

**George Mason University**  
**College of Education and Human Development**

**EDRS 531 Educational and Psychological Measurement**  
**Fall 2011**

**Instructor: Anthony E. Kelly, Ph.D.**

**Class Date & Time: Thursdays, 7:20 PM - 10:00 PM in Robinson A 350**

**Office Hours: 2:30-4:00 M, T 3:00-4:30, and by appointment (contact by email preferred)**

**Office Location: West Building Room 2203. Office Phone: 703-993-9713.**

**Email: [akelly1@gmu.edu](mailto:akelly1@gmu.edu)**

### **CATALOG DESCRIPTION**

**531 Educational and Psychological Measurement (3:3:0).**Emphasizes techniques and principles used in the construction, administration, and quantification of measuring devices for evaluation purposes. Discusses interpretation of standardized tests of ability, aptitude, achievement, interest, and personality.

### **REQUIRED TEXTS**

*Educational Assessment of Students*, by Anthony J. Nitko and Susan M. Brookhart.

*Psychological Testing and Assessment* (6<sup>th</sup>), by Ronald Cohen and Mark Swerdlik.

Other readings as assigned.

### **NATURE OF COURSE DELIVERY**

The course is structured around readings, reflections on those readings, class projects, activities, and papers. This course will be taught using lectures, discussions, and relevant group activities.

### **STUDENT OUTCOMES**

Attainment of the overall goal will be demonstrated by students providing evidence of the ability to:

- apply the principles of educational measurement to relevant problems in testing
- understand basic technical characteristics of standardized tests
- interpret technical information presented in standardized test manuals
- interpret standardized test results
- evaluate published standardized tests and assessment instruments;
- knowledge of current professional practices and issues related to educational measurement and assessment;
- apply sound principles of measurement and assessment in multicultural

These learning objectives correspond to the competency standards advanced by three

major educational organizations, namely, the National Council on Measurement in Education (NCME), American Federation of Teachers (AFT), and the National Education Association (NEA). In *Standards for Teacher Competence in Educational Assessment of Students* (1990), these professional associations asserted that educators should be skilled in:

- *Choosing* assessment methods appropriate for instructional decisions.
- *Developing* assessment methods appropriate for instructional decisions.
- *Administering*, scoring and interpreting the results of both externally- produced and teacher-produced assessment methods.
- *Using* assessment results when making decisions about individual students, planning teaching, developing curriculum, and school improvement.
- *Developing* valid pupil grading procedures which use pupil assessments.
- *Communicating* assessment results to students, parents, other lay audiences, and other educators.
- *Recognizing* unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information

In addition NCME's Code of *Professional Responsibilities in Educational Measurement* (NCME, 1999) as well as *Standards for Educational and Psychological Testing* (AERA, 1999) serve as lenses through which each topic will be viewed and understood.

### **RELATIONSHIP TO PROGRAM GOALS AND PROFESSIONAL ORGANIZATION**

The program goals are consistent with the following Learner-centered psychological principles (APA Division 15) outlined by the American Psychological Association Presidential Task Force in Education.

- Principle 1: The Nature of Learning Process
- Principle 2: Goals of the Learning Process
- Principle 3: Construction of Knowledge
- Principle 4: Strategic Thinking
- Principle 5: Thinking about Thinking
- Principle 6: Context of Learning
- Principle 10: Developmental Influences on Learning
- Principle 11: Social Influences on Learning
- Principle 12: Individual Differences on Learning
- Principle 13: Learning and Diversity

American Psychological Association (1997). Learner-Centered Psychological Principles: *Guidelines for the Teaching of Educational Psychology in Teacher Education Programs*.

### **Action Research (25%) – Performance based**

This requirement involves inquiry-based learning that requires students to investigate current issues and practices in standardized testing in a professional area.

### **Review of Standardized Tests (10%)**

Students are required to review two (2) standardized instruments --- one cognitive test and one personality instrument (affective traits such as interest, adjustment, etc.). Evaluation templates will be discussed in class.

**Midterm Exam (10%).** A midterm exam will be given, see course activities.

**Test Manual (45%).** A test manual, exploring different assessment techniques, will be created by each student during the semester.

**Course participation: 10%**

## **Action Research**

### **Guidelines to Action Research Reports**

#### **Topic: *Researching Testing Practices in Your Professional Area***

Please advise your respondent that: (a) this activity is part of your curricular activities in this course; (b) participation is wholly voluntary and its goal is to advance your understanding of the material covered in the lectures; (c) that the respondent can choose to not answer any particular questions or to terminate the exercise at any time explanation or justification and without any penalty; (d) that no identifying information (apart from the general job description, e.g., “school counselor,” “private psychologist” will be included in your write-up); and (e) that no remuneration or payment will be offered. After your materials are graded for the course, please erase or delete any records of the interview.

1. Interview someone in your profession who is involved in standardized testing. Examples include individuals working in a personnel office who administer qualification tests to applicants; counselors who give test to gain insight into their clients’ needs and interests; teachers who administer Standards of Learning Tests (SOLs) to comply with district and state standards-based requirements, and so forth.

2. The focus of the interview should be: a. generally speaking, what role do the instrument(s) play in your work? (Example: “*They provide concrete information that hopefully reduces the errors we could make in our hiring practices.*”)

b. What are the specific purpose(s) in the instrument(s)? (Example, “*The XYZ test is given to identify if the applicant’s typing speed is sufficient to qualify for the position.*”)

c. What are the strengths and limitations of the currently used assessments?

d. What recommendations would you make for future assessments if such impediments as time and expenses did not exist?

e. Additional feedback that emerges from the interview.

3. Summarize your findings in a narrative report. The narrative should include a description of how the individual was “recruited” for the interview and the setting. Also briefly describe the interview process (e.g., the use in audio taping, telephone interview, etc.).

For the write up of the action research, please organize the report using the questions you asked. Under each question, please give the person's response.

To save time, you do not need to transcribe a verbatim response.

It is acceptable to listen to what they say, then paraphrase their responses.

At the end of this Q&A, please give a one-page summary of what you learned from interviewing someone who uses tests and test analysis in their daily work.

**Class activities.** Supplementary learning/reading assignments may be assigned during class periods. Please plan to attend each class session. Active class participation is required. Please be sure the instructor has your email address for communication purposes.

**Letter grades will be assigned as follows:**

A+ 98-100% A 93-97.49% A- 90-92.49%  
 B+ 88-89.49% B 83-87.49% B- 80-82.49%  
 C 70-79.49% F below 70%

**Note:**

- All written assignments must be typed and must follow APA format
- Grading on written work will take into account the following factors: quality of written work, knowledge of content area, and adherence to requirements of assignment. As a graduate student, it is expected that all of your work will be turned in on the assigned dates. A late assignment is subject to a penalty of 10% of the award for every day that it is overdue. Please inform the instructor about exigent circumstances.

**Assessment Rubric for Test Manual**

Criteria	Excellent	Adequate	Inadequate
Item types	Contains examples of each item type (see below)	N/A	Fewer than 15 item types
Strengths	Conveys clearly 3 strengths of each item type (3 * 15 = 45)	Covers fewer strengths (point loss per occurrence)	One or fewer (0)
Weaknesses	Conveys clearly 3 weaknesses of each item type (3 * 15 = 45)	Covers fewer weaknesses (point loss per occurrence)	One or fewer (0)
Application	Clear application of the item type in an identified area (3 * 15 = 45)	Unclear application of the item types (3)	Poor application or no examples (1)
Interpretations	Insightful reflection on the art of creating test items, across all examples. Shows mature understanding of course materials (65)	Simply provides item types and examples, but adds little new analysis or interpretation (3)	Provides no interpretation (0)
	200 points = 100% of 45 points available for the Test Manual	Lower percentages with scores less than 45	Lower percentages
<i>Item Types</i>			
<i>Completion, short answer, and T/F</i>	<i>Multiple choice and matching</i>	<i>Essay</i>	<i>Higher order, problem solving, critical thinking</i>
<i>Performance, portfolio,</i>	<i>Performance tasks, rating scales and rubrics</i>		

<i>authentic</i>			
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### Assessment Rubric for Test Manual

Use a format appropriate for the type of test [e.g., commercial, non-commercial; unpublished]; see class lectures.

	<b>Excellent</b>	<b>Adequate /Poor</b>
Template	Applied comprehensively (5)	Missing central elements (1-4)
Interpretation beyond standard test description categories (e.g., application in your setting; validity issues; use in special populations, etc.)	Insightful and thoughtful critique or application (5)	Little or no interpretation or thought about application or validity issues (1-4)

### ASSESSMENT RUBRIC FOR PARTICIPATION AND ATTENDANCE

ELEMENT	LEVEL OF PERFORMANCE			
	Distinguished (9-10 pts.)	Proficient (8 pts.)	Basic (7 pts.)	Unsatisfactory (6 or less pts.)
Attendance & Participation  10 pts. Possible	The student attends all classes, is on time, is prepared and follows outlined procedures in case of absence, the student actively participates and supports the members of the learning group and the members of the class.	The student attends all classes, is on time, is prepared and follows outlined procedures in case of absence; the student makes active contributions to the learning group and class.	The student is on time, prepared for class, and participates in group and class discussions. The student attends all classes and if an absence occurs, the procedure outlined in this section of the syllabus is followed.	The student is late for class. Absences are not documented by following the procedures outlined in this section of the syllabus. The student is not prepared for class and does not actively participate in discussions.

### COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT STATEMENT OF EXPECTATIONS:

#### *Student Expectations*

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://academicintegrity.gmu.edu/honorcode/>].

Please note that:

- “Plagiarism encompasses the following:
    1. Presenting as one's own the words, the work, or the opinions of someone else without proper acknowledgment.
    2. Borrowing the sequence of ideas, the arrangement of material, or the pattern of thought of someone else without proper acknowledgment.”  
(from Mason Honor Code online at <http://mason.gmu.edu/~montecin/plagiarism.htm>)
  - Paraphrasing involves taking someone else’s ideas and putting them in your own words. When you paraphrase, you need to cite the source.
  - When material is copied word for word from a source, it is a direct quotation. You must use quotation marks (or block indent the text) and cite the source.
  - Electronic tools (e.g., SafeAssign) may be used to detect plagiarism if necessary.
  - Plagiarism and other forms of academic misconduct are treated seriously and may result in disciplinary actions.
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See <http://ods.gmu.edu/>].
  - Students must follow the university policy for Responsible Use of Computing [See <http://universitypolicy.gmu.edu/1301gen.html>].
  - Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
  - Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.
  - Students are expected to exhibit professional behaviors and dispositions at all times.

### *Campus Resources*

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students’ personal experience and academic performance [See <http://caps.gmu.edu/>].
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See <http://writingcenter.gmu.edu/>].

- For additional information on the College of Education and Human Development, Graduate School of Education, please visit our website [See <http://gse.gmu.edu/>].

	Course Activities	
Week 1 Sept 1	<p>Introduction to the Course Goals Six thinking hats <a href="http://members.optusnet.com.au/charles57/Creative/Techniques/sixhats.htm">http://members.optusnet.com.au/charles57/Creative/Techniques/sixhats.htm</a></p> <p>Central concepts Expectations Basic Assumptions About Psychological Measurement and Testing &amp; Essential Qualities of a Good Test C&amp;S, Chapters 4-6</p> <p>Finding and evaluating tests, see Nitko Chapter 18; C&amp; S Chapter 1 <a href="http://www.apa.org/science/programs/testing/find-tests.aspx">http://www.apa.org/science/programs/testing/find-tests.aspx</a></p>	<p><i>Begin to clarify your assessment target (application)</i></p> <p>Be aware, throughout, of the code of fair testing practices (Nitko &amp; Brookhart, Appendix B, C) Review of Taxonomies (Appendix D, Nitko); Principles of Test Development C&amp;S, Chapter 7. <a href="http://www.apa.org/science/programs/testing/fair-testing.pdf">http://www.apa.org/science/programs/testing/fair-testing.pdf</a></p>
Week 2 Sept 8	<p>Cohen &amp; Swerdlik (C&amp;S), Chapter 6</p> <p>Cohen &amp; Swerdlik (C&amp;S), Chapters 1-2</p> <p>Validity What does it mean for a test to be <b>valid</b>? With application to your assessment? Nitko, Chapter 3.</p> <p>Principles of Test Development C&amp;S, Chapter 7.</p>	<p>Targets of assessment: Nitko Chapter 2 SCANS: <a href="http://www.academicinnovations.com/report.html">http://www.academicinnovations.com/report.html</a></p> <p>What do you plan to measure? How do you define the construct? How would you know if someone had learned the construct? What evidence would convince you? Written? Oral? Performance? Portfolio? Other?</p>
Week 3 Sept 15	<p>What does it mean for a test to be <b>reliable</b>? With application to your assessment? Nitko, Chapter 4</p> <p>Review of Basic Statistical Concepts Required for Understanding and Interpreting Standardized Tests C&amp;S, Chapter 3, &amp; pp 114-125 Nitko &amp; Brookhart Appendix I, Chapter 17</p>	<p>Bring to class, 3 sample items, and list 3 advantages and disadvantages for each format, for each of: Completion, short answer, and T/F; Chapter 7. Ask in class for clarification, as necessary. Get feedback from other students.</p>
Week 4 Sept 22	<p>Visit with Librarian on locating tests and information on tests. Use of other library facilities in your research.</p>	<p>Meet in the JC Instruction lab</p>
Week 5 Sept 29	<p>Review of Basic Statistical Concepts Required for Understanding and Interpreting Standardized Tests C&amp;S, Chapter 3, &amp; pp 114-125 Nitko &amp; Brookhart Appendix I, Chapter 17 Review reliability and validity as necessary</p>	<p>Bring to class, 3 sample items, and list 3 advantages and disadvantages for each format, for each of: Multiple Choice and matching; Chapter 8. Ask in class for clarification, as necessary. Get feedback from other students.</p>

Week 6 Oct 6	<b>Midterm exam in class</b> , reviewing C&S Chapters 3-6 as supplemented by Nitko & Brookhart and lectures.	Discussion of Test Manual/Action Research Bring to class, 3 sample items, and list 3 advantages and disadvantages for essays: Chapter 9. Ask in class for clarification, as necessary.
Week 7 Oct 13	Understanding Standardized Cognitive Tests : Intelligence 1 Related Readings: C&S, Chapters 8-9 Nitko & Brookhart Appendix D	Bring to class, 3 sample items, and list 3 advantages and disadvantages for each format, for each of: Higher-order thinking, problem solving and critical thinking Chapter 10. Ask in class for clarification, as necessary.
Week 8 Oct 20	Understanding Standardized Cognitive Tests : Intelligence 2 Neuropsychology <a href="http://www.apa.org/science/leadership/tests/minority-neuro-biblio.pdf">http://www.apa.org/science/leadership/tests/minority-neuro-biblio.pdf</a>	Bring to class, 3 sample items, and list 3 advantages and disadvantages for each format, for each of: Performance, portfolio, and authentic assessments Chapter 11. Ask in class for clarification, as necessary.
Week 9 Oct 27	Understanding Standardized Cognitive Tests : Achievement Related Readings: C&S, Chapter 10; Appendix D (Key Math Technical Excerpt) Nitko on Metacognition, Appendix F	Bring to class, 3 sample items, and list 3 advantages and disadvantages for each format, for each of: Performance tasks, rating scales and rubrics; Chapter 12. Ask in class for clarification, as necessary.
Week 10 Nov 3	Personality Assessment C&S, Chapters 11-12 Nitko & Brookhart Chapter 19	How will you evaluate and grade student progress? Nitko, Chapter 15
Week 11 Nov 10	Clinical and Counseling Assessment: C&S, Chapter 13	
Week 12 Nov 17	High stakes testing and principles <a href="http://www.aera.net/policyandprograms/?id=378">http://www.aera.net/policyandprograms/?id=378</a> <a href="http://www.apa.org/pubinfo/testing.html">http://www.apa.org/pubinfo/testing.html</a> also <a href="http://www.ctb.com">www.ctb.com</a> click on	
Week 13	Thanksgiving Week	Online; no class meeting <a href="http://research.gmu.edu/docs/RCR.pdf">http://research.gmu.edu/docs/RCR.pdf</a> Ethical training (Certificate due next week)

Nov 24		
Week 14 Dec 1	<p>The Assessment of People with Disabilities: C&amp;S, Chapter 15; select populations,</p> <p><a href="http://www.apa.org/science/programs/testing/minority-dis-biblio.pdf">http://www.apa.org/science/programs/testing/minority-dis-biblio.pdf</a></p> <p><a href="http://www.apa.org/science/leadership/tests/minority-biblio.pdf">http://www.apa.org/science/leadership/tests/minority-biblio.pdf</a></p>	<p>Ethical training Certificate (due)</p> <p>Ethics and assessment practices</p>
Week 15 Dec 8	<p>Assessment, Careers, and Business C&amp;S, Chapter 16</p> <p>Nitko &amp; Brookhart Chapter 19</p> <p>Integrating assessment and instruction</p> <p>Nitko, Chapters 1 and 6</p> <p>Professional responsibilities (Nitko, Chapter 6)</p> <p>Nitko, Appendices A-C</p>	<p><b>Action Research Report</b></p> <p><b>Test manual</b></p> <p><b>Test Review Reports [Paper copies accepted tonight]</b></p> <p><b>Electronic, or drop paper copies off at WEST 2203; Due Dec 15.</b></p>