EDP 380P: PSYCHOMETRICS: THEORY AND METHODS (3 CREDITS)
SPRING 2014

General Information

Lecture meeting time: Monday, 1:00pm – 3:45pm.
Location: George I. Sanchez Building (SZB), Room 444

Instructor:	Dr. Jodi Casabianca
Email:	jcasabianca@austin.utexas.edu
Office:	SZB, Room 538G
Office hours:	Tuesday, 3:30pm-5:00pm

Teaching Assistant:	Mrs. Mishan Jensen
Email:	mshnbhrnd@yahoo.com
Office:	Learning Technology Center (LTC; SZB, Room 536)
Office Hours:	Wednesday, 10:00-11:30am

Course Description

This course covers four broad topics in psychometrics. Topics include (i) classical test theory, (ii) item response theory, (iii) factor analysis and principal components analysis, and (iv) psychological scaling theory. During the semester, you will learn about these topics from a theoretical perspective with an in-depth conceptual discussion of psychometric models, and also from an applied methodological perspective by way of applications of these models to real data using statistical analysis software. Prerequisites: Educational Psychology 380E (Fundamental Statistics) or equivalent, and 380P (Topic 1: Measurement and Evaluation or equivalent) or consent of instructor.

Learning Goals

After completing this course, students will be able to:

1. Discuss and apply the theoretical fundamentals of classical test theory;
2. Describe item response theory models and their applications in measurement;
3. Understand the similarities, differences, and links between classical test theory and modern test theory (item response theory);
4. Discuss the foundations of testing (reliability, validity, fairness) and utilize psychometric modeling approaches to evaluate those foundations for specific tests;
5. Understand and apply the basics of factor analysis and principal components analysis for purposes of test construction and validation;
6. Apply scaling theory to develop items and tests.

Format and Procedures

The course will involve a combination of lecture, data analysis demonstrations, and group discussion/activities. Homework assignments are required to prepare you for class participation and to solidify your learning.

EDP 380P: PSYCHOMETRICS: THEORY AND METHODS (3 CREDITS)
SPRING 2014

Required Textbook

Title: Introduction to Classical and Modern Test Theory
Authors: Linda Crocker and James Algina
ISBN: 978-0495395911

The book is available at the COOP bookstore for $187.65. You may also purchase this book at a discounted price ($115.50) from the website: http://www.cengagebrain.com/micro/Casabianca. Alternatively, you may access the textbook at the Perry Castaneda Library reserve desk. *Whatever you decision, it is your responsibility to read all assigned chapters in this book.*

Evaluation and Grading Policy

Your course grade will be a combination of your performance on two in-class examinations and homework assignments. Each of the scores contributing to the course grade equation shown below will be out of a maximum of 100 points.

Numeric Course Grade = (.30 * Exam 1) + (.30 * Exam 2) + (.40 * Graded Homework)

Your final course grade will be assigned based on the final conversion from numeric course grade to letter grade.

A :	≥ 93	C+:	77-79
A-:	90-92	C:	73-76
B+:	87-89	C-:	70-72
B:	83-86	F:	< 70
B-:	80-82		

Exam Dates and Policies

There will be two examinations; their format will be announced the week before the examination date. ***Exams cannot be made-up unless your absence is excused via doctor's note or prior arrangement because of religious holiday observance.***

Exam dates
Exam 1: February 28
Exam 2: April 28

Graded Homework

Graded homework assignments will require you to demonstrate conceptual understanding of the major topics in the course by applying them with real data. The purpose of these assignments is to provide an opportunity to engage in "real-word" psychometric analysis that you might not otherwise encounter until your dissertation and/or other research.

EDP 380P: PSYCHOMETRICS: THEORY AND METHODS (3 CREDITS)
SPRING 2014

Software

We will make use of statistical software to perform psychometric analyses. I will use mainly R (http://www.r-project.org/) in class to demonstrate analyses. The graded homework assignments will involve the application of R, which is free to download. A fleet of laptops will be available during class in case you do not have one. Therefore, you will have time during class to use the software and follow along with instruction. In addition, the laptops will also be available during the TA's office hours. During her office hours she will offer short software tutorials to provide an additional opportunity for learning computing skills.

Ungraded Homework

You are responsible for completing weekly reading assignments as listed on the course schedule. In addition, ungraded homework problems will be assigned for each topic/chapter to offer an opportunity to apply what you have learned in lecture and from assigned readings. The correct answers to the problems will either be available in the back of Crocker and Algina or be posted online. It is your responsibility to complete the ungraded homework and check your answers with the correct answers. If you have questions on these problems, please email the TA or visit office hours.

Canvas

You must sign up for Canvas so that you can receive course announcements, updates, lecture notes and other handouts. All electronic materials used for this course will be available on Canvas. Grades for all examinations and assignments will also be available on Canvas. Please access the training for students (http://edutech.ctl.utexas.edu/students/) for help with setting up your account and navigating the system.

Attendance Policy

You are responsible for being present in class. Therefore, you are also responsible for all lecture and written material covered in class, even if you miss a class. It is advised if you miss a class that you photocopy the lecture notes from another student.

Communication

All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at http://www.utexas.edu/its/help/utmail/1564 .

Accommodations for Religious Holidays

Notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, or a work assignment in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

EDP 380P: PSYCHOMETRICS: THEORY AND METHODS (3 CREDITS)
SPRING 2014

Documented Disability Statement

Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone). Faculty are not required to provide accommodations without an official accommodation letter from SSD. Also please notify me as quickly as possible if the material being presented in class is not accessible (e.g., text on presentation slides too small, etc.).

Policy on Academic Integrity

University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at Austin. More specifically, you and other students are expected to maintain absolute integrity and a high standard of individual honor in scholastic work undertaken at the University. This is a very basic expectation that is further reinforced by the University's Honor Code. At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

On working together

You are encouraged to study together and to discuss information and concepts covered in lecture with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else. Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Code can also be extended to include failure of the course and University disciplinary action.

On exams

During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations (in-class and take home) will result in failure of the exam, and may lead to failure of the course and University disciplinary action.

EDP 380P: PSYCHOMETRICS: THEORY AND METHODS (3 CREDITS)
SPRING 2014

Tentative Course Schedule

This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

Date	Session Focus	C&A Reading Assignment	Graded Homework Due Date
1/13/2014	Introduction; Statistics for Psychometrics	2	
1/20/2014	*No Class Meeting: Martin Luther King, Jr. Day*	--	--
1/27/2014	Classical Test Theory/Reliability	5; 6	HW #1: Statistics for Psychometrics
2/3/2014	Reliability	7	
2/10/2014	Validity	10	HW #2: CTT & Reliability
2/17/2014	Fairness	11 (243-256); 12	
2/24/2014	**Exam 1**; Item Response Theory	15	
3/3/2014	Item Response Theory	15	HW #3: Validity & Fairness
3/10/2014	*No Class Meeting: Spring Break*	--	
3/17/2014	Item Response Theory	15	
3/24/2014	Item Analysis	14, 16	HW #4: IRT
3/31/2014	Intro to Matrix Algebra; Exploratory Factor Analysis	13	
4/7/2014	Guest Lecture	TBA	HW #5: Item Analysis
4/14/2014	Principal Components Analysis	--	
4/21/2014	Scaling Theory; Review	3	HW #6: EFA/PCA
4/28/2014	**Exam 2**	--	