Psy 495 Psychological Measurement
Syllabus Spring 2017

Instructor

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Meeting Times and Location

Class: Tu-Th 10:00–11:50 AM, 369 Cramer Hall (CH). Lab sessions: 1 CH, Th 11:00–11:50 AM.

Course Description

This course covers aspects of development, validation, and applications of psychological measures. Students will learn about various types of psychological measures, including standardized tests, attitude, and personality measurement and how to evaluate them. Topics include: reliability, validity, measurement and item analysis, testing biases, standardization of tests, and item and test development. There will be both lecture and lab portions required. Prerequisite: Stat 243 and 244, and Psy 321.

Required Text

Furr, M.R., & Bacharach, B.R. (2014). *Psychometrics: An Introduction, 2nd Edition*. Sage Publications. ISBN:978-1-4522-5680-17.

Course website

I will post class materials at the course website located at: *http://web.pdx.edu/~newsomj/pmclass*. All class materials will be posted at this location, not D2L. On the class website, I will post the syllabus, some of the slides from each class, instructions for the written assignment, and lab report forms. *Only class slides that contain tables, graphs, figures, or other dense material that would be difficult to take complete notes on will be posted.* You are expected to take notes on all other material presented in class, whether presented on a slide, the board, or just mentioned verbally. Data used for labs and for the written assignments will be posted on the data page on my website at http://web.pdx.edu/~newsomj/data.htm.

Grades

Grades are based on three exams (300 points, 51.7%), two written assignments (psychometric projects; 200 points, 34.5%), and eight brief lab reports (80 points, 13.7%). Letter grades are assigned according to the following percentage categories out of the 540 total points: $\geq$ 90 = A, 85-89.9 = B+, 80-84.9 = B, 75-79.9 = C+, 70-74.9 = C, 65-69.9 = D+, 60-64.9 = D, < 60 = F. Incompletes will only be given in extenuating circumstances (please contact me as soon as possible if you think you will need one).

Exams (100 points each)

There will be three noncumulative exams (dates on the schedule below), each covering the material in readings and lectures in the section preceding the exam date. Each exam will consist of 25 multiple choice questions (2 points each) and 10 short answers (5 points each). Short answers concern definitions, concepts, examples, comparisons, or statistical output interpretation and require no more than two or three sentences for an adequate response. Short answers will be assigned 0-5 points according to the following scale: 5 = excellent, 4 = all correct/adequate, 3 = something incorrect, 2 = below average, 1 = something correct, 0 = no answer/nothing correct. Each exam covers the readings and lecture through the last class before the exam. I do not give out any written study guides or hold review sessions. Make-up exams will only be given when there is a family emergency (e.g., death in the family), you have a serious health issue (e.g., flu, hospitalization, pneumonia, documented by the student health center or a doctor), or the birth of your child.

Psychometric Projects (100 points each)
There will be two short written assignments, about 4 pages each (due dates on schedule below). For each project, one concerning an attitude or personality measure and the other a knowledge or ability test, you will develop a short measure, collect the data (online), conduct psychometric analyses, and then write up the results in a brief scientific report. Please see the "Instructions for Assignments" handout for more detail on requirements and grading. Late papers will only be accepted without penalty if there is an extenuating circumstance, such as a family emergency (e.g., death in the family), you have a serious health issue (e.g., flu, hospitalization, or pneumonia documented by the student health center or a doctor), or the birth of your child. Otherwise 10 points (10%) will be deducted from the grade for the paper for each day it is late.

Brief Lab Reports (10 points each). The lab reports are a brief, one-page synopsis of the purposes and procedures of the lab each week. A paper copy is due the following Tuesday after the lab. No labs are held on exam dates. You must use the lab report from available from the class website at *http://web.pdx.edu/~newsomj/pmclass*. Please see the "Instructions for Assignments" handout for more detail on requirements and grading. If you must miss a lab for any reason, you may make it up on your own by acquiring the lab instructions from me (via email), doing the analyses, and turning in the lab write-up (and output or other materials) on time. Late lab reports will only be accepted without penalty if there is an extenuating circumstance, such as a family emergency (e.g., death in the family), you have a serious health issue (e.g., flu, hospitalization, or pneumonia documented by the student health center or a doctor), or the birth of your child. Otherwise, 2 points (20%) for the lab reports will be deducted from the grade for the paper for each day it is late.

Attendance
I do not take attendance or explicitly include attendance or participation in your grade, but a substantial portion of each exam will concern lecture (and any guest lecture) material. Missing even a single class will inevitably impact your grade substantially. Missing lab reports or late assignments have additional impacts on your grade, of course.

Academic Conduct
Students are expected to abide by the Portland State University code of conduct in terms academic integrity and behavior (https://www.pdx.edu/dos/psu-student-code-conduct). Infractions of academic integrity include cheating on exams, buying or selling course assignments or exams, and plagiarism (using another writer's words without quoting and attribution). Students are encouraged to contribute to the discussion, think aloud, and voice their opinion, but I also expect interactions to be respectful, including listening to others, avoiding interruptions, not monopolizing the discussion, and justly treating fellow classmates regardless of race, ethnicity, nationality, gender, sexual orientation, disability, age, or socio-economic status.

Disabilities
I am happy to make any necessary arrangements with students who have a disability and are in need of academic accommodations. If you have not done so already, please contact the Disability Resource Center, 116 Smith Memorial Student Union, http://www.pdx.edu/drc/, Email: drc@pdx.edu, for assistance and any testing arrangements. I would appreciate it if you would check with me as soon as possible to discuss any needed accommodations and to make sure that I have received a faculty notification letter. If any aspects of instruction or course design result in barriers to your inclusion or learning, please let me know

Topics, Reading Schedule, and Important Dates

Please make sure you read the assigned material and be prepared to discuss it before class.

Week 1
4/4 First class meeting
4/6 Chapter 1: Psychometrics and the Importance of Psychological Measurement

Week 2
4/11 Chapter 2: Scaling; **Lab 1 report due**
4/13 Chapter 3: Individual Differences and Correlations

Week 3
4/18 Chapter 3: Individual Differences and Correlations; **Lab 2 report due**
4/20 Chapter 5: Reliability

Week 4
4/25 Chapter 6: Empirical Estimates of Reliability; **Lab 3 report due**
4/27 **Exam 1**

Week 5
5/2 Chapter 7: Importance of Reliability
5/4 Chapter 7: Importance of Reliability

Week 6
5/9 Chapter 4: Test Dimensionality and Factor Analysis (up to the section "Factor Analysis: Examining the Dimensionality of a Test"); Chapter 8: Validity: Conceptual Basis; **Lab 4 report due**
5/11 Chapter 9: Estimating and Evaluating Convergent and Discriminant Validity Evidence; **Attitude or personality psychometric project due**

Week 7
5/16 Chapter 9: Estimating and Evaluating Convergent and Discriminant Validity Evidence; **Lab 5 report due**
5/18 **Exam 2**

Week 8
5/23 Chapter 10: Response Biases
5/25 Chapter 11: Test Bias

Week 9
5/30 Chapter 13: Generalizability Theory *(Optional section: Conducting and Interpreting Generalizability Theory Analysis: A Two-Facet Design)*; **Lab 6 report due**
6/1 Chapter 14: Item Response Theory and Rasch Models

Week 10
6/6 Chapter 4: Test Dimensionality and Factor Analysis (beginning with the section "Factor Analysis: Examining the Dimensionality of a Test"); **Lab 7 report due**
6/8 Chapter 12: Confirmatory Factor Analysis *(optional section: CFA and Reliability)*; **Knowledge or ability test psychometric project due**

Finals Week
6/13 **Exam 3**, Tuesday, 10:15 AM - 12:05 PM; **Lab 8 report due**

Lab Schedule

Except for weeks in which there is an exam, we will have a lab session on Thursday in 1 Cramer Hall (CH), Th 11:00–11:50. After each of these labs, you will turn in a brief lab report (one page) due the following Tuesday at the beginning of class.

4/6 Lab 1: Writing Attitude Questions (brief lab report due 4/11)

4/13 Lab 2: SPSS and Data Entry (brief lab report due 4/18)

4/20 Lab 3: Descriptive Analyses, Correlations, and Composites (brief lab report due 5/2)

4/27 No lab. Exam 1.

5/4 Lab 4: Reliability Analysis (brief lab report due 5/9)

5/11 Lab5: Validity (brief lab report due 5/23)

5/18 No lab. Exam 2.

5/25 Lab 6: Bias (brief lab report due 5/30)

6/1 Lab 7: IRT (brief lab report due 6/6)

6/8 Lab 8: EFA (brief lab report due 6/13)