



## Department of Psychology

### Psychology 407 (L01) – Psychometrics

#### Fall Session 2008

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<b>Instructor:</b>	Dr. Theresa Kline	<b>Lecture Location:</b>	EDC 384
<b>Phone:</b>	220-3469	<b>Lecture Days/Time:</b>	T/Th 12:30 – 1:45
<b>Email:</b>	Babbitt@ucalgary.ca		
<b>Office:</b>	Administration 135B		
<b>Office Hours:</b>	To Be Announced		

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#### Course Description and Goals

Theory and application of methodological and statistical issues in psychological assessment. Topics include: theories of psychological measurement, scale development, item analysis, item bias, reliability, validity, and test fairness.

#### Aims of Psychology 407

- A. Introduce psychometric concepts and emphasize their importance in testing and evaluation.
- B. Familiarize students with types of tests.
- C. Understand how to accurately assess the psychometric properties of particular tests.
- D. Be confident in using statistical software in establishing some of the psychometric properties of tests.

#### Learning Goals

1. Understand the use of psychological tests and measures.
2. Know major societal events that influence the testing industry.
3. Know the protocol for test item design.
4. Know when to use different response options.
5. Understand the importance of sampling and generalizability.
6. Assess items on a test for various characteristics.
7. Assess items for bias.
8. Know the types and how to conduct the appropriate analyses for test reliability.
9. Evaluate the reliability of a test.
10. Know the types and how to conduct the appropriate analyses for test validity.
11. Evaluate the validity of a test.
12. Articulate the major professional and societal issues and concerns over psychological testing.

## Required Materials

Kline, T.J.B. (2005). *Psychological Testing: A Practical Approach to Design and Evaluation*. Thousand Oaks, CA: Sage

A required package of notes for this course are available at the Department of Psychology.

## Evaluation

The course grade will be based on four quizzes, a paper, and five laboratory assignments. Students must achieve a passing grade on both the class and lab components to pass this course. The paper will count for **20%** of your grade. Papers are due **Nov. 20, 2008 by 4:00 p.m.** and must be in hard copy form. They can be turned in during class time or at the Department of Psychology Office in Administration 275. Papers received after the due date will be reduced 10 points (out of 100) for each day they are late. There are **NO** exceptions to this. The document should conform to APA style and be 10 pages in length. A marking scheme is attached to let you know how the paper grading will be handled. Quizzes will cover material in the text as well as lecture material that is **NOT** covered explicitly in the text. Laboratory assignments and expectations will be covered in your first lab.

### Distribution of Credit for Final Grade:

First quiz:	15%
Second quiz:	15%
Third quiz:	15%
Fourth quiz:	10%
Paper	20%
Lab Assignments:	25% (grade will be based on five assignments)

Quizzes are multiple-choice format.

Paper assignment is formal APA format.

Laboratory assignment format is covered in the lab outline.

## Lecture Schedule

<u>Week</u>	<u>Topic</u>	<u>Chapter</u>
1. Sept. 8	The Testing Enterprise/Review of Correlation & Regression	1
2. Sept. 15	Designing and Writing Items and Responses	2 & 3
3. Sept. 22	Collecting Data: Samples and Sampling Issues	4
4. Sept. 29	Classical Test Theory	5

### QUIZ 1 covering topics 1-4 (Oct. 9)

5. Oct. 6	Modern Test Theory (dichotomous data)	6
6. Oct. 13	Modern Test Theory (polytomous data)	6
7. Oct. 20	Reliability (tests & items)	7
8. Oct. 27	Reliability (raters)	8

### QUIZ 2 covering topics 5-8 (Nov. 6)

9. Nov. 3	Content and Criterion-Related Validity Approaches	9
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### No class Nov. 11 – Remembrance Day

10. Nov. 13	Internal Structure Validity Approaches (Part 1)	10
11. Nov. 17	Internal Structure Validity Approaches (Part 2)	10

### QUIZ 3 covering topics 9-11 (Nov. 20)

12. Nov. 24/Dec. 1	Ethics and Professional Issues/Test Reviews	11/12
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### QUIZ 4 covering topic 12 (Dec. 4)

## Laboratory Topics

1. Correlation & Regression (marked for credit)
2. Designing and Writing Items
3. Collecting Data: Samples and Sampling Issues
4. Item Analysis (marked for credit)
5. Modern Test Theory (dichotomous data)
6. Modern Test Theory (polytomous data) and Classical Test Theory
7. Reliability (tests)
8. Reliability (raters) (marked for credit)
9. Criterion-Related Validity
10. Factor Analysis (marked for credit)
11. Item Bias (marked for credit)

## Grading Scale

A+	96-100%	B+	80-84%	C+	67-71%	D+	54-58%
A	90-95%	B	76-79%	C	63-66%	D	50-53%
A-	85-89%	B-	72-75%	C-	59-62%	F	0-49%

As stated in the University Calendar, it is at the instructor's discretion to round off either upward or downward to determine a final grade when the average of term work and final examinations is between two letter grades. To determine final letter grades, final percentage grades will be rounded up to the nearest whole percentage (e.g., 89.4% will be rounded up to 90%)

### **University of Calgary Curriculum Objectives**

Based on the structure and content of this course, the following **Core Competencies** are addressed:

1. Critical and creative thinking through the scholarly critique of a commercially-available test.
2. Effective oral and written communication through completing a class paper and five laboratory assignments.
3. Gathering and organizing information through the completing an assessment of a commercially-available test
4. Logical calculation through the statistical content covered in the course.
5. Interpretive and assessment skills through data analysis and interpretation in the class and laboratory.

### **Reappraisal of Grades**

A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded may have the work re-graded as follows. The student shall discuss the work with the instructor within fifteen days of being notified about the mark or of the item's return to the class. If not satisfied, the student shall immediately take the matter to the Head of the department offering the course, who will arrange for a reassessment of the work within the next fifteen days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same.

If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within fifteen days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

### **Plagiarism and Other Academic Misconduct**

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct.

### **Academic Accommodation**

*It is the student's responsibility to request academic accommodations.* If you are a student with a documented disability who may require academic accommodation and **have not** registered with the Disability Resource Centre, please contact their office at 220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.

### **Absence From A Test**

Make-up exams are NOT an option without an official University medical excuse (see the University Calendar). You must contact the instructor before the scheduled examination or you will have forfeited any right to make up the exam. At the instructor's discretion, a make-up exam may differ significantly (in form and/or content) from a regularly scheduled exam. Except in extenuating circumstances (documented by an official University medical excuse), a makeup exam is written within two (2) weeks of the missed exam.

A completed Physician/Counselor Statement will be required to confirm absence from a test for health reasons. The student will be required to pay any cost associated with the Physician Counselor Statement.

### **Course Credits for Research Participation**

Students in most psychology courses are eligible to participate in Departmentally approved research and earn credits toward their final grades. A maximum of two credits (2%) per course, including this course, may be applied to an individual's final grade. Students can create an account and access the Research Participation System website at <http://ucalgary.sona-systems.com>. **The last day to participate in research is December 4th, 2008.**

### **Student Organizations**

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in the Administration building, room 170 or may be contacted at 220-5567.

**Student Union VP Academic:** Phone: 220-3911 [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
**Student Union Faculty Rep.:** Phone: 220-3913 [socialscirep@su.ucalgary.ca](mailto:socialscirep@su.ucalgary.ca)

### **Important Dates**

The last day to drop this course and **still receive a fee refund** is **September 19th, 2008**.  
The last day to withdraw from this course is **December 5th, 2008**.

A copy of this course outline may be viewed on the Internet at the following web address:  
<http://psychology.ucalgary.ca/courses/f08>