

**Syllabus for Psychology 492
Psychological Measurement
Winter 2008-09**

Official Copy (Jan. 5, 2009)

Instructor: Professor Ramona Bobocel
888-4567 x33622

Office Hours: Professor Bobocel: Tuesday 3:30-5:00 p.m., PAS 4031

Teaching Assistants:

Carolyn Daniels	PAS 4232	cdaniels@uwaterloo.ca
Sean Schofield-Hurwitz	PAS 4238	saschofi@uwaterloo.ca
Omid Fotuhi	PAS 3237	ofotuhi@uwaterloo.ca
Joe Berry	PAS 4243	jwberry@uwaterloo.ca

Office Hours

Fri: noon - 2 pm
Fri: 11 am - 1 pm
Mon: 10 am - noon
Thurs: 2:30-4:30 pm

Class Time and Location: Monday & Wed 2:30-4:20 MC 1085

Lab Times and Location: All PAS 1237: Lab 101: Wed 4:30-5:20 p.m.
Lab 102: Wed 5:30-6:20 p.m.
Lab 103: Thurs 4:30-5:20 p.m.
Lab 104: Thus 5:30-6:20 p.m.

Textbook:

Custom Published Version of Kaplan, R.M., & Saccuzzo, D.P. (2005). *Psychological Testing: Principles, Applications, & Issues* (6th 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. Also, note that the cover of the custom version may indicate 5th edition, but that is a printing error. I've used the same custom version for several years so there are likely to be used copies around.

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 evaluations 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 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 on the assignments and the exams.

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 3-4 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 lab TA but we will review the answers in class). The assignments will provide you with problem sets corresponding to the lecture material, which will help you to learn the material. Importantly, the assignments will help you prepare for exams, as the exams will be very similar to the assignments. 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 to your TA in a drop box on UW-ACE. Grading will be 2 marks for a completed assignment submitted on time with most questions answered correctly, and a single mark for an assignment with less than half of the questions answered correctly. Keep in mind that there is good benefit from completion of the assignments because doing so will help prepare you for the exams. Note that assignments will not be accepted beyond 6 pm on the date they are due (the drop box will be closed). At that, time the correct solutions will be posted. You should review the correct solutions 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, 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 13), 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 3), 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. 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 (Feb 25/26). No exceptions can be made.
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 I; on the Web at http://www.adm.uwaterloo.ca/infoucal/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, 2008-09
Lecture and Lab Components at a Glance

Week of	Monday Lecture	Wed Lecture	Lab (Wed/Thurs)
Jan 5	Review syllabus and course components	What is Psychological Measurement and Why is it Important? (Chapter 1)	Select Groups, Intro to SPSS, Literature Search
Jan 12	Norms & Basic Statistics (Chapter 2) Intro to SPSS Assignment 1	Correlation and Regression (Chapter 3) Assignment 2	Discuss Topic & Past Research on Construct of Interest, Intro to Statistics in SPSS
Jan 19	Process of Test Construction (Chapter 6, pp. 157-168, & Chapter 7 - skim) Assignments 1 & 2 Due by 12 noon to your TA (solutions will be posted at 1 pm)	Test Construction continued Assignments 1 & 2 Solutions Reviewed	Construct Definition & Domain Specification, Begin Writing Items
Jan 26	Reliability and Measurement Error (Chapter 4, omit pp. 117-119 for now) Assignment 3	Applications of Classical Test Theory	Continue Item Writing, Write Instruction Set
Feb 2	Applications of Classical Test Theory Continued Assignment 3 Due by 12 noon to your TA (drop box will close and solutions will be posted at 1 pm)	Assignment 3 Solutions Reviewed, Q & A on Lecture Material to Date	Complete Scale (Preliminary Version of Lab Assignment A)
Feb 9	Midterm 1 (2:30 – 4:20 pm)	No Lecture; Students work on Lab Assignment A	Final Scale Review Lab Assignment A due by Friday, Feb 13 at 12 noon to your TA
Reading Week	Recover	Recover	Recover

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Week of	Monday Lecture	Wed Lecture	Lab (Wed/Thurs)
Feb 23	Validity I (Chapter 5) Assignment 4	Validity I continued (MMMT) Midterm 1 results and review	Students complete the booklet of measures (3%) (this is done in lab, no exceptions)
Mar 2	Validity II: Applications (Chapter 18, pp. 510-526; Chapter 19)	Psychometrics of Observation & Decision Theory Assignment 5 (Chapter 4, pp. 117-119) Re-read Chp 18, pp. 512-521) Assignment 4 Due by 12 noon to your TA (solutions will be posted at 1 pm)	Raw Data to Groups, Create Data file Preliminary Data Preparation, Recoding Items, Creating composite score
Mar 9 *we will likely need the class time 2:30-4:20 both M & W*	Item Analysis (Chapter 6, pp. 168-182) Assignment 6	Item Analysis & Reliability in SPSS Assignment 4 Solutions Reviewed	Data Analysis: Item Analysis & Reliability
Mar 16 *we will likely need full class time 2:30-4:20 both M & W*	Factor Analysis (Chapter 3, pp. 89-93)	Factor Analysis in SPSS	Data Analysis: Factor Analysis
Mar 23	Evaluating Convergent & Discriminant Validity Assignments 5 & 6 Due by 12 noon to your TA (solutions will be posted at 1 pm)	Workshop: Assignments 5 & 6 Solutions Reviewed	Data Analysis: Convergent & Discriminant Validity (Lab Assignment B is due next week)
Mar 30	Q & A on Lecture Material to Date	No Lecture; Students work on Lab Assignment B	Lab Assignment B due by Friday April 3 by 12 noon to your TA

Midterm 2 (2 hrs): Final Exam Period, Date TBA by Registrar's Office