

Course Syllabus
15:291:515
Psychometric Theory I
Fall 2012

Instructor: Youngsuk Suh

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Office hours: Monday 2:30 - 3:30 PM, or by appointment

Time: Monday, 4:50 – 7:30 PM

Place: Room 115, Murray Hall

Prerequisite: Statistical Methods in Education I (15:291:531) or the equivalent

Text: Murphy, Kevin R., & Davidshofer, Charles O. (2005). Psychological Testing: Principles and Applications (Sixth edition).

Recommended:

1. Crocker, L. & Algina, J. (1986). Introduction to Classical & Modern Test Theory. NY: Holt, Rinehart, and Winston.
2. Allen, M. J., & Yen, W. M. (2002). Introduction to Measurement Theory. Prospect Heights, IL: Waveland Press.
3. Thorndike, R. M. (2005). Measurement and evaluation in psychology and education. (7th ed.). Upper Saddle River, NJ: Prentice Hall

Course Description

This course is designed to provide an overview of basic but important topics and issues in educational and psychological testing and measurement. The goals of the course are for you to learn the fundamental concepts, methods, and principles of educational and psychological measurement, so that you can critically evaluate the uses of tests and other educational and psychological assessment procedures. The course topics include principles of educational and psychological measurement, such as scaling, reliability and validity analyses, and item analysis, introduction to Classic Test Theory (CTT), introduction to Item Response Theory (IRT), test development, and issues in ability testing. Basic statistical knowledge is required throughout the course since some issues in the field are necessarily technical.

Calculator: A calculator that performs basic operations is necessary for homework assignments, class exercises, and exams.

Course Requirements

1. **Exams:** There will be two in-class exams (midterm and final) and one take-home exam. They will be worth 30%, 30%, and 20% of the final grade, respectively. The exams may consist of multiple choice items, computations, and short answer/essay questions.

2. **Presentation:** A short group presentation, worth 20% of the final grade, will be held at the end of the semester. Each group selects and presents a journal paper in which skills that we learn in class were employed. More detailed information about the presentation will be distributed.
3. **Homework assignments and in-class work activities** will be given throughout the semester. The answers will be either posted on the course website or discussed during class.
4. **Reading assignments** must be completed prior to each lecture.
5. **Attendance:** Your attendances at the meetings are expected during the semester. Please bring any necessary planned absences to my attention ahead of time.

Grading System

Final letter grade will be assigned as follows:

Final Score	Letter Grade
90% and Above	A
80%-89.99%	B+
75%-79.99%	B
65%-74.99%	C+
60%-64.99%	C
55%-59.99%	D
Below 55%	F

Overall Goals

My aim as your instructor is to help you succeed in this class. I strongly recommend that you do the relevant readings, attend classes and pay attention, do the homework and in class work, and see me during my office hours if you are having trouble understanding the material. And if you have any questions or concerns always feel free to contact me and set up a meeting.

Makeup Assignments

Only in exceptional circumstances and only with **prior** permission from the instructor, or with a verifiable medical excuse, will students be able to take a makeup exam. The student must provide medical proof of illness. The student is responsible for notifying the instructor by the day of the exam that they cannot attend the exam. The format of make-up test is at the discretion of the instructor.

Communication

In this course **e-mail** will be used as a means of communication with students. You will be responsible for checking your e-mail regularly for class work, deadlines, changes and announcements.

Do NOT leave me a phone message in my office because I do NOT check my voicemail regularly. I do, however, check email several times each weekday.

Class handouts used by the instructor will be available on Sakai website at <http://sakai.rutgers.edu> under **15:291:515:01 F12 PsyThoery** . They will be made available by **8AM** each class day. It is your responsibility to print them out if you want to have hard copies in class.

The handouts provide a skeleton of what is being covered each day and will thus be an incomplete version of the material actually covered.

Tentative Class Schedule

Date	Topic	Assigned Readings
Sept. 10	1. Course Overview, Test and Measurement, Measuring Psychological attributes, Testing and Society	Ch. 1 - Ch. 3
Sept. 17	2. Basic Concepts in Measurement and Statistics	Ch. 4
Sept. 24	3.1. Scales, Transformations, and Norms	Ch. 5
Oct. 1	3.2 Norm-Referenced Tests and Criterion-Referenced Test	Handouts
	Take-Home Exam I (Covers Topics 1 - 3.2) 4. Reliability	Ch. 6
Oct. 8	5. Using and Interpreting Reliability Take-Home Exam I Due	Ch. 7
Oct. 15	6. Validity of Measurement	Ch. 8
Oct. 22	7. Validity for Decisions	Ch. 9
Oct. 29	Review Session	
Nov. 5	Midterm Exam (Covers Topics 4 – 7)	
Nov. 12	8. Test Development; Item Writing, Attitude Scales	Ch. 11, Handouts
Nov. 19	9. Item Analysis	Ch. 10, Handouts
Nov. 26	10. Item Response Theory	Ch. 10, Handouts
Dec. 3	Presentation	
Dec. 10	11. CAT and IRT Applications,	Ch. 12
	12. Issues in Ability Testing; Test Bias and Fairness Review Session	Ch. 15
Dec. 17	Final Exam (Covers Topics 8 - 12)	

** **Religious holy days** sometimes conflict with class and examination schedules. You must notify your instructor of the issues prior to the classes scheduled on dates you will be absent to observe a religious holy day. If you have to miss an exam due to a religious holy day, it is your responsibility to re-schedule with the professor another time to take the exam.