

1. ERMA 8350 Advanced Measurement Theory (3 credit hours)

2. Semester Spring 2015

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Office Hours: Monday 2-4pm and by appointment.

3. Resources

Required: Furr, R.M., & Bacharach, V.R. Psychometrics: An Introduction (2nd ed.). Sage. ISBN 9781452256801

Required: AERA, APA, & NCME (1999). Standards for Educational and Psychological Testing. ISBN 9780935302257

Other resources on reserve at LRC, RBD, or on Canvas, when possible.

All written assignments must be completed in APA (6th ed.) style. Please obtain the style manual if you are not familiar with this format.

4. Course Description: The focus of this course is on basic principles and applications of educational and psychological measurement. It is intended for counselors, psychologists, teachers, administrators, and measurement specialists who have some facility with basic statistics. This course is intended to be applied more than theoretical, giving students authentic experiences in applying concepts and techniques to educational and psychological assessments and assessment data. In order to maximize learning in this course, it is important that everyone prepares for and participates in class discussions by reading assignments in advance and preparing assignments.

5. Course Objectives

- Understand and apply key concepts and methods in evaluating assessment quality
- Understand role of assessments in modern educational and counseling context
- Distinguish between various types of tests, test scores, and test purposes
- Apply techniques for establishing validity and reliability, including correlation and regression, factor analytic, and analysis of variance procedures.
- Apply item analysis procedures such as item difficulty and discrimination as well as differential item functioning.
- Apply professional standards and ethics in the use and development of assessments
- Explore emerging issues and innovations in educational testing

Note: We will be using the Canvas learning management system for this course. Check the Canvas site frequently for announcements and handouts for class.

6. Tentative Course Schedule		Readings	Assignments Due
Week 1 (1/15)	Introduction to measurement, ethics, and standards	<i>You are expected to complete readings BEFORE class</i> In class: Statement on the Use of Secure Psychological Tests	In-class assignment
Week 2 (1/22)	Classical test theory and basic issues in test development and test use in education and psychology	F&B Ch. 1-3 (see reading guide for details) Standards Introduction, Chs.8, 9* Crocker & Algina Ch. pp105-109 Other readings as assigned	In-class assignment
Week 3 (1/29)	Reliability, generalizability theory	F&B Ch. 5-7, 13 (see reading guide) Standards Ch.2* McGrew_SEMs and use of test scores (applied) Other readings as assigned	In-class assignment <i>Assign/volunteer to complete group summary of Standards Ch. 10-13</i>
Week 4 (2/5)	Technical Manuals and Administration Guides <i>No in-class meeting (may have video, online discussion, etc.--TBD)</i>	Standards Ch 6, 7* Other readings as assigned	<u>Group summary due</u> of one of the Standards Ch. 10-13 <i>Work on test mini-critique #1</i>
Week 5 (2/12)	Classical validity approaches; Begin validity methods with correlational methods	F&B Ch. 8, 9 Standards Ch. 1* Lilienfeld et al SciAm (applied) Other readings as assigned	In-class assignment <u>Mini-critique #1 due</u>
Week 6 (2/19)	Modern validity theory, Evidence Centered Design (ECD), Validity methods: cognitive approaches	Hubley & Zumbo 2011 Borsboom Markus 06 (optional) Chapelle et al 10 (optional) Zieky 2014 Leighton, 2004 Oort et al 2011 (applied) Other readings as assigned	In-class assignment <i>Midterm distributed by the weekend</i>
Week 7 (2/26)	Midterm exam (take home—no class)		<u>Midterm due 3/1</u>
Week 8 (3/5)	Validity methods: EFA, CFA	F&B Ch. 4, 12 Costello & Osborne Leopold 2014 (applied) Other readings as assigned	In-class assignment
Week 9 (3/12)	Principles of test development	Coaley Ch. 2-3, 11 Schmeiser & Welch Ch. (see reading guide) Standards Ch. 4* Other readings as assigned	In-class assignment

Week 10 (3/19)	Norms, scores, and equating	Standards Ch. 5* Kaplan_Saccuzzo_CH_norms (partial) EdMeas Ch. by Kolen (partial) EdMeas Ch. by Holland & Dorans (partial) Ceci et al. 2003 (applied) McGrew_Flynn effect (applied) Other readings as assigned	<u>Mini-critique #2 due</u> In-class assignment
Spring break (3/26)			
Week 11 (4/2)	Item analysis and Item Response Theory	Kaplan & Saccuzzo Ch. Pallant & Tennant 2007 F&B Ch. 10, 14 (see reading guide) Other readings as assigned	In-class assignment
Week 12 (4/9)	Fairness and bias detection	F&B Ch. 11 Standards Ch 3* EdMeas Ch. by Camilli (see reading guide) Other readings as assigned	In-class assignment <i>If you would like an opportunity to revise your validity paper, you must turn in your first draft by 4/9 (72hr for return)</i>
Week 13 (4/16)	No class, work on projects <i>Dr. Lakin away at AERA (but reachable by email)</i>		
Week 14 (4/23)	Student presentations of validity projects		<u>All written components due</u> for validity project (for A) In-class assignment
Week 15 (4/30)	Catch up on content; Other modern assessment topics	Readings as assigned	<i>If you would like an opportunity to revise your critique, you must turn in your first draft by 4/30 (72hr for return)</i>
Finals Week			<u>Full test critique due 5/6</u>

* For all Standards chapters, the assignment includes the background for the section (e.g., pp11-22 for the Validity Chapter) plus all standards (text in bold; e.g., pp 23-31 for Ch. 1). Commentary for each standard is optional.

7. Course Requirements and Evaluation

Learning Methods: Discussions, lectures, readings, class exercises, and projects. Primary emphasis will be on class discussions integrated with lectures and will focus on textbook readings and other assignments. The purpose of these discussions is to encourage students to participate in an open, knowledgeable, supportive, and collaborative manner to enhance their understanding of the application of theory to practical situations.

Exams will be comprehensive to the extent that the course naturally builds on early concepts.

Student Assessment

In-class activities, homework, participation*	40%
Midterm exam	20%
Validity analysis project and presentation **	10%
Test critiques (2 mini, 1 full)	30%

* You MUST be in class to earn class participation and in-class activity points. Any missed in-class activities can only be made up with a university-approved absence or advanced approval from the instructor.

**Optional. See Projects.

Grading Scale: A: 90 – 100% B: 80 – 89% C: 70 – 79% D: 60 – 69% F: below 60%

8. Projects

As part of this course, you will conduct a number of applied projects that will demonstrate your grasp of measurement theory and methods as they apply to the evaluation of existing instruments. Your course portfolio will include the following elements:

1. In class analysis projects
2. Mini-critique: Test documentation
3. Mini-critique: Validity evidence
4. Midterm exam
5. Validity analysis project and presentation (**optional**)
6. Final project: Full critique (This critique may NOT be on same instrument as mini-critiques.)

If you are interested in doing less work and being eligible to receive a B in class, complete:

All projects listed above EXCEPT the validity analysis project with at least 80% quality/correct score

If you are interested in doing more work and being eligible to receive an A in class by demonstrating greater competency, complete:

All projects listed above, including a validity analysis project with presentation with at least 90% quality/correct score

See extended descriptions of projects and other activities on Canvas.

9. Class Policy Statements

Attendance Policy

- Excellent attendance is expected, but not required. If you miss class, you will need to get notes from another student.
- If you miss an in-class assignment, it can only be made up if you have a university-approved excuse for the absence.
- I will start class on time, so if you are late you will need to get notes from another student.

Late Assignments Policy

- Assignments turned in late will receive a 5% reduction in earned points per day. The only exception will be in the case of excused absences.
- Except for some in-class work, all work must be typed or it will **not be graded**. Late penalty will be applied to work completed in writing and then turned in late in typed format for a grade.

Incompletes and Withdrawals

Grades associated with incomplete course work or withdrawal from class will be assigned in strict conformity to University policy (see Auburn University Bulletin). If you wish to drop this course you may do so by the 10th class day with no grade assignment. From the 10th class day to mid-semester a W (withdrawn-passing) grade will be recorded in your transcripts. After this period withdrawal from the course will only be granted under unusual circumstances and must be approved by the Dean of the College of Education.

Note that the incomplete grade (IN) policy is in effect. The new policy requires that students complete a form requesting that an IN grade be assigned. If this form is not completed and given to the instructor of the class, a grade will be assigned with a score of zero (0) for work that has not been completed and turned in by the time the instructor reports grades.

Academic Misconduct

The Department of EFLT recognizes university policy regarding academic misconduct. Violations include, but are not limited to: plagiarism, unauthorized assistance during examinations, submitting another's work product as your own, using another's words as your own without appropriate citation, sharing unauthorized materials with another that contain questions or answers to examinations, altering or attempting to alter assigned grades. In accordance with University policy regarding academic misconduct, students may be subject to several sanctions upon violations of the Student Academic Honesty Code. See the Tiger Cub publication for the current year for specifics regarding academic misconduct as well as student's rights and responsibilities associated with the Code.

Disability Accommodations

Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. If you have not established accommodations through the PSD office, but need accommodations, make an appointment with The Program for Students with Disabilities, 1228 Haley Center, 844-2096 (V/TT).

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