

# PSYC\*3250, Course Outline: Winter 2019

## General Information

**Course Title:** Psychological Measurement

**Course Description:**

This course is an introduction to the theory of psychological measurement and measurement procedures presently used in psychology. Coverage will include such topics as reliability, validity, factor analysis and test construction, and the measurement of ability, personality, and achievement. You will learn not only how to evaluate psychological tests and measures, but also construct and refine your own. This knowledge is essential for both future practitioners and researchers in the area of psychology.

**Credit Weight: 0.50**

**Academic Department (or campus):** Psychology

**Semester Offering:** W20

**Class Schedule and Location:** MWF 11:30AM-12:20PM MACN 113

## Instructor Information

Instructor Name: David Stanley

Instructor Email: [psyc3250@gmail.com](mailto:psyc3250@gmail.com)

Office location and office hours: See website [profile](#).

## GTA Information

GTA Name: Sebastian Sciarra, [ssciarra@uoguelph.ca](mailto:ssciarra@uoguelph.ca)

GTA Name: Brooke Charbonneau, [charbonb@uoguelph.ca](mailto:charbonb@uoguelph.ca)

## **Course Content**

### **Specific Learning Outcomes:**

**2 Literacy, Facet 2. Methodological Literacy:** The ability to understand, evaluate, and design appropriate methodologies for rigorous psychological science

**2 Literacy, Facet 3. Quantitative Literacy:** Includes numeracy, and competence in working with numerical data

**2 Literacy, Facet 4 Technological Literacy:** The ability to select and use appropriate technology

**2 Literacy, Facet 5 Visual Literacy:** The ability to effectively find, interpret, evaluate, use, and create images and visual media and content.

**4 Communicating, Facet 2 Written Communication:** The ability to express one's ideas and summarize theory and research through a variety of writing styles (e.g., American Psychological Association [APA] style, term papers, posters

### **Lecture Content:**

1. Psychometrics and the importance of testing
2. Scaling
3. Individual differences and correlations
4. Reliability: Conceptual basis
5. Empirical estimates of reliability
6. The importance of reliability
7. Validity: Conceptual Basis
8. Estimating Validity
9. Response bias
10. Test bias

## **Course Assignments and Tests:**

In terms of tests, exams, and assignments you are responsible for all material presented in lectures, the textbook and other readings.

It is important to attend lecture to ensure you receive announcements (relevant to grading and other course aspects) that may only be made in lecture. As well, not all of the lecture material is covered in the textbook.

### **1. Exams (25% Midterm, 35% Final)**

Students will be required to write one in-class midterm exam, and one 2-hour final exam. Midterm exam questions may include multiple choice, short answer, and/or problem-solving. Final exam questions will be multiple choice.

### **2. Measure Development Project (total of 30%)**

A major component of the course involves creating your own psychological measure. The purpose of this project is to give you hands-on experience creating a psychological questionnaire, analyzing psychometric data, and writing up psychometric findings. You will work in groups of 3-5 people to create a questionnaire designed to measure a psychological construct of your choice. Data will be collected during class time with PSYC 3250 students acting as research participants. The final write-up is an individual assignment. The requirements and grading breakdown are outlined below.

Your scales must NOT (a) involve any personal, sensitive or incriminating topics or questions that could place participants at risk, (b) manipulate behavior of participants beyond the range of "normal" classroom activity or daily life, (c) involve any physically invasive contact with the research participants, or (d) involve deception.

**2A Construct Definition and Scale items (3%).** You are required to submit the scale that your group creates with a brief summary of the construct definition, domain specification, and justification. 2A Stage 1. Hand in your construct definition, justification, and your items. Construct definitions/items/justification should be completed and submitted as a group (one paper per group). This will be graded for completeness and quality. Late submissions will receive a grade of zero. 2A Stage 2. Feedback from TA/Instructor to revise definitions/items. 2A Stage 3. Hand in final items for data collection. All items will be assembled into a booklet with one informed consent form.

**2B Data Collection (2%).** Data collection is essential to ensuring you have data to analyze for your final project. Data collection is anonymous and voluntary but strongly encouraged so that groups will have data to analyze. There is no penalty for not participating in data collection. A short quiz about data collection worth 1% will occur both of the data collection days (2%).

**2C Measure Development Report (25%).** You will **individually** write a scale-development style manuscript based on the scale you created and data you collected in class. This manuscript will include an introduction, methods, and results/discussion section. You will conduct a literature review outlining the importance, significance, and theoretical relevance of your psychological measure. Students will also conduct psychometric analysis on data collected from the class and present these results. Further details on the exact format of this paper will be provided in a separate handout. Although data is collected as a group, **reports must be written individually.**

### **3. In Class Assignments (2% x 5 = 10%)**

There will be a total of 6 in-class assignments and you must complete 5 of them. If you complete all six, your grade will be calculated from your best 5 (i.e., you cannot get more than 10% total). This process is designed to take into account illness and all other extenuating circumstances for not participating in one of the in-class assignments. Each assignment is worth 2%. These must be submitted through Courselink dropbox. The final due date for each assignment is 5:00 pm the day the in-class assignment was handed out (unless noted). Late in-class assignments will not be accepted and will receive a grade of zero.

Wk	Date	Lecture	Reading	Due / Comments
1	Jan. 6	Introduction to testing	Chapter 1: Introduction	
1	Jan. 8	Scales	Chapter 2: "Scaling"	
1	Jan. 10	Basic Concepts, Assignment: Test reviews	Start of Ch 3	Class assignment 1: Test reviews (2%)
2	Jan. 13	Basic concepts, transformation, norms	Chapter 3: "Individual Differences and Correlations"	
2	Jan. 15	Basic concepts, transformation, norms		
2	Jan. 17	In class assignment: Scoring a personality measure		<ol style="list-style-type: none"> <li>1. Project Group Registration Form</li> <li>2. In class assignment 2: Scoring a personality measure</li> </ol>
3	Jan. 20	Test development	<p>Cohen, R. J., &amp; Swerdlik, M. E. (2005). <i>Psychological Testing and Assessment: An Introduction to Tests and Measurements</i>. Toronto, ON: McGraw Hill. Chapter 8 ("Test Development")</p> <p>8<sup>th</sup> Edition: pages 240-261</p>	
3	Jan. 22	Construct definition and scale creation workshop		
3	Jan. 24	Scale creation workshop		
4	Jan. 27	Classical test theory and reliability	Chapter 5: "Reliability: Conceptual Basic", Chapter 6 "Empirical Estimates of Reliability"	

4	Jan. 29	Using and interpreting information about test reliability	Chapter 7: "The Importance of Reliability"	
4	Jan. 31	In class assignment: Reliability		In class assignment 3: Reliability
5	Feb. 3	Validity	Chapter 8: "Validity Conceptual Basis"	
5	Feb. 5	Validity continued	Chapter 9: "Estimating Validity"	
5	Feb. 7	Midterm Review		Construct definitions and items due in class. (3% of final, Measure Development Project)
6	Feb. 10	<b>Midterm 25%</b>		<b>Midterm 25%</b> Lectures, chapters, and Cohen and Swerdlik pages 190-211.
6	Feb. 12 TA	Construct Definition Feedback  Using R for analyses		R will be used for the final project. You learn how to install and use it in this class.
6	Feb. 14 TA	Construct Definition Feedback  In class assignment: Using R		In class assignment 4: Using R (2%)
7	Feb. 24	Item Analysis		
7	Feb. 26	Item Analysis	*Cohen, R. J., & Swerdlik, M. E.(2005). <i>Psychological Testing and Assessment: An Introduction to Tests and Measurements</i> . Toronto, ON: McGraw Hill. Chapter 8 ("Test Development") 8 <sup>th</sup> Edition: pages 261-275	Final item submission at the beginning of class. Be sure to used the posted template.

7	Feb 28	In class assignment: Item analysis		In class assignment 5: Item analysis (2%)
8	Mar. 2	Data collection strategies.  In class quiz		In class quiz (1%, Measure Development Project)
8	Mar. 4	Data collection strategies. In class quiz		In class quiz (1%, Measure Development Project)
8	Mar. 6	TBA		
9	Mar. 9-13	Data analysis in class using R		
9	Mar. 16(TA) Mar. 18(TA)	Data analysis in class using R		
9	Mar. 20(TA)	Data analysis in class using R		
10	Mar. 23 (TA)	Response Bias	Chapter 10: "Response Bias"	
10	Mar. 25	Response Bias		Measure Development Project Report (25%) due by 2:30pm
10	Mar. 27	Personality Testing.		In class assignment 6: Personality testing
11	Mar 30	Test Bias	Chapter 11: Test Bias	
11	April 1	Test Bias		
11	April 3	Final Exam Review		

## Grade Summary

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Class assignment 1	Jan. 10	2	2 Literacy, Facet 2
In class assignment 2	Jan 17.	2	2 Literacy, Facet 2, 3
In class assignment 3	Jan 31.	2	2 Literacy, Facet 2, 3
In class assignment 4	Feb 14	2	2 Literacy, Facet 2, 3, 4
In class assignment 5	Feb 28	2	2 Literacy, Facet 2, 3, 4
In class assignment 6	Mar 27	2	2 Literacy, Facet 2, 3
Midterm	Feb 10	25	2 Literacy, Facet 2, 3, 5
Project: Definitions	Feb 7	3	2 Literacy, Facet 2 4 Communicating, Facet 2
Quiz: Project	Mar 2	1	2 Literacy, Facet 2
Quiz: Project	Mar 4	1	2 Literacy, Facet 2
Project: Final	Mar 25	25	2 Literacy, Facet 2, 3, 4, 5 4 Communicating, Facet 2

### Additional Notes (if required):

Midterm: 25%

Scale development project total: 30% (25% + 1% + 1% + 3%)

In class assignments: 10% (best 5 of 6)

Final Exam: 35%

Final examination date and time: See [WebAdvisor](#)

Final exam weighting: 35%

*Final Examination regulations are detailed at:*  
[Examination Regulations](#)

## Course Resources

### Required Texts:

Furr, R. M. (2018). Psychometrics (3rd Ed). Sage.



## **Course Policies**

### **Grading Policies**

Only 5 of the 6 in-class assignments will be counted for a maximum of 10%. Late in-class assignments will receive a grade of zero.

Construct definitions and items (3%) must be submitted on time (both Stage 1 and Stage 3; see above). Late submission at either stage will result in a grade of zero on this component of the Measure Development Project.

The final Measurement Development Project must be submitted \*in paper form\* by the specified date and time. Submissions submitted later than this will be loose 10% (i.e., 2.5% of the final course grade) per day. Weekends count as two days. Thus, the final measurement project is due at 1:00 pm on the specified day (see above). If an assignment is handed at 1:15 pm on the due day (i.e., 15 minutes late) the maximum grade is 22.5 out of 25. The late penalty would increase to 20% (i.e., 5% of the final course grade) at 1pm the following day.

### **Undergraduate Grading Procedures**

#### **Course Policy on Group Work:**

Measure development items/definitions will be completed in groups. Measure development reports must be written individually. Exams must be completed on an individual basis.

#### **Course Policy regarding use of electronic devices and recording of lectures:**

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

## **University Policies**

### **Academic Consideration**

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:

[Academic Consideration, Appeals and Petitions](#)

### **Academic Misconduct**

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and

students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

[Academic Misconduct Policy](#)

### **Accessibility**

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact [Student Accessibility Services](#) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email [accessibility@uoguelph.ca](mailto:accessibility@uoguelph.ca) or the [Student Accessibility Services Website](#)

### **Course Evaluation Information**

Please refer to the [Course and Instructor Evaluation Website](#) .

### **Drop date**

The last date to drop one-semester courses, without academic penalty, is April 3, 2020. For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#).

[Current Undergraduate Calendar](#)