

**GEORGE MASON UNIVERSITY**  
**COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT**  
**GRADUATE SCHOOL OF EDUCATION**  
**Educational Psychology**

EDRS 531 001: Educational & Psychological Measurement  
3 Credits, Fall 2015  
Thursdays, 4:30 – 7:10pm Room L013 Thompson Hall

**PROFESSOR(S):**

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**COURSE DESCRIPTION:**

**A. Prerequisites/Corequisites**

Appropriate methods and advanced methods courses

**B. University Catalog Course Description**

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.

**C. Expanded Course Description**

This course is designed to facilitate students acquiring the fundamental measurement concepts, principles, and theories used in psychological and educational testing. Current models for test construction and the evaluation of standardized and standards-based tests will be examined.

**LEARNER OUTCOMES or OBJECTIVES:**

This course is designed to enable students to:

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 settings

**PROFESSIONAL STANDARDS (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**

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 7: Motivational and Emotional Influences on Learning

Principle 8: Intrinsic Motivation to Learn

Principle 9: Effects of Motivation on Effort

Principle 10: Developmental influences on learning

Principle 11: Social Influences on Learning

Principle 12: Individual differences in learning

Principle 13: Learning and Diversity

Principle 14: Standards and assessment

For more information please see:

American Psychological Association (2015). *Top 20 Principles from Psychology for PreK-12 Teaching and Learning*. (<http://www.apa.org/ed/schools/cpse/top-twenty-principles.pdf>)

American Psychological Association (1997). *Learner-Centered Psychological Principles: Guidelines for the Teaching of Educational Psychology in Teacher Education Programs*. (<http://www.apa.org>)

**NATURE OF COURSE DELIVERY:** This course is structured around readings, problem-solving, class projects, technology activities, and writing assignments. This course will be taught using lectures, discussions, and small and large group activities. The Blackboard site for the class can be accessed at: <https://mymasonportal.gmu.edu>.

For those in the Educational Psychology master's program, review the student Handbook: <http://cehd.gmu.edu/documents/epsychology/edpsych-handbook.pdf>

**REQUIRED TEXTS:**

Cohen, R. J., Swerdlik, M. E., & Sturman, E. D. (2013). *Psychological Testing and Assessment* (8<sup>th</sup> ed.). NY: McGraw-Hill.

-Additional readings may be used throughout the semester which are easily accessed electronically or will be made available on Blackboard.

## **COURSE ASSIGNMENTS AND EXAMINATIONS:**

### Assignment Descriptions and Weighting:

Homework Assignments (35%): Specific guidelines for each assignment will be provided.

Assn #1 Current Practices in Testing and Assessment (10%)

Action research which requires investigating current issues and practices in standardized testing in a professional area.

Assn #2 Interpretation of Testing Data (10%)

Written response to a scenario in which students will recommend the use of a hypothetical instrument to a school district superintendent.

Assn #3 Evaluation of a Standardized Test (15%)

Locate a standardized instrument to evaluate and identify the situation in which the instrument would be used. Identify at least 3 reviews or studies on your instrument. Complete a technical evaluation of your instrument.

Exams (40%): The two exams will cover the material from the class and textbook. The exams are worth 20% each.

Project (25%): Scale creation with a supporting final report.

Step 1: Select one psychological construct (e.g. self-esteem, job satisfaction, depression) to study. If possible, define sub-constructs. Be sure to write down your conceptual definition in explicit terms. In other words, be very precise.

Step 2: Identify and review at least 3 studies that addressed your construct. Answer these questions in your paper:

How did the researchers conceptually define your construct?

How did the researchers operationally define your construct?

How are the items in the measures different or similar from one another?

Step 3: Review existing scales about your construct.

Discuss validity and reliability data for the existing scales. Based on these scales, why is a new scale needed? (What are the problems with the existing scales? What gaps does your scale fill?)

Step 4: Pilot study of 10 items to measure your construct.

Develop at least 10 items to measure your construct using a Likert scale. Consider how you will establish validity and reliability of your scale. Administer your items to at least 10 individuals. Examine the descriptive statistics and Chronbach alpha and any reliability or validity information.

Step 5: Revise your items and complete your scale considering the analysis of your pilot data.

Administer your scale to at least 25 people. Analyze the data and provide measures of central tendency and variability as well as evidence of reliability and validity.

Step 6: Final Report

Write a final report covering your interpretation of the process and results. More detailed guidelines will be provided later in the semester.

Grading Policies and Grading Scale: Grades will be assigned based on the following:

A+	98-100%	B+	88-89%	C	70-79%
A	93-97%	B	83-87%	F	below 70%
A-	90-92%	B-	80-82%		

Final grades are based in the assessments described above. “Extra credit” is not available.

Other Expectations:

Course Format: All students are expected to be active contributors in the class. Students are expected to read extensively, seek information, communicate, and participate in class activities and discussions. I encourage questions at all times; do not “wait for the right moment.” If you do not understand something, please ask.

Class Preparation: Information on course assignments and notes for class lectures are available on the course blackboard site. Readings are to be completed in advance of class. For assistance with Blackboard students may email [courses@gmu.edu](mailto:courses@gmu.edu), call (703) 993-3141, or go to Johnson Center Rm 311 (office hours: 8:30am – 5:00pm). For general technical assistance, students may call (703) 993-8870 or go to the counter in Innovation Hall.

Class Attendance & Participation: Students are expected to come to class on time, complete assignments, and participate in class discussions.

Late Assignments: To successfully complete this course, students need to adhere to the due dates for specific readings and assignments to be completed. Full earned credit for assignments turned in on time. Anticipate point deductions for late work. For example, for every 24-hour period that an assignment is late, a 5% point deduction will occur.

Cell phones, texting, and other distractions are not permitted. This is a graduate level class and students are expected to display professional dispositions at all times.

## **BLACKBOARD REQUIREMENTS**

Every student registered for any Educational Psychology course with a required performance-based assessment is required to submit this assessment, (THERE IS NO TK20 REQUIREMENT FOR EDRS 531) to Blackboard (regardless of whether a course is an elective, a onetime course or part of an undergraduate minor). Evaluation of the performance-based assessment by the course instructor will also be completed in Blackboard. Failure to submit the assessment to Blackboard will result in the course instructor reporting the course grade as Incomplete (IN). Unless the IN grade is changed upon completion of the required Blackboard submission, the IN will convert to an F nine weeks into the following semester.

## **GMU POLICIES AND RESOURCES FOR STUDENTS**

- a. Students must adhere to the guidelines of the George Mason University Honor Code (See <http://oai.gmu.edu/the-mason-honor-code/>).
- b. Students must follow the university policy for Responsible Use of Computing (See <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- c. 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.
- d. 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/>).
- e. 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/>).
- f. Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.
- g. 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/>).

## **PROFESSIONAL DISPOSITIONS**

Students are expected to exhibit professional behaviors and dispositions at all times.

## **CORE VALUES COMMITMENT**

The College of Education & Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

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

**PROPOSED CLASS SCHEDULE:**

<b>COURSE SCHEDULE</b>		
<b>Date</b>	<b>Topics</b>	<b>Reading &amp; Assignments Due (all chapters should be read prior to the class meeting for the day they are assigned)</b>
9/3	Course Info Role of Measurement & Testing	Read: Chapter 1 & 2
9/10	Scales of measurement and basic statistic review	Read: Chapter 3
9/17	Types of Tests Essential Qualities of a Good Test Test Development (part 1)	Read: Chapter 4 & 8  Step 1
9/24	Reliability	Read: Chapter 5
<b>10/1</b>	No face to face meeting – make sure to submit your Assignment #1 by midnight and continue working on your project.	<b>Assn #1 Due</b>
10/8	Validity	Read: Chapter 6
10/15	Utility	Read: Chapter 7  Step 2
<b>10/22</b>	<b>Exam 1</b>	
<b>10/29</b>	Test Development (part 2) Evaluating Items	Read: Chapter 8 (cont.)  Step 3 <b>Assn #2 Due</b>
11/5	Assessment of Intelligence: what is it? Tests	Read: Chapter 9 & 10



11/12	Assessment for Education: Achievement SoL's	Read: Chapter 11
<b>11/19</b>	Assessment of Personality	Read: Chapter 12 & 13  Step 4 <b>Assn #3 Due</b>
<b>11/26</b>	<b>Thanksgiving Recess</b>	<b>No class</b>
12/3	Clinical & Counseling Assessment	Read: Chapter 14
<b>12/10</b>	Hot Topics: High stakes Testing, Value added Assessment, Standards-based  Review	<b>Final Project Due</b>
<b>12/17</b>	<b>Final Exam</b>	

## ASSESSMENT RUBRIC(S):

<b>Rubric for Final Paper</b>		
Criteria	Points earned	points possible
<b>Step 1: Definition of Construct and Any Sub-constructs</b> a. conceptual definition <b>(1 point)</b> b. operational definition <b>(1 point)</b> c. narrative description of measure <b>(1 point)</b>		<b>3</b>
<b>Step 2 &amp; 3: Short Summary of 3 Studies &amp; 3 measures</b> a. Include any revisions to the previous work that you did <b>(1 point</b> for including updated summaries of 3 studies and <b>1 point</b> for including updated summaries of 3 measures) i. Conceptual Definition ii. Operational Definition iii. Measure description and validity and reliability information b. How did the studies influence your conceptual and operation definition <b>(1 point)</b> and guide the construction of your scale <b>(1 point)</b> ?		<b>4</b>
<b>Step 4: Initial Pilot Study</b> a. Items from Original Pilot <b>(1 point)</b> b. Descriptive statistics <b>(1 point)</b> , reliability <b>(1 point)</b> and validity <b>(1 point)</b> information, including any qualitative data or feedback from respondents from the pilot <b>(1 point)</b> . c. A summary of the information you learned from the pilot study <b>(1 point)</b> . d. Description of the changes that you made to your instrument and explanation of changes <b>(1 point)</b> .		<b>7</b>
<b>Step 5: Second Pilot of the Scale</b> a. Copy of the items used in the second pilot (1 point). b. Descriptive statistics (1 point), reliability (1 point) and validity (1 point) information, including any qualitative data or feedback from respondents from the pilot (1 point). c. A summary of any new information you learned from the second pilot study (1 point)		<b>6</b>
<b>Step 6: Summary</b> a. Provide an overall assessment and reflection about your scale and the process of constructing the scale. i. What are the strengths and weaknesses of your scale? <b>(1 point)</b> ii. Give an overall statement on reliability and validity including statistical ranges and any other information you have <b>(1 point)</b> . What additional reliability and validity information would you have collected if time and sample limitations were not an issue? <b>(1 point)</b> iii. What changes you would make if you would continue with the scale development project? <b>(1 point)</b>		<b>4</b>
<b>Writing Style and Technical Merit: spelling, grammar, APA (1 point)</b>		<b>1</b>
<b>Total</b>		<b>25</b>