Tests and Measurement
PSY 410 – Fall 2018
Prof. Katie Corker
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Section 01, T/Th 2:30-3:45 pm, Lake Ontario Hall 174

Prerequisites: PSY 101 or HNR 234, and STA 215 or STA 312

Office Hours: T/Th 11am-12pm, Weds 1-3pm
Appointments during Office Hours:
https://katiecorker.youcanbook.me/
Appointments at other times (email to request)

Office Location: 2128 Au Sable Hall
Office Phone: (616) 331-2932 (but email is recommended)

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

I. Course Overview

Measurement is all around us. Feeling under the weather? Your doctor administers a diagnostic test. Want to get into grad school? A standardized *ability test* will likely be required first. That fresh-out-of-the-box job after college? Odds are good that you'll be asked to take a battery of tests (including a *personality inventory*) as part of the interview process. Individuals also use *surveys* in many domains to inform their decision making. In addition to all of these applied uses, behavioral scientists (including psychologists) use measurements to *assess psychological states* in order to ask and answer research questions.

This course is designed to develop your skills as an *assessment consumer*, as well as an *assessment creator*. My claim: Everyone will be better served in their future lives by learning how to evaluate the quality of a test or measurement and how to interpret test scores. Many of you will also have to create and analyze instruments in some capacity in the future (e.g., as a teacher, as a psychologist, in industry, in non-profit community work). It is therefore not hyperbole when I say: this may be one of the most useful courses you take during your time at

GVSU.

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

Required Text: Furr, R. M., & Bacharach, V. R. (2014). *Psychometrics: An introduction (2nd ed.)*. Los Angeles: Sage. ISBN: 978-1-4522-5680-1

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

IV. Learning Objectives

[From the syllabus of record] Upon completion of the course students will be able to:

1. Describe the conceptual foundations of psychometric theory.
2. Examine theoretical, practical, and ethical concerns that arise when using psychological tests and measures.
3. Apply acquired knowledge to critically review and evaluate psychological measures.

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

A. **Assessment use and consumption.** 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 everyday settings (schools, the workplace, the media) and in psychological research.

B. **Assessment creation.** Students 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 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. **Graphical displays and interpretation.** Students will learn to interpret graphical displays of data, as well as produce graphical displays and figures for their lab reports.

E. **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 in these areas 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. There will be 5 exercises over the course of the term, and we will drop the lowest scoring exercise (only the top 4 will be scored). The penalty for late work is described below. The labs will be begun (and some could possibly be completed) during class time. There are no make-ups (again, we drop the lowest exercise).

B. Exams. 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 on you at the last minute.

C. Presentation. In small groups, you will construct an instrument and present the instrument to the class. This project will be done in groups of 3-5. Team member contributions may be considered in the project grade.

D. Assessment Revision & Critique. Groups will work together to critique and refine their newly devised assessments. Students will write a brief analysis of their revisions and critiques in the context of their groups.

E. Attendance. I expect that you will attend all classes and participate actively. If you are absent from class, it is your responsibility to make up any missed material by consulting a classmate. Only then may you make an appointment to meet with me to ask follow up questions. Students *must* come to office hours prepared; students who are habitually absent (> 2 classes missed) should expect limited access to office hours.

<u>There are no make-up presentations.</u> There are no make-up exams, except in the following cases:

1. Excused absence for approved extracurricular/ religious holiday: Students should make arrangements with me at least one week before the

exam to take the exam early.

2. Excused absence for illness: Students with documented illness or injury should (1)notify me immediately and provide documentation, and (2)make arrangements to take the exam at the soonest possible opportunity, but no later than one week following the scheduled exam. I reserve the right to give the exam in an alternative form.

F. Homework & Participation. This component of the course will be a combination of small assignments and an assessment of your contribution to (and attendance in) class discussions.

G. Extra credit. Students may complete measurement critiques for extra credit, worth up to 5 points each. Directions are on the course website. Furthermore, students may attend psychology research talks in the department or on campus and then write a one page reflection to be submitted on Blackboard no later than 7 days after the talk. Reflections are worth up to 5 points each. 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 12/6/18.

H. Late policy. 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. **Work that is submitted late and beyond the allotment of grace days FOR ANY REASON receives a two full letter grade (20%) deduction (e.g., a paper that earns an 80% is worth a 60% if 0-24 hours late; a paper that earns an 80% is worth a 40% if 24-48 hours late).** Furthermore, 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.)

I. Point breakdown by category.

ASSIGNMENT	POINTS	% OF TOTAL
Lab Exercises (4x)	30*4 = 120	24%
Presentation	20	4%
Assessment Revision	20	4%
Participation	10	2%
Midterm Exams (2x)	90*2 = 180	36%
Final Exam	150	30%
Extra Credit	Up to 20 pts	4%

VI. Grading Scale

GRADE	POINTS	PERCENT
A	463-500	93%-100%
A-	448-462	90%-92%
B+	433-447	87%-89%
B	413-432	83%-86%
B-	398-412	80%-82%
C+	383-397	77%-79%
C	363-382	73%-76%
C-	348-362	70%-72%
D+	333-347	67%-69%
D	313-332	63%-66%
D-	298-312	60%-62%
F	<297	<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. Furthermore, if you have a disability and think you will need assistance evacuating this classroom and/or building in an emergency, please make me aware so that the university and I can develop a plan to assist you. 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. 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.

The following are statements provided by the university and can be found in the Student Code, Sections, 223.00 and 223.01.

"Students will do original work and will not take or receive the efforts of another person on any test or assignment, use unauthorized resources on quizzes or tests, plagiarize, or give/sell other students papers or assignments not authorized by the instructor. You are responsible for making yourself aware of and for understanding the policies and procedures that pertain to academic integrity. To that end, be sure to familiarize yourself with the GVSU Student Code (Section 223.00 and 223.01) related to academic integrity. Furthermore, be sure to reference sources at all times. If you are uncertain about such an issue prior to submission of an assignment, project, or test, please see me so we can eliminate that uncertainty.

No student shall knowingly plagiarize or copy the work of another person and submit it as his/her own. Offering the work of someone else as one's own is plagiarism. Any ideas or material taken from another source for either written or oral presentation must be fully acknowledged. The language or ideas taken from another may range from isolated formulas, sentences, or paragraphs to entire articles copied from the internet, books, periodicals, speeches, or from the writing of other students. The offering of materials assembled or collected by others in the form of projects or collections without acknowledgement also is considered plagiarism. In short, any student who fails to give credit in written or oral work for the

ideas or materials that have been taken from another is guilty of plagiarism."

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

Wk.	Date	Topic	Reading/Homework/Due
1	8/28	Introduction	**Read:** F&B Ch. 1
	8/30	Latent Variables & Psychometrics	**Read:** F&B Ch. 2 *Drop by 9/1 for 100% refund*
2	9/4	NO CLASS	LABOR DAY
	9/6	Statistics Review & Excel Basics	**Read:** F&B Ch. 3
3	9/11	Statistics Lab	*Lab Day*
	9/13	Reliability	**Read:** F&B Ch. 5, 6, 7
4	9/18	Reliability & Validity	**Due:** Statistics Lab **Read:** F&B Ch. 8
	9/20	Validity	**Read:** F&B Ch. 9
5	9/25	Reliability Lab	*Lab Day*
	9/27	Testing Ethics	**Read:** Coaley Ch. 10 (BB)
6	10/2	Catch Up & Review	**Due:** Reliability Lab
	10/4	EXAM 1: Ch. 1-3, 5-9,	**EXAM 1**

		Coaley Ch. 10	
7	10/9	Constructing New Tests	**Read:** F&B Ch. 4
	10/11	Constructing New Tests	**In-Class:** Write Items & Program Survey
8	10/16	Ability Testing	**Read:** Ritchie (2015), Ch. 1-2
	10/18	Ability Testing	-
9	10/23	Ability Testing Lab	*Lab Day*
	10/25	Personality Testing	**Read:** Funder, Ch. 4 *Drop by 10/27 for W*
10	10/30	Personality Testing	**Due:** Ability Testing Lab
	11/1	Personality Testing Lab	*Lab Day*
11	11/6	Open consultations	Meet: TBD (Computer Lab)
	11/8	Data Analysis	*Lab Day*
12	11/13	Other Kinds of Tests	**Read:** Funder Ch. 3 **Due:** Personality Testing Lab
	11/15	EXAM 2: Ch. 4; Ritchie Ch. 1-2; Funder Ch. 3-4	**EXAM 2**
13	11/20	Surveys & Sampling	**Read:** Schwarz (1999), F&B Ch. 10
	11/22	NO CLASS	THANKSGIVING
14	11/27	Survey Lab	*Lab Day*
	11/29	Presentations	**Due: PRESENTATIONS**
15	12/4	Assessment Critiques & Revisions	*Laptop Day* **Due:** Survey Lab
	12/6	Assessment Critiques & Revisions	*Laptop Day*
16	Tues. 12/11	FINAL EXAM	**Due:** Assessment Revisions (BB) **CUMULATIVE FINAL EXAM (4-6pm), LOH 174**