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 INTRODUCTION

Readings
- Chapter 1 – Introduction
- Chapter 2 – Basic concepts

2 DEVISING THE ITEMS

Readings
- Chapter 3 - Devising the Items

Supplemental
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

Supplemental

5/6 RELIABILITY

Readings  - Chapter 8 - Reliability

Supplemental
  - The ANOVA and Correlation chapters of any introductory statistics book

7/8 GENERALIZABILITY THEORY

Readings  - Chapter 9 - Generalizability Theory

Supplemental

9 VALIDITY

Readings  - Chapter 10 - Validity

10 MEASURING CHANGE

Readings  - Chapter 11 - Measuring Change

11 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 to their Development and Use", by Streiner & Norman, available in the Health Sciences bookstore. This should be supplemented by additional readings.
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.

You are required to devise your own scale and measure something of interest to you. The basic characteristic to be assessed can be as serious or as frivolous as you like (e.g. everything from learning styles to beer tasting). 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 participants, but it is important that you actually gather data and analyse it appropriately. All topics must be approved by the course instructor, primarily for the purpose of ensuring feasibility.

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

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

b) A written hand-in assignment of 10-20 pages, double spaced.

There will be three other methods of evaluation:

1) 2 assignments that will be handed out during the course, usually with one to two weeks lead time.

2) An in-class midterm examination

3) A final examination. This will cover the entire course.

Overall course grade will be computed as:

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

All grades will initially be on a 100-point scale, these will then be 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:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A+</td>
</tr>
<tr>
<td>85-59</td>
<td>A</td>
</tr>
<tr>
<td>80-84</td>
<td>A-</td>
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<tr>
<td>77-79</td>
<td>B+</td>
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<tr>
<td>73-76</td>
<td>B</td>
</tr>
<tr>
<td>70-72</td>
<td>B-</td>
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<tr>
<td>67-69</td>
<td>C+</td>
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<tr>
<td>63-66</td>
<td>C</td>
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<tr>
<td>60-62</td>
<td>C-</td>
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<tr>
<td>57-59</td>
<td>D+</td>
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<tr>
<td>53-56</td>
<td>D</td>
</tr>
<tr>
<td>50-52</td>
<td>D-</td>
</tr>
<tr>
<td>0-49</td>
<td>Fail</td>
</tr>
</tbody>
</table>

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, each student must have his/her own database and must conduct his/her own analyses and write-ups.

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

   In this course, any equations and tables needed in exams will be provided. No outside resources (including calculators) are allowed.