Advanced Assessment Techniques, Psychometrics and Evaluation

I. Course Description:
This course provides an in-depth knowledge base of psychometric principles and measurement theory as applied to the design, evaluation, planning, and implementation of assessment processes at the individual, group and program level. Advanced principles of instrument design (e.g., factor analytic techniques and Item analysis) will be utilized to explore critical issues in validity and reliability of assessment instruments. Student will learn to apply these core principles of measurement in evaluation contexts relevant to contemporary issues in counseling.

II. Rationale:
Advanced use of technology is emphasized including web page development and distance learning. This course provides an in-depth framework for understanding the function of testing and measurement. A theoretical and practical knowledge of testing including advanced critiquing of current measures is emphasized. The course is available only for doctoral students.

III. State Adopted Proficiencies
N/A

IV. TExES Competencies
N/A

V. Course Objectives and Student Learning Outcomes
The course objectives and student learning outcomes address the CACREP Standards

CACREP Standards

II C-6 Models and Methods of Assessment and Use

IV E-3 Knows models and methods of instrument design.

IV E-4 Knows models and methods of program evaluation.
**Student Learning Objectives:**

1. Doctoral students will demonstrate an in-depth knowledge and understanding of the historical, philosophical, and social backgrounds of assessment and psychometric principles.

2. Doctoral students will demonstrate an in-depth knowledge and understanding of the skills and competencies that test examiners must master including critical evaluation of tests/assessments.

3. Doctoral students will demonstrate an in-depth knowledge and understanding of measurement, statistical, and research skills needed to select, administer, and interpret tests and assessment information.

4. Doctoral students will critique tests and assessment techniques, including behavioral observations and computer assisted programs.

5. Doctoral students will demonstrate knowledge and understanding of the legal aspects and requirements as well as ethical standards of assessment.

6. Doctoral students will demonstrate knowledge and understanding of models and methods of instrument design by utilizing specific analytical techniques to validate the psychometric test properties.

7. Doctoral students will have learning experiences beyond the entry-level in the models and methods of assessment and use of data.

8. Doctoral students will demonstrate knowledge and understanding of models and methods of program evaluation

**VI. Course Topics:**
Models and Methods of program evaluation

**VII. Instructional Methods and Activities:**
The text and other required readings will be the primary basis for meaningful class discussions and critical analysis activities. Additional sources of information and study will be through skill building role plays, presentation, implementing technologies, and other experiential classroom activities. Since this course is a doctoral level research course in counselor education program, students will engage in and practice a wide range of activities to enhance their research, teaching, and writing skills. Attendance and participation for this course are mandatory and necessary. Experiences that are conducted within the course are highly interactive and they cannot be replicated. In order to achieve an A in the course students must attend 90% of the class time. It is important and expected that you complete assignments prior to coming to class; including any assigned readings and other practical-based assignments. The instructor will not generally facilitate by covering all the material in the assigned readings; however, you are responsible for any information assigned and expected to draw from assigned readings in completing assignments.
**Note:** Student presentations will be scheduled according to the total enrollment in the class. The syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent.

**Writing:**
To get full credit on written assignments, students are required to strictly follow the *Publication Manual of the American Psychological Association (6th ed.)* Guidelines. Written assignments are weighted equally across four categories: mechanics, structure, completeness, and content.

**VIII. Evaluation and Assignment of Grades:**
A = 90-100%  B = 80-89%  C = 70-79%  D = 60-69%  F = <60

**Requirements:**
**Assignment 1 (20%): Quizzes**
Each student will be required to take two quizzes based on class lectures and materials covered in the textbook. The tentative examination schedule is listed in course schedule. The tests will involve a combination of objective and short answer/essay items. Items will be scored as correct or incorrect based on lecture material and readings. Students will be able to earn a maximum of 10 points on each of two quizzes. The total points available for this assignment is 20.

**Assignment 2 (15%): Assessment Presentation**
Two individuals will partner and select *one type of assessment* from chapter 9-16 and present to the class. This assignment is designed to help students develop and practice their presentation and teaching skills. The presenters will act as if they were teaching their selected chapter to classmates. The presenters will submit powerpoint slides and handout(s) to the instructor 7 days prior to their presentation. The presentation should be approximately 30-40 minutes. The audience will be asking questions and the presenters are responsible to answer questions they audience post. All slides and handouts will be posted on Blackboard. The chapters are:
- a) Tests of intelligence
  1. Intelligence assessments for preschool and education
- b) Personality assessments
  1. Personality assessment methods
- c) Clinical and counseling assessments
- d) Neuropsychological assessments
- e) Career and business assessments

**Assignment 3 (10%): Assessment Review**
Each student will present an overview of an assessment/instrument to the class. This assignment consists of two parts: presentation and paper. Both presentation and paper will be due the day of your presentation. Materials needed in your presentation include a) 2-4 page handouts, b) powerpoint slides. The presentation is approximately 15-20 minutes. You will also need to provide presentation materials for other students in this class on the day of your presentation. This project is worth 10% of a total grade. You can access information regarding
assessments in the Mental Measurement Yearbook, which is located in the library and online library database. Please follow the following outline in developing your presentation. If you go to http://www.theaaceonline.com, you will see many examples of this type of evaluation. This will help you write your paper. It is important that you discuss your opinion of the value of your chosen assessment based on your review of the instrument. This project will be evaluated on the bases of the completeness in which the instrument is reviewed. You are expected to present in written APA format a review that addresses four (4) aspects of the instrument. You will earn 4 points for addressing all the points for each of the three components. You can earn 1 additional point for the overall quality of your presentation as it conforms to APA writing standards. The total points available on this assignment is 10.

a) General information (2 points)
1. Title of instrument
2. Author(s) of instrument
3. History of instrument
4. Population for who test is designed (types of individual, age, etc.)
5. Time required for administration
6. Cost
7. Publisher or contact information

b) Practical evaluation (2 points)
1. Features of assessment materials (e.g., booklets, computer-based)
2. Ease of administration
3. Scoring procedures
4. Qualifications for administrators
5. Use in counseling

c) Technical evaluation (2 points)
1. Norms
   i. Types of norms (percentiles, standard scores)
   ii. Standardization sample (size, nature, and representatives)
2. Reliability
   i. Types of reliability and procedures (e.g., test-retest, split half, or coefficient alpha)
3. Validity
   i. Types of validation procedures (content, criterion-related, concurrent, construct)
   ii. Procedures used to assess validity and results of validity assessments
4. Generalizability

d) Application of instrument (2 points)
1. Major strengths and limitations of the assessment
2. Recommendations for use
3. Multicultural considerations of instrument

Assignment 4 (33%): Applied Measurement/Scale development validation
You will use the principles learned in this class to develop a self-report instrument designed to measure an identified construct. You will be expected to pilot this instrument on your
classmates and report the results and the psychometric properties (e.g., internal consistency, validity and reliability) of your instrument based on the pilot sample. Each student will participate in data collection process as a participant or test taker. You will be required to begin with an instrument with at least 30 items. Based on analysis of psychometric properties your instrument may be shortened. You will be expected to produce an APA manuscript and present your project to the class. Your manuscript should include a description and rationale, and comparison of general claims from other studies or similar instruments within a brief literature review of the utility of your instrument. We will work interactively on this project during class time as in a laboratory setting.

The manuscript should also contain relevant information about the general quality of your instrument including:

The evaluation of this project will be based on the quality of student completion of two (2) required elements of the write up. Quality assessment is based on the accuracy of the indices computed from statistical techniques. A final portion of the evaluation will be based on writing style conforming to APA conventions.

A) *Compute item analysis (8 points total)*
   1. Item-difficulty index (0-2 points)
   2. Item-reliability index (0-2 points)
   3. Item-validity index (0-2 points)
   4. Item-discrimination index (0-2 points)

B. *Implementation and results of a Factor Analytic application (15 points total)*
   1. Detailed interpretation of factor solution (0-10 points)
   2. Annotated SPSS results printout illustrating key decision points for interpretive solution (0-5 points)

C) *APA style writing conventions (10 Points total)*
   1. Description and rationale for instrument (0-5 points)
   2. Short literature review (minimum 5 contemporary references) (0-5 points)

**Assignment 5 (12%)** Program Evaluation worksheet
Students will be asked to complete a program evaluation worksheet designed to teach the key elements of program evaluation. Student performance on this worksheet will be evaluated as pass/no pass based on the completeness and accuracy of the completion of the form. Student who earn Pass on this exercise will earn a total of 12 points for this assignment.

**Assignment 6 (10%)**: Homework Assignments. Students turning in two completed homework assignments will receive a total of 10 points for this assignment.
IX. Course Schedule and Class Policies

A. Topics Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Scheduled Topics</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/28</td>
<td>Introduction to course; Addressing diversity issues and cultural contexts</td>
<td>C&amp;S: 1, 2; Kress Reading; Prediger reading on Multicultural issues in assessment</td>
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<tr>
<td>9/4</td>
<td>Basic Statistical Concepts for responsible use of Assessment data</td>
<td>Chapter 3</td>
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<tr>
<td>9/11</td>
<td>Validity and Reliability I</td>
<td>Chapter 4 – 6</td>
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<tr>
<td>9/18</td>
<td>Validity and Reliability II</td>
<td>Homework Assignment #1</td>
</tr>
<tr>
<td>9/25</td>
<td>Principles of Program Evaluation</td>
<td>Chapter 7; Reading from Davidson on reserve; Program Evaluation Take Home Assignment</td>
</tr>
<tr>
<td>10/9</td>
<td>Quiz 1 / Assessment Review Project</td>
<td>C&amp;S: 1-7</td>
</tr>
<tr>
<td>10/16</td>
<td>Principles of test Development I: Item Analysis</td>
<td>Ch: 8; TBA</td>
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<tr>
<td>10/23</td>
<td>Principles of Test Development II: Factor Analytic techniques</td>
<td>TBA</td>
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<tr>
<td>10/30</td>
<td>Initial Assessment in Counseling &amp; Using Assessment in Counseling</td>
<td>Ch. 14; TBA</td>
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<tr>
<td>11/6</td>
<td>Intelligence and Achievement</td>
<td>Chapter 9-11</td>
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<td>11/13</td>
<td>Personality/Marriage &amp; Family</td>
<td>Chapter 12; TBA</td>
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<td>11/20</td>
<td>Wellness Assessment &amp; Neuropsychological Assessments</td>
<td>14; TBA</td>
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<tr>
<td>11/27</td>
<td>Career Assessment</td>
<td>Chapter 16</td>
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<tr>
<td>12/4</td>
<td>Student Presentations</td>
<td>TBA Homewonk Assignment #2</td>
</tr>
<tr>
<td>12/11</td>
<td>Final Quiz</td>
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</tr>
</tbody>
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B. Class Policies

Attendance/tardiness

Attendance during class periods is necessary for an optimal learning experience for oneself and peers. Absences for university approved reasons will be accepted and considered when arranging for make-up credit. Unexcused absences will have a direct impact on grades as normally these absences result in the forfeiture of points available for earning on the day of absence. Students will be responsible for make-up of all the missed work on days of their absence. Experiential exercises are an important component of the class some of which will require an alternate assignment to substitute for experiences missed. The alternative
assignment will involve an activity/assignment commensurate in time and learning objectives to the one missed. All make ups must be arranged individually with the instructor.

B. Late work and Make-up Exams
Assignments are due during the periods designated for the course to meet. Overdue work will be deducted the equivalent of one letter grade each day tardy. No late work will be accepted beyond the last class day for the semester. Make-up exams must be scheduled within one week unless exceptional and verified circumstances apply.

C. Cell Phone/Electronic Device Usage
Cell phones and electronic paging devices are to be silenced during class times. Students serving on emergency call are to notify the instructor.

D. Academic Integrity
University students are expected to conduct themselves in accordance with the highest standards of academic integrity. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. Students should familiarize themselves with University policy concerning academic integrity and academic misconduct by reading the Student Handbook. In this class, any academic misconduct will result in a grade of 0 on the assignment and a report submitted to Student Affairs. In addition, a grade of 0 in the course or departmental action may be initiated.

E. Required method of scholarly citations
Other than informal journal writing or similar assignments, all written work is to be typed and comply with the APA (6th Edition) writing and publication guidelines. Failure to follow APA guidelines may result in significant point reduction. Work will be evaluated for style, content, grammar, spelling, and syntax.

F. Classroom/professional behavior
The ability to work in small groups is an integral aspect of this course. Consistent participation, shared assumption of responsibility, and cooperative presentation of the group assignment are expected.

X. Required Text
Textbooks:

Readings:
Other reading materials will be assigned in class.

XI. Bibliography


**XII. Grade Appeals**

As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

**XIII. Disabilities Accommodations**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Driftwood 101.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

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