OBJECTIVES

The course is designed to introduce students to basic concepts in the measurement of subjective states: attitudes, feelings, perceptions, function, beliefs or achievements. Topics are based on areas of importance in the design, development and validation of an instrument. In particular, considerable attention will paid to concepts of reliability, validity and generalizability as they apply to instrument design.

CURRICULUM

Below is the approximate schedule. Inevitably we will not adhere rigorously to the schedule, so you cannot interpret the weeks as anything but an approximation; However, we will follow the sequence outlined.

Week

1 REVIEW OF STATISTICAL METHODS - ANOVA, Regression, Factor Analysis
   Readings   - PDQ Statistics (Norman/Streiner, Decker 1986) (Chapters 5,6,15) in Health Sciences Bookstore
               - or any other stats book

2 DEVISING THE ITEMS
   Readings   - Chapter 3 - Devising the Items
3 SCALING RESPONSES

Readings - Chapter 4 - Scaling Responses
- Chapter 6 - Biases in Responding

4 SELECTING ITEMS, ITEM ANALYSIS

Readings - Chapter 5 - Selecting the Items
- Chapter 7 - From Items to Scales

5 RELIABILITY

Readings - Chapter 8 - Reliability

Supplemental
- Mitchell SK. Interobserver Agreement, Reliability, Generalizability, Psych Bull 86, 376-390, 1979

6 GENERALIZABILITY THEORY

Readings - Chapter 9 - Generalizability Theory

7 VALIDITY

Readings - Chapter 10 - Validity

8 MEASURING CHANGE

Readings - Chapter 11 - Measuring Change

9 ADMINISTRATION, RESPONSE RATES, ETC

Readings - Chapter 13 - Methods of Administration

READINGS

The readings for the course are based on the "Health Measurement Scales: A Practical Guide", by Streiner/Norman, available in the Health Sciences bookstore. This will be supplemented by additional readings handed out in class, and supplemental textbooks

EVALUATION
The emphasis of the course is on principles of measurement, and not on applications (e.g. IQ testing). However, your successful mastery of the course materials is evidenced by your ability to apply these principles to a problem area. Consequently, the final assignment for the course reflects the application of these principles to a domain of measurement.

We would like you to devise your own scale, to measure something of your own. The basic characteristic to be assessed can be a serious or as frivolous as you like (e.g. everything from learning styles to beer tasting). If you choose this route, you will be expected to devise a questionnaire and do some formal reliability and validity testing. Sample sizes are not important, nor is the choice of subjects, but it is important that you actually gather data and analyse it appropriately.

You can report the results of your efforts in either of two ways:

a) A presentation in class, of about 15 minute duration, in one of the last 2-3 class periods. If a large number of students take this option, I reserve the right to select students who will present.

B) A hand-in assignment of 10-20 pages, double spaced. This will be copied and distributed to other students, and marked by the instructor and T/A.

There will be three other methods of evaluation:

1) Two assignments, which will be handed out during the course, usually with a one to two week deadline.

2) A brief in-class midterm examination

3) A final two-hour multiple choice and short answer examination. This will cover the entire course, and the mark will be computed by taking a combination of right and wrong answers (R - W/4).

Overall course grade will be computed as:

\[(\text{Final exam x 40%}) + (\text{Midterm x 10%}) + (\text{Project x 30%}) + (\text{Assignments x 20%}) = \text{Total}\]

All grades will initially be on a 100 point scale, these will then be averaged and converted to letter grades using the conversion scale given in the Undergraduate calendar.

Assignments must be submitted when due. Dates for the midterm tests and due dates for the assignments will be announced in class, and every effort will be made to accommodate individual circumstances. Any request for extension should be discussed (preferably in advance) with the professor. Unless there are extenuating circumstances (as judged by the professor), marks will be deducted for late assignments.

Grades will be assigned according to the following conventional scheme:
90-100 A+  67-69 C+
85-59 A  63-66 C
80-84 A-  60-62 C-
77-79 B+  57-59 D+
73-76 B  53-56 D
70-72 B-  50-52 D-
0-49 Fail

The instructors reserve the right to adjust final marks up or down based on the performance of the class as a whole.

**Academic Dishonesty**

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at [http://www.mcmaster.ca/senate/academic/ac_integrity.htm](http://www.mcmaster.ca/senate/academic/ac_integrity.htm)

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.

2. Improper collaboration in group work.

   In this course, while students may work together on assignments, each student must have his/her own data base and must conduct his/her own analyses and writeups.

3. Copying or using unauthorized aids in tests and examinations.

   In this course, any equations and tables needed in exams will be provided. Any calculator can be brought into the exams. No other resources are allowed.