

**Syllabus for Psychology 492
Psychological Measurement
Winter 2009-10**

Official Copy (Jan. 5, 2011)

Instructor: Professor Ramona Bobocel
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Office Hours: Professor Bobocel: Tuesday 1:30-3:00 p.m., PAS 4031

Teaching Assistants:

Office Hours

Martin Day	PAS 3240G	mvday@uwaterloo.ca	Mon: 10 am - noon
Stephanie Goyert	PAS 4229	sgoyert@uwaterloo.ca	Thurs: 2:30-4:30 pm
Karina Schuman	PAS 3266	kschuman@uwaterloo.ca	Tues 1:30-3:30 pm
Elizabeth Shantz	PAS 4239	e3shantz@uwaterloo.ca	Wed: 12:30-2:30 pm

Class Time and Location: Monday & Wed 2:30-4:20 MC 1056

Lab Times and Location: All PAS 1237: Lab 101: Thurs 3:30-4:20 p.m.
Lab 102: Thurs 4:30-5:20 p.m.
Lab 103: Thurs 5:30-6:20 p.m.
Lab 104: Friday 12:30-1:20 p.m.

Textbook:

Custom Published Version of Kaplan, R.M., & Saccuzzo, D.P. (2010). *Psychological Testing: Principles, Applications, & Issues* (7th edition). Scarborough, ON: Thomson-Nelson.

Note: This is a special (reduced) printing of the book that contains only the chapters we will use, and it is considerably cheaper than the complete book. This version has a different ISBN than the complete book and is available in the bookstore. Note that I've used the same custom text for several years so there are likely to be used copies around, although not the 7th edition.

Course Objectives:

Measurement is fundamental to science. Tests of theory in most sciences involve specific predictions requiring controlled and accurate observations. In psychology, we are faced with the problem of measuring variables such as “intelligence” or “aggressiveness” that are inferred from behaviour or self-report. How can we tell if the tests we create are really measuring what we think they are? How can we estimate the precision of our tests? This course will tell you. You will learn not only how to evaluate psychological tests and measures, but also how to construct and refine your own. This knowledge is essential in both research and applied settings, because research results and clinical or applied decisions are dependent on the tests and measures that people use.

Course Structure:

This course is a hybrid between a statistics course and a research methods course. The lecture sessions will be run similar to those of a statistics course, and the labs will run like a research workshop. In the lectures, we will go over the content of the assigned readings step-by-step, in order to learn the

basic material. You are expected to complete the assigned readings in preparation for the class. In addition, I will assign problem sets/assignments corresponding to the lecture material, which we will review in class (usually the following week; see timetable). In summary, the lectures and the text provide the necessary foundation required for the successful application of the material in the assignments, the exams, and the lab components.

In the labs, your teaching assistant (TA) will assist you in an independent project, which will require individual research and some written work from each of you. This will be a measure construction project, intended to help you learn how to devise and refine a psychological test. The project will involve carefully researching and defining a construct of interest, inventing a test to measure this construct, and collecting a data set on your test on which to do a psychometric analysis and an analysis of convergent and discriminant validity. You will work in groups of 2-3 for this project (more detail below).

Evaluation: Your grade in this course will be based on the following:

1. Completion of assignments. 6 assignments will be due at specified times throughout the term (you will submit them to your TA in the specified Monday class - see timetable), and I will be reviewing the answers in the next class. The assignments will provide you with problem sets corresponding to the lecture material, which will help you to become more adroit with the material. Importantly, the assignments will help you prepare for exams, as they will help you to learn the material at a deeper level. The correct answers will be posted and reviewed at the next lecture (see timetable). Your performance on the set of assignments is worth 12% of your final grade (i.e., each assignment is worth 2 points). Your grade will be based on completing and submitting solutions in class on the day they are due. **Grading will be 2 marks for a completed assignment with most questions (over 50%) answered correctly, 1 mark for an assignment which shows good effort even though less than half of the questions are answered correctly, and 0 for submitting without good effort or failing to submit.** Keep in mind that there is good benefit from completion of the assignments because doing so will help prepare you for the exams. When the correct solutions are posted, you should review them and come prepared to ask questions in the review session.
2. Your performance on 2 midterm exams (one during the term and the other during the final exam period). Each test will include questions on lectures and readings related to primarily those topics covered since the previous exam. The exams will emphasize the application of the material covered in class and text, rather than mere memorization, and most of the questions will involve solving problems, much like in the assignments. Together, the exams are worth 55% of your course grade (each is worth 27.5%)
3. Lab Group Assignments A & B: You will be required to complete 2 Lab Assignments, due at two times during the term. For Lab Assignment A (due on Fri, Feb 18), you will submit the scale that your group creates with a brief summary of the construct definition and domain specification. For Lab Assignment B (due Fri, April 8), you will conduct a psychometric analysis of the data obtained from your scale, including convergent and discriminant validity. Both lab assignments may be completed and submitted as a group if desired (or as individuals if preferred). Together, the lab assignments are worth 30% of your final course grade. Assignment A = 10%; Assignment B = 20%). The penalty for late submissions on either assignment is 5% per day. **Note:** We will say more about this as the term progresses, but for practical reasons your measure should not “raise any eyebrows” (i.e., no content that is potentially upsetting or highly personal, no content about sexuality, etc.), and it should contain a maximum of 10-12 items. For ethical reasons, your TA will need to veto any controversial content.

4. **Project Participation:** 3% of your final grade. You will receive 3% for completing the booklet of measures that you and your classmates will produce! The booklet of measures must be completed during lab time as indicated in the timetable below (Mar 3/4). No exceptions can be made, because we are on a tight schedule to input the data etc.
5. **REG Bonus:** Experiential learning is highly valued in the Department of Psychology. Therefore, students can earn a "bonus" of 3% by participating in these experiments (i.e., the maximum possible final grade is 103%!). All guidelines for participation, including alternative assignments, will be posted on the UW-ACE website, along with the course syllabus.

For Students with Disabilities

The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

A Few Other Notes

All students should activate their UW computer accounts each term. The accounts give students access to applications such as word processing, statistical and graphics packages, and electronic email as well as access to the Internet. For those who are not planning to use their UW email addresses, please do one of the following things:

- change your email address on QUEST to the one that you want posted on the University Directory, or
- on the UW account, arrange for the email from your UW account to be forwarded to your alternate email address.

Psychology majors should check the Psychology Undergraduate Web Site (<http://www.psychology.uwaterloo.ca/ugradprog/>) regularly for updates (e.g., psychology course offerings for F/W/S, volunteer and/or part-time paid research positions, application deadlines for scholarships, etc.)

Note: From the Faculty of Arts Council

Plagiarism. The Associate Dean of Arts has requested that all course outlines in the Faculty of Arts quote the definition of plagiarism and emphasize the gravity of this academic offense. A summary is provided on page 1:10 of the Undergraduate Calendar.

“Plagiarism... is the act of presenting the ideas, words or other intellectual property of another as one’s own. The use of other people’s work must be properly acknowledged and referenced in all written material... The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without complete and unambiguous acknowledgement, however, is an offense under this policy.”

If you have any questions, please do not hesitate to ask.

Avoidance of academic offenses: All students registered in the courses of the Faculty of Arts are expected to know what constitutes an academic offense, to avoid committing academic offenses, and to take responsibility for their academic actions. When the commission of an offense is established, disciplinary penalties will be imposed in accord with Policy #71 (Student Academic Discipline). For information on categories of offenses and types of penalties, students are directed to consult the summary of Policy #71 which is supplied in the Undergraduate Calendar (section 1; on the Web at http://www.adm.uwaterloo.ca/info/cal/UW/policy_71.html). If you need help in learning how to avoid offenses such as plagiarism, cheating, and double submission, or if you need clarification of aspects of the discipline policy, ask your course instructor for guidance. Other resources regarding the discipline policy are your academic advisor and the Undergraduate Associate Dean.

Students who believe that they have been wrongfully or unjustly penalized have the right to grieve. Please refer to Policy #70 (Student Grievance) at <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.html>.

On the next pages is a tentative timetable of topics to be covered in lecture and lab components.

**Psychological Measurement Winter, 2010-11
Lecture and Lab Components at a Glance**

Week of	Monday Lecture	Wed Lecture	Lab Thurs/Friday
Jan 3/5	UW closed	Review syllabus and course components	Select Groups & Overview of Lab Structure (see benchmarks)
Jan 10/12	What is Psychological Measurement and Why is it Important? (Chapter 1)	Process of Test Construction (Chapter 6, pp. 157-168, & Chapter 7 - skim)	Discuss Topic & Past Research on Construct of Interest Intro to SPSS
Jan 17/19	Test Construction continued	Norms & Basic Statistics (Chapter 2) Intro to SPSS Assignment 1	Continue refining topic and construct of interest Intro to Statistics in SPSS
Jan 24/26	Correlation and Regression (Chapter 3) Assignment 2 Assignment 1 Due in Class (solutions posted at noon on Tues)	Regression continued and Reviewed Assignment 1 Solutions Reviewed	Construct Definition & Domain Specification, Begin Writing Items
Jan 31/Feb 2	Reliability and Measurement Error (Chapter 4, omit pp. 117-119 for now) Assignment 3 Assignment 2 Due in Class (solutions posted at noon on Tues)	Applications of Classical Test Theory Assignment 2 Solutions Reviewed	Continue Item Writing, Write Instruction Set
Feb 7/9	Applications of Classical Test Theory Continued Psychometrics of Observation (Chapter 4, pp. 117-119) Assignment 3 Due by in Class (solutions posted at noon on Tues)	Assignment 3 Solutions Reviewed Q & A on Lecture Material to Date	Finalize Scale (Preliminary Version of Lab Assignment A)
Feb 14/16	Midterm 1 (2:30 – 4:20 pm)	No Lecture; Students work on Lab Assignment A	Final Scale Review in Lab if needed Lab Assignment A due by Friday, Feb 18 no later than 3 pm to your TA
Reading Week	Recover	Recover	Recover

2nd half of Course ...

Week of	Monday Lecture	Wed Lecture	Lab (Thurs/Fri)
Feb 28/Mar 2	Validity I (Chapter 5) Assignment 4	Validity I continued (MMMT) Midterm 1 results and review	Students complete the booklet of measures (3%) (this must be done in lab, no exceptions)
Mar 7/9	Validity II: Applications (Chapter 18, pp. 510-526; Chapter 19)	Decision Theory Assignment 5 Re-read Chp 18, pp. 512-521)	Raw Data to Groups, Create Data file Preliminary Data Preparation, Recoding Items, Creating composite score
Mar 14/16	Item Analysis (Chapter 6, pp. 168-182) Assignment 6 Assignment 4 Due in Class (solutions posted at noon on Tues)	Item Analysis & Reliability in SPSS Assignment 4 Solutions Reviewed	Data Analysis: Item Analysis & Reliability
Mar 21/23	Factor Analysis (Chapter 3, pp. 89-93) Assignment 5 Due in Class (solutions posted at noon on Tues)	Factor Analysis in SPSS	Data Analysis: Factor Analysis
Mar 28/30	Evaluating Convergent & Discriminant Validity Assignment 6 Due in Class (solutions posted at noon on Tues)	Workshop: Assignments 5 & 6 Solutions Reviewed	Data Analysis: Convergent & Discriminant Validity (Lab Assignment B is due next week)
April 4	Q & A on Lecture Material to Date	Classes over	Lab Assignment B due by Friday April 8 by 3 pm to your TA

Midterm 2 (2 hrs): Final Exam Period, Date TBA by Registrar's Office (Don't book your holiday before the date is announced!)