Psy 495 Psychological Measurement
Syllabus Winter 2025

Instructor
Jason T. Newsom, Ph.D., Professor, Department of Psychology. Office: 317F Cramer Hall Center (3rd floor), Email: newsomj@pdx.edu. Office hours: Wed 1:00–2:00 PM via Zoom link (see Canvas page) and by appointment.

Meeting Times and Location
Class: Tu-Th 2:00–3:50 PM, 269 Cramer Hall (CH). Lab sessions: Fariborz Maseeh Hall B152, Th 3:00–3:50 AM (approximately).

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 testing, and item and test development. There will be both lecture and lab portions required. Prerequisite: Stat 243 and 244 (or Soc 396 and Psy 320), 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. Please see earlier email from me on sources for inexpensive used copies.

Course website
I will post any lecture materials for the course website located at: http://web.pdx.edu/~newsomj/pmclass Including syllabus, some of the slides from each class, instructions for the written assignments, and lab report forms. The Canvas website for the course, https://canvas.pdx.edu/courses/97344, will be used for course for quizzes and lab reports. *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 quizzes (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).

Quizzes (100 points each)
There will be three noncumulative quizzes (dates on the schedule below), each covering the material in readings and lectures in the section preceding the quiz date. Quizzes will be taken on the Canvas course page and will be available for several days for one continuous attempt. Each quiz 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 quiz covers the readings and lecture through the last class (i.e, Tuesday of that week) before the quiz beginning date. I do not give out any written study guides or hold review sessions. Make-up quizzes will only be given when there is a family emergency (e.g., death in the family), you have a serious health issue (e.g., Covid, 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., Covid, 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. An electronic copy uploaded to Canvas is due the following Tuesday after the lab by 2 PM. You must use the lab report form that is available from the class website at http://web.pdx.edu/~newsomj/pmclass and the link on the Canvas page at https://canvas.pdx.edu/courses/97344. 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., Covid, flu, hospitalization, or pneumonia), 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 quiz 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/dean-student-life/academic-misconduct). Infractions of academic integrity include cheating on quizzes, copying someone else's work, stealing, buying or selling course assignments or quizzes, and plagiarism (using another writer's words without quoting and attribution). Note that use of AI on assignments may result in some of these violations because AI regularly borrows existing work.

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.

Diversity, Equity, and Inclusion
Portland State University's Department of Psychology is fully committed to diversity, equity, and inclusion. Our department fosters a vibrant intellectual environment in which human diversity is recognized and valued in all its forms. We support learning, research, and outreach activities that promote the values of diversity, equity, and inclusion. My goal is to create a learning environment that is accessible, equitable, inclusive, and welcoming. I am committed to fostering mutual respect and full participation for all students. If there are any incidents or conditions that you feel do not conform to these goals, please discuss them with me or you can consult with the Dean of Student Life office, https://www.pdx.edu/dean-student-life/psu-cares.

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, https://www.pdx.edu/disability-resource-center/, 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.

Schedule and Important Dates

Please make sure you read the assigned material and be prepared to discuss it before class. Labs are held Thursdays in the second half of class (3:00 to 3:50) usually in Fariborz Maseeh Hall B152.

Week 1
      1/7 First class meeting
      1/9 Chapter 1: Psychometrics and the Importance of Psychological Measurement
            Lab 1: Writing Attitude Questions
Week 2
      1/14 Chapter 2: Scaling; **Lab 1 report due**
      1/16 Chapter 3: Individual Differences and Correlations
            Lab 2: Qualtrics
Week 3
      1/21 Chapter 3: Individual Differences and Correlations; **Lab 2 report due**
      1/23 Chapter 5: Reliability
            Lab 3: General overview of SPSS and R; Data Entry
Week 4
      1/28 Chapter 6: Empirical Estimates of Reliability; **Lab 3 report due**
      1/30 Chapter 6: Empirical Estimates of Reliability
            Lab 4: Descriptive Analyses, Reliability
            Quiz 1: 1/30-2/4
Week 5
      2/4 Chapter 7: Importance of Reliability; **Lab 4 report due**
      2/6 Chapter 7: Importance of Reliability
            Lab 5: Reliability II
Week 6
      2/11 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 5 report due**
      2/13 Chapter 9: Estimating and Evaluating Convergent and Discriminant Validity Evidence
            Attitude or personality psychometric project due
            No Lab 6
Week 7
      2/18 Chapter 9: Estimating and Evaluating Convergent and Discriminant Validity Evidence
      2/20 Chapter 9: Estimating and Evaluating Convergent and Discriminant Validity Evidence
            Lab 7: Correlation and Regression for Investigating Validity
            Quiz 2: 2/20-2/25
Week 8
      2/25 Chapter 10: Response Biases; **Lab 7 report due**
      2/27 Chapter 11: Test Bias
            Lab 8: Bias
Week 9
      3/4 Chapter 13: Generalizability Theory *(Optional section: Conducting and Interpreting Generalizability Theory Analysis: A Two-Facet Design)*; **Lab 8 report due**
      3/6 Chapter 14: Item Response Theory and Rasch Models (optional sections: "Two-Parameter Logistic Model" and "Graded Response Model")
            Lab 9: Item Response Theory (IRT)
Week 10
      3/11 Chapter 4: Test Dimensionality and Factor Analysis (beginning with the section "Factor Analysis: Examining the Dimensionality of a Test"); **Lab 9 report due**
      3/13 Chapter 12: Confirmatory Factor Analysis *(optional section: CFA and Reliability)*
            Knowledge or ability test psychometric project due
            No lab 10
Finals Week
      3/17-3/21 **Quiz 3 3/13-3/17**