Tests and Measurement

PSY 510 – Fall 2020

Prof. Katie Corker
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Section 01, T/Th 1:00-2:50, Online & Kindschi Hall 2207

Remote Office Hours: Monday-Thursday 3:15-4:15pm
Appointments during Office Hours:
https://katiecorker.youcanbook.me/
Appointments at other times (email to request)

Note: This course is subject to the GVSU policies listed at
http://www.gvsu.edu/coursepolicies

I. Course Overview

Measurement is central to the role of a school psychologist. As you progress through your degree, you will be learning how to collaborate with teachers and other school staff to support students' success. **Above all, a school psychologist relies on data, including data from tests and measurements, to inform decisions about how to best support students.**

In this class, you will learn the foundational skills you need to interact effectively with data from tests and measures. These skills include understanding how to evaluate the quality of a test or measurement, how to interpret test scores, and how to critically compare and contrast possible tests or measures, as well as how the tests and measures you use as a school psychologist were developed. You will also learn how to communicate about tests and measures orally, in writing, and using tables and figures.

II. About Your Instructor

A. Contacting me. The best way to contact me is via e-mail. I typically check e-mail throughout the day, but only during normal business hours (9 am – 5 pm). If you send me an email in the evening, you should not expect to get a response until the next business day.

B. Office hours. Office hours are listed above, but I am

available to meet with you during other times, if you make an appointment with me by e-mail.

C. **My expertise.** I was trained as a personality and social psychologist with a specialization in quantitative methods. I earned a Ph.D. and a master's degree from Michigan State University and a bachelor of arts from the University of Northern Iowa. I have conducted research in the areas of motivation, goal setting, academic achievement, and the role of personality in influencing all of these variables.

III. Required Reading & Supplies

Required Text:
Furr, R. M. (2017). *Psychometrics: An introduction (3rd ed.)*. Los Angeles: Sage. ISBN: 978-1506339863

You may also use the previous edition:
Furr, R. M., & Bacharach, V. R. (2014). *Psychometrics: An introduction (2nd ed.)*. Los Angeles: Sage. ISBN: 978-1452256801

Required Readings: Additional required readings will be posted on the course website.

Technology: A personal computer with web camera, speakers or headphones, and a microphone is needed. A .pdf reader (e.g., Adobe reader or Preview), a word processing program (e.g., Microsoft Word), and a spreadsheet program (e.g., Microsoft Excel) are also needed. All GVSU students can get the Microsoft Office Suite for free.

IV. Learning Objectives

[From the syllabus of record] Students in this course will learn to:

1. Critically appraise a wide range of tools for measuring educational and psychological constructs.
2. Combine knowledge of basic statistical concepts in the administration, scoring, and interpretation of tests.
3. Select appropriate assessment tools based on knowledge of measurement concepts (including reliability and validity) .
4. Compare and contrast a variety of assessment tools (achievement, cognitive, interest inventories, personality

assessment, life skill assessments, etc.) in terms of strengths and weaknesses.
5. Recommend specific assessment tools to evaluate student characteristics.
6. Defend ethical and legal standards related to assessment.
7. Evaluate and prioritize guidelines for assessing culturally and linguistically diverse individuals.

This course is designed to help students develop their skills in the following areas:

A. **Assessment use and evaluation.** Students will learn how to evaluate the quality of a test or measurement and how to interpret test scores. Emphasis will be on interpreting tests and measurements in the context of schools and in psychological research.

B. **Assessment creation.** Students will learn how professional tests are created. You will learn how to write high quality items and to combine those items into tests and measures. You will learn the basic conceptual underpinnings of test construction, and you will use statistical analysis (including factor analysis) to craft and refine high quality tests and measures.

C. **Quantitative reasoning.** Students will use statistics to interpret and evaluate data from tests and measures. This course emphasizes descriptive statistics (measures of central tendency, variability, and correlation), as well as measures of test reliability and validity.

D. **Oral presentation and civil discourse.** Oral communication is a critical skill for success in your life at GVSU and beyond. Students in this course will work to improve their formal presentation skills, as well as hone their ability to discuss the results of tests and measures in a sensitive and ethical way. Upon completing this course, students should be able to verbally explain what a score on a test or measurement means, to an untrained audience. They should be able to explain its meaning in multiple ways.

It is the instructor’s goal that students become proficient in each of these key areas. Evaluations are designed to assess the extent to which proficiency has been attained.

V. Evaluation

A. Measurement Lab Exercises. Measurement is not a passive activity - the best way to learn about measurement is to actively work on measurement problems. Therefore, this course will feature laboratory exercises designed to be hands on applications of important course concepts. The final lab exercise will be cumulative and combine skills learned in the earlier exercises.

B. Quizzes and Exams. Quizzes are a low stakes opportunity to refine your understanding of important course concepts. We will use frequent quizzing to help you check your progress. Additionally, there will be two midterm exams and one cumulative final exam. The purpose of midterms is to give early feedback on your understanding of course material and make sure you are keeping up with the material. Exams will be a mix of multiple choice and short-answer format. The dates of the exams are firm – I will not change them at the last minute. I intend for exams to be taken in person, but they will be administered remotely (during class time) if health and safety require it.

C. Test Review Presentation & Handout. You will work with classmates and review a published standardized test commonly used to assess students in basic skill areas. You will use the test manual, as well as the publisher's information online, scientific articles, and other resources available from graduate faculty. As a group, you will prepare a handout describing your review and give a 30-35 minute oral presentation to the class.

D. Class Format. This course is organized into five two-week long modules. Each two-week long module contains the equivalent of eight hours of in-person content. We are working on a compressed schedule to complete the course in 10 weeks instead of 14. In each module, you will (on your own time) view recorded lectures and complete quizzes. You will additionally do course readings. Each module also contains a lab exercise that involves hands-on practice to help deepen your understanding of course concepts. Typically, we ask

students to plan for 3 hours of work outside of class for every 1 hour in class. This means that you should anticipate 16 hours of work on this course per week for the full 10 weeks (4 hours "in" class and 12 hours outside of class). It will be intense, but I am confident that you can do it.

E. Attendance. The majority of this class can be completed asynchronously (on your own schedule). We will plan to meet in person once per module to facilitate completion of lab exercises. These sessions are optional; lab exercises can be completed at home. Additional times are given in the calendar below for open Q&A during class time. Attending these sessions (on Zoom) is optional, but they will be a chance to ask questions of me and each other in real time. Class presentations will be held as scheduled (on Zoom), with rescheduling allowed only in case of emergency.

F. Extra credit. Students may complete measure critiques for extra credit, worth up to 5 points each. Directions are on the course website. Students may earn no more than 20 points of extra credit through any combination of extra credit possibilities. All extra credit is due, via Blackboard, no later than 5 pm on 11/5/20.

G. Late policy. Students should strive to submit work on time. Unless otherwise noted above, the late policy for written work is as follows. Work may be submitted early, via Blackboard, for any assignment. Each student is allotted up to **3 grace days**, to be used at your discretion, throughout the term. Each 24 hour period an assignment is late counts as one grace day. No work may be submitted after the official close of the semester without an approved course extension. (Such extensions are granted in only the most extreme, and documented, circumstances.)

H. Point breakdown by category.

ASSIGNMENT	POINTS	PERCENT
Lab Exercises (5x)	30*5 = 150	25%
Test Review: Handout & Presentation	80	13%

Quizzes	70	12%
Midterm Exams (2x)	75*2 = 150	25%
Final Exam	150	25%
Extra Credit	Up to 20 pts.	3%

VI. Grading Scale

GRADE	POINTS	PERCENT
A	555-600	93%-100%
A-	537-554	90%-92%
B+	519-536	87%-89%
B	495-518	83%-86%
B-	477-494	80%-82%
C+	459-476	77%-79%
C	435-458	73%-76%
C-	417-434	70%-72%
D+	399-416	67%-69%
D	358-398	60%-66%
F	<357	<60%

THESE ARE FIRM CUT-OFFS. I round up to the nearest percent (e.g., 86.5% rounds up to 87% and equals a B+, but 86.4% rounds down to 86% and equals a B). The point categories listed above reflect this rounding. DO NOT attempt to negotiate grades with me. It is your responsibility to make sure your grade ends up where you want it to be. I have provided ample extra credit opportunities for students who wish to improve their grades. Students who want to improve their *learning* (and therefore their grades) should see me *early* in the class for assistance. I will *not* negotiate grades with you, but I will do everything in my power to help you put in the necessary work to be as successful as you desire.

VII. Disability Accommodation

Any student in this class who has special needs because of a learning, physical, or other disability, please contact me and Disability Support Services (DSS) at (616) 331-2490. It is the student's responsibility to request assistance from DSS.

VIII. Academic Honesty

Unless otherwise noted, all work for this course should be independently completed. You are not allowed to work together on quizzes or exams. Students may work together on lab exercises, but each student must write their own answers in their own words. Students should take special care to provide proper citation of sources when submitting written work. Adopting words, passages, or ideas without citation is plagiarism and will be treated as such per GVSU guidelines. Furthermore, students should not self-plagiarize, that is, reuse their own work from another course.

For additional details on academic honesty, please see the student code.

IX. Our Social Contract

In order for this course to function optimally, we both have parts to play, and when we each do our part, everyone benefits.

As professor, I promise to always do my very best to select interesting and thought-provoking course material. I will prepare course materials to the best of my abilities, and I will make decisions about the course according to the learning goals I have outlined here. I will act fairly – holding every student to the same high standard and providing equal opportunities for success.

As student, you promise to prepare diligently for class, to always contribute to the best of your abilities, to never cheat or act dishonestly, and to treat your classmates and me with the highest respect. You will do your best to attend class and be on time. You will not ask me to grant you special privileges that aren't available to the rest of your classmates, in order that I may adhere to my promise to be fair and just to all of you.

X. Course Calendar

In-person days (1:00-2:50 pm, Kindschi 2207):
Labs: 9/8, 9/22, 10/6, 10/20 (due by 10 pm at the close of that unit)
Exams: 9/24, 10/22, 11/10

Virtual, synchronous days (Zoom):
Open Q&A (optional):
9/3, 9/10, 9/17, 10/1, 10/8, 10/15, 11/5, 1:00-2:00 pm
Presentations: 10/29, 1:00-2:50 pm

Unit	Date	Topic	Reading/Homework/Due
1	8/31 – 9/13	Introduction Latent Variables Statistics Review Testing Ethics	**Read:** Furr Ch. 1-3; Coaley Ch. 10 (Opt. Furr Ch. 11) **Lab:** Scoring Lab (9/8, in-person, due 9/13) **Quiz:** Quiz 1a, 1b, 1c
2	9/14 – 9/27	Reliability & Validity	**Read:** Furr Ch. 5-9 **Lab:** Reliability Lab (9/22, in-person, due 9/27) **Quiz:** Quiz 2a, 2b, 2c, 2d
Ex1	9/24	Exam 1 (9/24, in-person)	
3	9/28 – 10/11	Constructing New Tests Ability Testing *Introduce Test Review*	**Read:** Furr Ch. 4; Ritchie Ch. 1-2 **Lab:** Ability Testing Lab (10/6, in-person, due 10/11) **Quiz:** Quiz 3a, 3b, 3c, 3d, 3e
4	10/12 – 10/25	Personality & Rating Scales	**Read:** Funder, Ch. 3-4 **Lab:** Personality/Behavior Lab (10/20, in-person, due 10/25) **Quiz:** Quiz 4a, 4b
Ex2	10/22	Exam 2 (10/22, in-person)	
5	10/26 – 11/8	Surveys & Sampling Screeners Sensitivity/ Specificity	**Read:** Schwarz, 1999; Furr Ch. 10; Glover & Albers, 2007 **Lab:** DASS Lab (async, due 11/8) **Quiz:** Quiz 5a, 5b, 5c, 5d
Pre	10/29	Test Review Presentations (Zoom, 10/29; Turn in Info Sheets & Slides on BB)	
Fin	11/10	Final Exam (11/10, in-person)	

XI. Advanced Readings (Optional, Supplementary)

Introductory Issues (Unit 1)

Borsboom, D. (2006). The attack of the psychometricians. *Psychometrika, 71*, 425-440.

Meehl, P. E. (1993). Four queries about factor reality. *History and Philosophy of Psychology Bulletin, 5*, 4-5.

Reliability and Validity (Unit 2)

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52, 281–302.

Loevinger, J. (1957). Objective tests as instruments of psychological theory. *Psychological Reports, 3*, 635-694.

Constructing New Tests and Measures (Unit 3)

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.

Simms, L. J. (2008). Classical and modern methods of psychological scale construction. *Social and Personality Psychology Compass, 2,* 414-433.

Simms, L. J., & Watson, D. (2007). The construct validation approach to personality scale construction. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.) *Handbook of research methods in personality psychology* (pp. 240-258). New York: Guilford Press.

Ability Testing (Unit 3)

Deary, I. J. (2012). Intelligence. *Annual Review of Psychology, 63*, 453-482.

Gottfredson, L. (1997). Why *g* matters: The complexity of everyday life. *Intelligence, 24*, 79-132.

Johnson, W., te Nijenhuis, J., Bouchard, Jr., T. J. (2008). Still just 1 *g*: Consistent results from five test batteries. *Intelligence, 36*, 81-95.

Personality Testing (Unit 4)

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.) *Handbook of personality: Theory and research* (pp. 114-156). New York: Guilford Press.

King, L. A. (1995). Wishes, motives, goals, and personal memories: Relationship of measures of human motivation. *Journal of Personality, 63*, 985-1007.

Furr, R. M., & Funder, D. C. (2007). Behavioral observation. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.) *Handbook of research methods in personality psychology* (pp. 273-291). New York: Guilford Press.

Surveys, Item Construction, Response Biases (Unit 5)

Krosnick, J. A., & Presser, S. (2010). Question and questionnaire design. In P. V. Marsden & J. D. Wright (Eds.) *Handbook of survey research* (2nd ed., pp. 263-313). United Kingdom: Emerald Group Publishing Limited.

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist, 54,* 93-105.

Huang, J. L., Curran, P. G., Keeney, J., Poposki, E. M., & DeShon, R. P. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business and Psychology, 27*, 99-114.