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:
- Historical perspectives of assessments and testing
- Statistical concepts related to test interpretation and development
- Concepts of validity and reliability
- Models and methods of instrument design/Test development
- Intelligence assessments
- Preschool and educational assessments
- Personality assessments
- Clinical and counseling assessments
- Neuropsychological assessments
- Career assessments
- Ethical, Legal, and Professional Issues in assessments and testing

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 quiz 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. The total points available for this assignment is 20.

**Assignment 2 (10%): Teaching Presentation on an Assessment topic**
Each student will prepare a presentation that reviews basic principles and addresses at least one contemporary issue related to an assessment issue highlighted in the textbook chapters 9-16 as assigned by the instructor. Students will be responsible for developing a complete teaching module that includes at a minimum:

1. Discussion questions addressing a contemporary issue
2. Design at least one exercise and/or experiential Application
3. Provide recommendations for the practicing counseling professional

This assignment is designed to help students develop and practice their presentation and teaching skills. The presenters should model best teaching practices for a masters/doctoral
Accordingly, the presenter should assume that ALL STUDENTS HAVE READ THE assigned material before their presentation. The presenter is expected to include material from AT LEAST ONE ADDITIONAL SOURCE not covered in the text in order to extend the learning of the class. The presenters will be required to discuss their planned format and content of presentation at least one class period in advance to the scheduled date of presentation. The presentation should be approximately 20 minutes and utilize PowerPoint or other electronic format. All slides and handouts must be posted on Blackboard before the presentation. Also, the presenter is expected to produce 6 content questions (derived from the book chapter and/presentation) which they will post and students will be required to address after the presentation.

Assignment 3 (10%): Review of an Assessment Instrument
Each student will prepare a written overview of a published assessment/instrument. This project is worth 10% of a total grade and require a short paper of 4 pages maximum. You will need to 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. Each student should be prepared to share their review on Blackboard as well as verbally with classmates in small group discussion format. The total points available on this assignment is 10.

a) General information (1 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 (3 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 (4 points)
1. Major strengths and limitations of the assessment
2. Recommendations for use
3. Multicultural considerations of instrument

e) References

Assignments 4 (30%): Applied Measurement/Scale development validation exercise
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. Students will be expected to have at least 30 people complete this questionnaire and conduct an analysis of the key psychometric properties using the SPSS software.

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 20 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 (5 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. (15%) Meta Evaluation
Students will be asked to complete a ‘metaevaluation’ by reviewing and evaluating the elements of an existing evaluation report provided by the instructor. This activity is designed to orient students to the core principles of evaluation methodology and its usefulness in measurement and decision making.

Assignment 6. (15%): Homework Assignments. Students turning in two completed homework assignments will receive a total of 20 points for this assignment. The homework assignment will require students to complete a worksheet designed to assess their knowledge of basic statistical principles to be formally assessed on quiz 1.

IX. Course Schedule and Class Policies

A. Topics Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Scheduled Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3</td>
<td>Introduction to course; Addressing diversity issues and cultural contexts</td>
<td>CSS Chapter: 1-8; Kress Reading; Prediger reading on Multicultural issues in assessment</td>
</tr>
<tr>
<td></td>
<td>Review of Basic Statistical and Measurement Concepts: Valid and Reliable Measurement</td>
<td></td>
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<tr>
<td>6/5</td>
<td>Measurement Theory: Classical Testing Theory; and Generalizability Theory. Effect Size &amp; Statistical Significance; Conditional Standard Error</td>
<td>Chapter 3; TBA; HW Assignment 1</td>
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<tr>
<td>6/10</td>
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<tr>
<td>6/12</td>
<td>Quiz 1</td>
<td>CSS: 1-8</td>
</tr>
<tr>
<td>6/19</td>
<td>Consultation on measurement scaling project; Principles of test Development I: Writing and Evaluating Items/Factor Analytic Techniques &amp; Strategies</td>
<td>Measurement Scaling Project</td>
</tr>
<tr>
<td>6/24</td>
<td>Consultation on measurement scaling Project</td>
<td>Ch: 8; TBA; Homework</td>
</tr>
<tr>
<td>6/26</td>
<td>Clinical decision making, Interviewing &amp; Assessment</td>
<td>Ch. 14</td>
</tr>
<tr>
<td>7/1</td>
<td>Student Presentations</td>
<td>Chapter 9-16</td>
</tr>
<tr>
<td>7/3</td>
<td>Student Presentations &amp; Final Quiz</td>
<td>TBA</td>
</tr>
</tbody>
</table>
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. 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.

X. Required Text
Textbooks:

Readings:
Other reading materials will be assigned in class.

XI. Bibliography


**XII. Grade Appeals***

As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, 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 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 Dean’s office in the college in which the course is taught or the Office of the Provost.

**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 Corpus Christi Hall 116.

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.

**XIV. Academic Integrity/Plagiarism***

University students are expected to conduct themselves in accordance with the highest standards of academic honesty. 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. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in failing grade on the assignment.

XV. Dropping a Class*

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. June 20th is the last day to drop a class with an automatic grade of “W” this term.

XVI. Classroom/professional behavior

Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

XVII. Statement of Civility (can be in place of classroom/professional behavior)

Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

XVIII. Statement of Academic Continuity

In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.