use of repeated measures ANOVA and mixed design ANOVA in terms of purpose, kinds of research questions, practical issues, and assumptions (InTASC 4 & 5);
4. Analyze data, interpret the results, and report the results of repeated measures ANOVA and mixed design ANOVA using current APA guidelines (InTASC 4 & 5)
5. Describe the use of loglinear regression, factor analysis, and hierarchical linear modeling in terms of purpose, kinds of research questions, practical issues, and assumptions (InTASC 4 & 5);
6. Identify and critically critique journal articles of research studies that used multivariate statistical procedures addressed in the class (InTASC 4 & 5); and
7. Identify and describe ethics in research (InTASC 9).

## **COURSE ACTIVITIES/ASSIGNMENTS/REQUIREMENTS**

A number of course activities are inherent in completion of the processes and products described in the Course Evaluation methods generally described below (more detailed descriptions of each Course Evaluation can be found on the course website). These activities include: analysis and interpretation of multivariate data (course objectives 3, 5, & 7); critical writing (Course objectives 5, 6 & 7); reading and

online discussion (course objectives 1-7); and library and Internet research (course objective 6 & 7).

1. Students are to read and be accountable for all class assignments. Readings are in accordance with the class schedule.
2. Students are expected to maintain a regular and frequent presence (login at least every two days) in the online course, particularly when involved in group projects and online discussion groups. Online work is generally conducted asynchronously, and does not require students to be online at scheduled times. There may be occasional synchronous class activities such as chats that will be scheduled at mutually agreed upon times.
3. Students are to complete and submit assignments into the Dropbox on time. All assignments have due dates and close at 11:30 p.m. on the scheduled date. *Work submitted via email will not be evaluated. Late tasks or activities as a general rule will not be accepted for credit.* Technically, this is the class policy. However, communication is the key. If a student contacts me in advance and we come to an agreement based on individual circumstances, then I have some flexibility on accepting and grading late work. Instructor approved late assignments are subject to a minimum 10% deduction for each day past the due date.
4. Students are to demonstrate their understanding of the concepts presented in online classes, on the Internet, and in the readings through assignments, exercises, reflections, and online journals.

## **COURSE EVALUATION**

### **A. Analysis and Interpretation of Multivariate Data**

Students will develop a research question or questions based on a given or self-obtained dataset that can be addressed using multivariate analyses. Upon instructor approval of the research questions, students will screen the data and apply appropriate techniques to assure the data meet the assumptions of the selected statistical procedure. Students will then analyze the data to address their research question(s) and report their findings using APA guidelines. (Course Objectives 1-7)

### **B. Critical Writing**

Students will begin the development of their dissertation research topic. By the end of the semester, students should be able to explain their methods and procedures, including statistical analyses, orally and in writing. (Course Objectives 1-7)

### **C. Online Discussions**

Students will be required throughout the semester to review instructor posted discussion threads, the statements and questions will be based on required readings, previous discussions, and prerequisite knowledge. Various online group strategies including discussion, chats, and Wimba Classroom will be employed. Throughout the term students will be asked to actively search for articles beyond the required readings, cite these articles in their online discussions, and use the knowledge gained from these articles to stimulate further discussion and debates. The criteria for evaluation are as follows:

1) students should use references in their discussions to provide a basis and source for their information shared and 2) students should offer something substantive and valuable to the discussion. (Course Objectives 1-7)

## **Grading Scale**

Quality is expected in all products and performances. Points are summed from each task or activity to generate the final score for each student. Final grades are assigned based on a 10 point grading scale; A - 100% - 90%, B – 89% - 80%, C – 79% - 70%, D- 69% - 60%, and F – 59% and below.

### **Flexibility:**

Our intention is to accomplish objectives specified in the course syllabus. Circumstances may arise, however, that prohibit us from fulfilling this endeavor. Therefore, this syllabus is subject to change. You will be notified of any change in advance of its occurrence. Additionally, we are willing to customize each student’s learning objectives to fit her or his learning needs and goals.

## **ATTENDANCE POLICY**

Students are expected to maintain a regular and frequent presence in the online course, particularly when involved in group projects and online discussion groups. It is the responsibility of the student to make sure that they have adequate equipment and access to maintain this online presence. Because students are being prepared to accept professional duties and responsibilities, attendance decisions are viewed as critical to developing professionalism.

## **PROFESSIONALISM**

Within the coursework and fieldwork, educators expected to respect intellectual property, complete assignments with consistent punctuality, regularly attend class (online and/or face-to-face), make an effort to complete assignments completely and correctly, pay careful attention to detail in following instructions, show willingness to revise based on instructor or peer feedback, strive for creativity in devising products and processes, demonstrate enthusiasm in face-to-face and online endeavors, be helpful to peers, show self-reliance to enable independent progress/ completion of work, display courtesy in written and oral communications, and exhibit cooperation in group work situations. Professional educators should practice fairness based upon a belief that all learners can achieve.

## **DEWAR COLLEGE OF EDUCATION & HUMAN SERVICES POLICY ON PLAGIARISM**

<http://www.valdosta.edu/colleges/education/deans-office/policy-statement-of-plagiarism.php>

## **TITLE IX STATEMENT**

Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Director of the Office of Social Equity, [titleix@valdosta.edu](mailto:titleix@valdosta.edu), 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

## **ACCESS STATEMENT**

Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: [access@valdosta.edu](mailto:access@valdosta.edu).

## **STUDENT OPINION OF INSTRUCTION**

At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on BANNER. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous, and instructors will be able to view only a summary of all responses two weeks after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the responses until after final grade submission, they will be able to see which students have or have not completed their SOIs, and student compliance may be considered in the determination of the final course grade. These compliance and non-compliance reports will not be available once instructors are able to access the results. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at <http://www.valdosta.edu/academic/OnlineSOIPilotProject.shtml>.