



PSY 330H1 Psychological Measurement

Mondays from 10:00 am-1:00 pm. In person in RW 143 (Ramsey Wright Laboratories). Online synchronous option (see class structure below)

Instructor and Teaching Assistant Information

Instructor:

Amanda Sharples, Ph.D.
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Instructor Office hours:

Online Tuesdays and Thursdays (see top of the modules section of the course website for calendar and link to zoom meeting room)

Teaching Assistant:

Grace Wang
gr.wang@mail.utoronto.ca
office hours: by appointment

Course Description and Objective

How do we develop valid and reliable psychological measures?

What is the difference between measures of abilities, personality, and clinical conditions?

What should we consider when developing measures for constructs in psychological research?

What are some advanced statistical methods that are important to understand?

This course will focus on answering the questions above. These questions are essential to understanding how we assess individual differences and how we create valid and reliable measures to capture constructs of interest in psychological research. We will focus on developing a solid understanding of both psychological measurement for research and psychological assessment across domains including personality, mental health, education, and occupational settings.

Learning Objectives:

- By the end of this course, you should understand the process of scale development from beginning to end
- By the end of this course, you should be able to think critically about the way we operationalize constructs in psychological research

- By the end of this course, you should have a solid understanding of reliability and validity, the difference between the two, and why these are so important to the development of psychological measures.
- By the end of the course you should understand the basics of how to administer a psychological assessment and ethical practices.
- By the end of this course, you should have improved your time-management skills and ability to respond appropriately to constructive feedback.

Class Structure: Classes will consist of traditional lecture, activities, and group discussion. There will be a focus on applying what we are learning as understanding the purpose and method of psychological measurement and assessment is inherently a hands-on process. Class will be in-person, but there will be an online synchronous option and lectures will be recorded for those that cannot attend. Here is the zoom link for all the online synchronous meetings: Join URL: <https://utoronto.zoom.us/j/84043438845>
Passcode: measure

Note about prerequisites: It is your responsibility to ensure that you have met *all* prerequisites listed in the Psychology section of the A&S Calendar for this course. If you lack any prerequisites you WILL BE REMOVED. No waivers will be granted.

Course Resources

Required Readings

Assigned Empirical Articles and Chapters: See lecture schedule. All articles have been made available on Quercus by the University of Toronto Library. The textbook is open-source will be linked under the syllabus section of the course website. The link can also be found below:
<http://noba.to/r39z2jca>

There are links to chapters for other textbooks, available in the course syllabus.

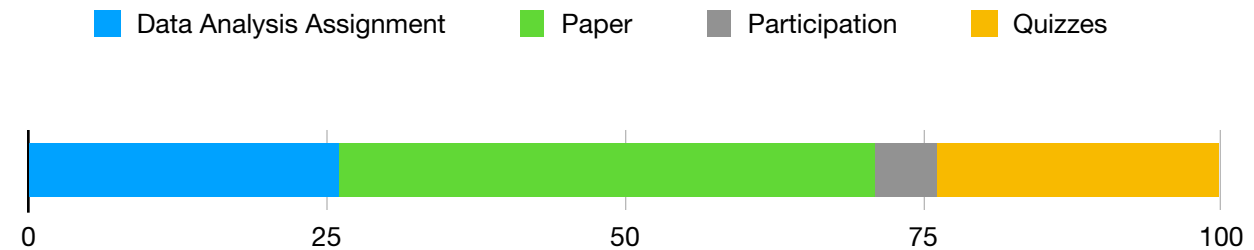
Quercus: All course materials will be made available on the Quercus website, including lecture slides, lecture videos, announcements, and supplementary materials. You are advised to regularly check the announcements section of the Quercus website because you are solely responsible for staying on top of all course announcements made through Quercus.

Ongoing feedback: I've created a survey that students can fill out anonymously after each class to provide me with feedback on lectures. This gives you the opportunity to let me know if I am going through the material too quickly, if there is a particular concept you are really struggling with, if there is something that could be improved

about the structure of each class, etc. The link to this survey is available on Quercus. I can't promise that I will be able to touch on every concern expressed in the feedback surveys. I will be looking for common concerns being expressed by students.

How to get help with the course: The fastest way to get help with the course is to book a student hour with me. If you have a short question that can be answered via email, then please email myself or the TA. Before emailing, however, please check the course syllabus as most of the important information about the course can be found there.

Course Evaluation



<i>Component</i>	<i>Date</i>	<i>Weight</i>
Participation	Each week.	5%
Assignment Outline	October 11th	12%
Data Analysis Assignment	Nov11	26%
Final Assignment and Reflection	Dec 2	33%
Quizzes	Throughout the Term (see schedule below)	24% (3 total worth 8% each)

Participation: Part of your grade will be allocated to participating in weekly discussions. You can participate in person or online via zoom. Attending each lecture and contributing a thoughtful question or response to a question will help you earn full marks.

Final Paper: For this course, you will have to complete a final assignment. You will have the option of one of two assignments to choose from:

Option 1: For this assignment, you will develop a scale to measure a psychological construct of interest. This measure must have multiple items on it and be hypothesized

to measure multiple factors. You will explain how you will develop the measure, determine reliability and validity, how many factors you expect to emerge, and how you will statistically determine these.

Outline: Before submitting the final paper, you will submit an outline. This will allow you to get feedback on your scale idea and process for developing the scale. For the outline, you must include a description of the construct you are measuring, hypotheses about what factors will emerge, some example items for each factor, and bullet point summary of how you will validate the measuring. **This should be about 3 pages, double-spaced. Do not go over the 3 page limit – we will stop reading past this point.**

Final Paper: The final paper should include an introductory paragraph where you describe this psychological construct and why it is important to measure, 1-2 paragraphs explaining how you will develop it, making reference to the final scale (the entire final scale should be included in the appendix), 1-2 paragraphs explaining how you validated the scale, determined the constructs, and determined reliability, and 1-2 paragraphs reiterating the theoretical and practical implications of creating this scale. **This should be a total of 6 pages, double-spaced. Do not go over the 6-page limit - we will not read past this point.**

Option 2: For this assignment, you will consult with a company on a specific issue they need assistance to resolve. This assistance requires expertise in psychological measurement and assessment. You can choose the issue, but here are some examples (e.g, provide a company with advice about which psychological measure to use to recruit for a specific position, provide a clinical counselling practice with advice about which psychological measures to use to accurately diagnose or differentiate between certain conditions).

Outline: Before submitting the final paper, you will submit an outline. This will allow you to get feedback on the problem you propose and the measures you think might be most appropriate. For the outline, you must include a description of the problem, a selection of measures you think they should use and why (can be bullet point), and validity and reliability information about the measures (can be bullet point). **This should be about 3 pages, double-spaced. Do not go over the 3 page limit – we will stop reading past this point.**

Final Paper: The final paper should include an introductory paragraph where you describe this problem and how psychological measurement might solve it, 4-5 paragraphs explaining how you can solve this problem, making reference to the measures that can be used and why (all scales should be included in the appendix). When describing each , you should provide information about the scales reliability and validity. Finally, 1-2 paragraphs reiterating the theoretical and practical implications of using psychological measurement to solve this problem. **This should be a total of 6 pages, double-spaced. Do not go over the 6-page limit - we will not read past this point.**

A few important details: Any citations should be in APA style and there should be a reference list at the end. Both the outline and the final paper should be handed in on Quercus by 11:59pm on the day they are due.

More details on these assignments will be provided in the assignment video, which will be posted under the outline and the final paper.

Data Analysis Assignment: A critical part of the scale development process is using specific quantitative methods to uncover and confirm the structure of the construct you are measuring. To do this, we use exploratory (EFA) and confirmatory factor analyses (CFA). I know data analysis is not *fun* for everyone, but this is important in the process and interpretation of scale development. Also, of all the quantitative methods I have learned and taught I *think* these are some of the most fun. For this assignment, I will distribute some data to you and you will have to run an EFA and CFA in Jamovi (a super easy to use program!). We will dedicate one class to working through some of the assignment together - so if you are nervous about learning an advanced statistical technique please know that your TA and I will be there to help you. Following running your analyses, you will interpret and write up your results and answer a few questions about the process. More details and a rubric will be provided closer to the due date.

Policy on Lateness: I understand life gets challenging and things may come up that make it difficult for you to complete your work on time. I am happy to support you and work with you so that you can successfully complete this course and have a positive learning experience. For most course assignments (Proposal, Data Analysis Assignment, Final Paper), you do not need to contact me so long as your assignment is submitted within 24 hours of the due date. Following this, a 2% late penalty may apply. If you are concerned about meeting a deadline or need assistance making a plan for getting work completed, please contact me as soon as you can so we can work this out together. Please contact me in advance to the due date unless this is not possible.

Specific Medical Circumstances. If you become ill and it affects your ability to do your academic work, consult me right away. Normally, I will ask you for documentation in support of your specific medical circumstances. This documentation can be an Absence Declaration (via ACORN) or the University's Verification of Student Illness or Injury (VOI) form. The VOI indicates the impact and severity of the illness, while protecting your privacy about the details of the nature of the illness. If you cannot submit a VOI due to limits on terms of use, you can submit a different form (like a letter from a doctor), as long as it is an original document, and it contains the same information as the VOI (including dates, academic impact, practitioner's signature, phone and registration number). For more information on the VOI, please see <http://www.illnessverification.utoronto.ca>. For information on the Absence Declaration Tool for A&S students, please see <https://www.artsci.utoronto.ca/absence>. If you get a concussion, break your hand, or suffer some other acute injury, you should register with Accessibility Services as soon as possible.

Quizzes: Throughout the course you will complete 3 quizzes using multiple choice/matching/fill in the blank and short answer style questions. These quizzes will be completed online and you will have 48 hours from the time they are made available to write the quiz, but once the quiz starts it will be timed and you will have 60 minutes to complete it. These will test your general knowledge of the course material including readings and lectures and are meant to make sure you are keeping up with the course content. They are primarily assessing learning goals 1 and 2.

Contesting your grade: Please think carefully before contesting your grade for an assignment or test. Your course instructors and TAs work very hard to mark course assignments and exams as fairly as possible. If you have concerns about how an assignment was graded, you need to submit an official re-grade request form explaining why you think your assignment should be re-graded. This can be found on Quercus under “course materials.” You must send this to the person that graded your assignment (either myself or the TA) within 1 week of receiving your grade. We will review your request but reserve the right to remark the entire paper, which means you could lose marks in other sections.

If there has been a calculation error, please just let myself or the TA know and we will re-calculate your grade immediately.

Using AI: Artificial Intelligence programs like ChatGPT are becoming more common and this has prompted discussions surrounding how they may impact student learning and academic integrity. I have been learning about the pros and cons of using these tools and allowing students to use these tools for assessments and think that these tools may work as a good starting point (e.g., for brainstorming) or summarization, but they should be used carefully. For this course, you may use generative AI programs for the Paper Outline and Final Paper so long as you appropriately cite the program, so that I know where and how this was used. I also recommend that you discuss your experience using this tool in the reflection you submit with your final paper. For the quizzes, you should be submitting work in your own words only and not using generative AI to help you complete these quizzes.

Final grades: While I encourage you to focus on what you are learning in the course rather than on any particular grade you receive, I understand the importance of grades to students and their future pursuits. There are times when a grade we obtain does not align with our goals (I have been there!). Grading is not a perfect process, but your final grade should be a fairly accurate representation of your engagement and performance in the course. Moreover, you are given many opportunities throughout the course to seek help, to work on assessment related activities in class, and to contest grades if you feel they do not adequately reflect the quality of your work. I encourage you to be proactive and seek help throughout the course if there is a particular grade you are working towards. I do not make changes to final grades in the course for the reasons noted above and the fact that requests for final grade increase can lead to systemic biases in academic systems.

Academic Resources

Accessibility Needs: It is very important to me that students with diverse learning needs feel supported in this course. There is no one-size-fits all approach to course design, so I do my best to build in accessible course policies. For example, all students have a 24 hour extension on assessments as noted above under policy on lateness, and you can also approach me if you need additional support. I understand that some students may have accessibility needs, but may not have the documentation to get specific accommodations. I hope that by having these broader policies those students feel supported in this course. I will do everything in my power to ensure that all students have equal opportunities to succeed in the course. If you have a disability/health consideration that may require accommodations, please feel free to approach me and/or Accessibility Services at (416) 978 8060; accessibility.utoronto.ca.

Departmental Guidance for Undergraduate Students in Psychology: The Department of Psychology recognizes that, as a student, you may experience disruptions to your learning that are out of your control, and that there may be circumstances when you need extra support. Accordingly, the department has provided a helpful guide to clarify your and your instructor's responsibilities when navigating these situations. This guide consolidates Arts & Science Policies for undergraduate students in one place for your convenience. As an instructor in the department, I will frequently consult with these recommendations when providing you with support, and I recommend that you also consult it to learn more about your rights and responsibilities before reaching out to me.

Religious Accommodations: As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of cultural and religious traditions. I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity due to a religious observance, please let me know as early in the course as possible, and with sufficient notice, so that we can work together to make alternate arrangements.

Writing: A key set of skills you are developing as a student are your communication skills, including written communication. Understanding how to communicate clearly is essential for many career paths. The university provides its students with a number of resources to help them develop these skills. For more information on campus writing centers and writing courses, please visit <http://www.writing.utoronto.ca/>. More info on writing resources available at U of T will be posted on Quercus. I highly recommend that you make use of these. Moreover, I'm more than happy to give you feedback on your writing during my office hours, so feel free to stop by.

Academic Integrity and Plagiarism: Academic misconduct will be taken very seriously in this class. Cheating and plagiarism will not be tolerated and will be

reported through the official university channels. Please refer to the University of Toronto's Code of Behaviour on Academic Matters for more information about what constitutes academic misconduct and how academic misconduct will be dealt with:<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>

Mental Health and Well-being: As a student, you may experience challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation, financial concerns, family worries and so forth. These factors may affect your academic performance and/or reduce your ability to participate fully in daily activities. All of us benefit from support and guidance during times of struggle; there is no shame in needing help or in asking for help. There are many helpful resources available through your college Registrar or through Student Life (studentlife.utoronto.ca and www.studentlife.utoronto.ca/feeling-distressed). An important part of the University experience is learning how and when to ask for help. Please take the time to inform yourself of available resources and seek assistance from your Teaching Assistant or from me to help learn what supports are available.

PLEASE SEE LECTURE SCHEDULE ON THE NEXT PAGE

Lecture Schedule

I will try my best to stick to this outline, but changes may be made. Changes will be announced on Quercus. All readings can be found in reference list following this page.

Lecture	Date	Topics	Notes
L1	Sept 9	Introduction: What is psychological measurement?	
L2	Sept 16	Scale Construction	
L3	Sept 23	Validity	
L4	Sept 30	Norms and Reliability	Quiz 1 Available Monday, Sept 30th at 2pm and Closed Wednesday, Oct 2 at 11:59pm
L5	Oct 7	Advanced Statistical Techniques in Psychological Measurement	Paper Proposal due Friday, October 11th at 11:59pm
	Oct 14	<i>No Class - Thanksgiving</i>	
	Oct 21	Activity: Focus on the Data Analysis Assignment	
	Oct 28	<i>No Class - Reading Week</i>	
L6	Nov 4	Psychological Measurement and Research Practices Part 1	
L7	Nov 11	Psychological Measurement and Research Practices Part 2	Data Analysis Assignment Due at 11:59pm. Quiz 2 Available Monday, Sept 11th at 2pm and Closed Wednesday, Nov 13 at 11:59pm
L8	Nov 18	Qualitative Approaches	
L9	Nov 25	Psychological Assessments: Personality and Clinical Approaches	
L10	Dec 2	Psychological Assessments: Measuring Cognitive Abilities, Interests, and Motivation	Quiz 3 Available Monday, Dec 2 at 2pm and Closed Wednesday, Dec 4th at 11:59pm. Final Paper due Dec 2 at 11:59pm

Assigned Readings

L1:

Syllabus

L2:

Simms, L. J. (2008). Classical and modern methods of psychological scale construction. *Social and Personality Psychology Compass*, 2(1), 414-433

L3:

Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment*, 31(12), 1412-1427.

Flake, J. K., Pek, J., & Hehman, E. (2017). Construct validation in social and personality research: Current practice and recommendations. *Social Psychological and Personality Science*, 8(4), 370-378

L4:

The link below takes you to an open-source textbook chapter. This discusses reliability and validity. The validity content will be a bit of a recap, and you are welcome to read this as part of lecture 3 if you have time.

<https://opentextbc.ca/researchmethods/chapter/reliability-and-validity-of-measurement/>

L5:

For the article below: I recommend reading this in full, maybe after the lecture as some of these concepts are advanced. I will be clear during lecture about what you will actually be tested on (you should understand what factor analysis is and the difference between EFA and CFA - you do not need to understand equations).

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, 9(2), 79-94

L6:

Chapter 4 - Under Multi-Method Approach

The link below takes you to an open-source textbook chapter on practical strategies for choosing measures.

<https://opentextbc.ca/researchmethods/chapter/practical-strategies-for-psychological-measurement/>

Recommended:

Cacioppo, J. T., & Tassinary, L. G. (1990). Inferring psychological significance from physiological signals. *American psychologist*, 45(1), 16.

L7:

Flake, J. K., & Fried, E. I. (2019). Measurement schmeasurement: Questionable measurement practices and how to avoid them.

Flake, J. K., Shaw, M., & Luong, R. (2021). Addressing a crisis of generalizability with large-scale construct validation.

Recommended:

Allen, M. S., Iliescu, D., & Greiff, S. (2022). Single item measures in psychological science. *European Journal of Psychological Assessment*.

L8:

The link below takes you to an open-source textbook describing qualitative research:

<https://opentextbc.ca/researchmethods/chapter/qualitative-research/>

The link below takes you to an open-source textbook describing Thematic Analysis:

https://oercollective.caul.edu.au/qualitative-research/chapter/_unknown_-22/

L9:

Chapter 1 - Personality Assessment

Chapter 4 - Under Psychological Assessment

American Psychological Association's Ethical Principles of Psychologists and Code of Conduct, Standard 9: Assessment (<http://www.apa.org/ethics/code/index.aspx?item=12>)

Fried, E. I., Flake, J. K., & Robinaugh, D. J. (2022). Revisiting the theoretical and methodological foundations of depression measurement. *Nature Reviews Psychology*, 1(6), 358-368

L10:

Stoll, G., Rieger, S., Lüdtke, O., Nagengast, B., Trautwein, U., & Roberts, B. W. (2017). Vocational interests assessed at the end of high school predict life outcomes assessed 10 years later over and above IQ and Big Five personality traits. *Journal of Personality and Social Psychology*, 113, 167-184.

Chapter 2 & 3 - Under Assessing Cognitive Abilities

Podcast: The Psychology Podcast - Todd Rose, Rethinking Intelligence: <https://scottbarrykaufman.com/podcast/todd-rose-rethinking-intelligence/>