

THE UNIVERSITY OF WESTERN ONTARIO
LONDON CANADA

School of Health Studies

Health Sciences 4091a
Special Topics in Health Sciences - Test Construction

1.0 CALENDAR DESCRIPTION

In this course, students will be familiarized with basic tenets of classical test theory, and will be introduced to methods of constructing valid and reliable measurement instruments. Topics covered will include part and partial correlation, reliability, validity, item analysis, and factor analysis.

Prerequisites: None (*Health Sciences 2801a/b and 3801a/b, or the former Health Sciences 2800, strongly recommended*)

2.0 COURSE INFORMATION

Instructor: Dr. Andrew M. Johnson
Arthur and Sonia Labatt Health Sciences Building, Room 219
ajohnson@uwo.ca

Office Hours: Wednesdays, 10am to 12pm

Course Website: <https://webct.uwo.ca>

Times and Location of Lectures:

Mondays	11:30am to 1:30pm	SSC 3026
Wednesdays	12:30pm to 1:30pm	SSC 3024

3.0 TEXTBOOK AND READINGS

Spector, Paul E. (1992). *Summated Rating Scale Construction: An Introduction*. London, UK: Sage Publications, Inc. ISBN: 0-8039-4341-5

In addition to the course textbook, there may be required readings that are pulled from the literature. These readings will be provided through WebCT, and will be clearly referenced within class overheads.

4.0 COURSE OBJECTIVES

The questionnaire is one of the most ubiquitous methods of data collection in the health sciences. Fortunately, the steps involved in the creation of questionnaires are straightforward (and intuitive), and the math involved in the evaluation of measurement tools is easily accessible to anyone with a basic understanding of descriptive statistics. Through this course, you will be introduced to the steps involved in the systematic creation (and evaluation) of standardized measures, and will be afforded an opportunity to create a simple measure as a class exercise.

5.1 EVALUATION

Online Quizzes	<i>All quizzes will go offline at 11:59pm on 2010.11.17</i>	24%
Midterm	<i>To be held during class on October 18, 2010</i>	30%
Final Exam	<i>Covers all material from 2010.09.13 to 2010.10.13</i> <i>To be held during the December Exam Period (TBA)</i>	35%
Item Writing Exercise	<i>Covers all material from 2010.09.13 to 2010.12.08</i> <i>Completed in class on 2010.10.20</i> <i>(and discussed in class on 2010.10.27)</i>	1%
Item Analysis Exercise	<i>To be submitted online by 11:59pm on 2010.12.08</i>	10%

Online Quizzes: Throughout the course, you will be given an opportunity to complete six online quizzes, each of which will be weighted evenly (4% each) in deriving the grade for this portion of your final mark. You may complete the quizzes at your own pace, but all quizzes will go offline at 11:59pm, on 2010.11.17. The quizzes will go online after class on the following days:

2010.09.22	<i>Descriptives</i>
2010.09.29	<i>Correlation</i>
2010.10.04	<i>Classical Test Theory</i>
2010.10.13	<i>Item Writing</i>
2010.10.25	<i>Reliability</i>
2010.11.01	<i>Validity</i>

Midterm: The midterm for this course will test material presented (in class, in the text, and in any extra readings assigned) between 2010.09.13 and 2010.10.13. It may consist of calculations, short answer questions, essay questions, and multiple-choice questions. This exam will be held in class on October 18, 2010. You will be provided with a formula sheet during the exam (and this formula sheet will be given to you in advance, to review), but the examination will be closed-book.

Item Writing Assignment: You will be writing items (in groups) in class on 2010.10.20, and refining them at home. Your group's 'presentation version' of the items will then be uploaded through the assignment submission tool on WebCT before 4pm on 2010.10.25, so that I can prepare PowerPoint slides of your items. One representative of your group will then present them during the class on 2010.10.27. You will get full grades for this assignment if: (1) you participate in the item writing assignment during class (on 2010.10.20); (2) you upload the document to WebCT on time; and (3) you attend the item writing discussion class (on 2010.10.27). **Note:** Every person in the class must upload a copy of his or her group's items in order to receive a grade – even though every person in the group will be uploading exactly the same document (it's not plagiarism – it's "group work"). Late assignments will not be accepted.

Item Analysis Assignment: We will be administering the measure that we create as a class, and I will then prepare the data file for you. You will each be given the data to analyze, along with a series of questions to answer. This assignment is to be completed (and submitted through WebCT) by 11:59pm on 2010.12.08. Late assignments will not be accepted.

Final Exam: The final exam will cover all material presented within the course. It may consist of calculations, short answer questions, essay questions, and multiple-choice questions. The exam will be held during the December exam period. You will be provided with a formula sheet during the exam (and this formula sheet will be given to you in advance, to review), but the examination will be closed-book.

Important Note Regarding the Use of Electronic Devices During Examinations: You will need a calculator for both examinations, and there are no restrictions on the type of calculator that may be used. Unless you have medical accommodations that require you to do so, you may not use any of the following electronic devices during the examinations: cellphones, smart phones, audio players or recorders of any sort, video cameras, video games, DVD players, televisions, laptop/notebook/netbook computers, desktop computers, flashlights, laser pointers, or power tools of any sort.

5.2 MAKEUP EXAMS AND LATE ASSIGNMENTS

- You must have a valid medical or compassionate reason for missing a scheduled examination, and documentation for your absence must be filed with the main office of the School of Health Studies. See section 7.2 of this outline for information concerning acceptable documentation of illness. Retroactive exam accommodation (i.e., for exams that have been written) will not generally be granted.
 - No makeup exam will be permitted for a missed midterm examination. Instead, your final exam will be reweighted (to be worth 70% of your course grade).
 - Students with legitimate reasons for missing the final exam will be given an opportunity to write a makeup examination in early January, 2011.
- It is the general policy of this course to disallow late submissions of assignments. Students without a bonafide medical or compassionate reason for handing an assignment in late will be given a grade of zero. If you have a medical or compassionate reason that you feel may impact on your ability to hand your assignment in on time, you must present your documentation to the academic counselors in the School of Health Studies main office, before the due date of the assignment. They will inform me of their decision, and I will provide you with an appropriate extension. As with examinations, retroactive accommodations will not generally be granted – nor will last minute requests for extensions.

6.0 CLASS SCHEDULE

<i>Lecture Date</i>	<i>Topics</i>	<i>Readings</i>
2010.09.13	<ul style="list-style-type: none"> • course overview 	Spector: pgs 1-9
2010.09.15	<ul style="list-style-type: none"> • SPSS refresher <ul style="list-style-type: none"> ○ preparing your data file for the course 	
2010.09.20	<ul style="list-style-type: none"> • statistics refresher: <ul style="list-style-type: none"> ○ calculating descriptives ○ levels of measurement ○ standard scores ○ percentiles, and how they can be used (z-table lookups) 	
2010.09.22	<ul style="list-style-type: none"> • using SPSS to calculate descriptives 	
2010.09.27	<ul style="list-style-type: none"> • correlations: zero-order and partial • basics of path diagrams 	
2010.09.29	<ul style="list-style-type: none"> • using SPSS to calculate correlation coefficients 	
2010.10.04	<ul style="list-style-type: none"> • classical test theory 	Spector: pgs 10-18
2010.10.06	<ul style="list-style-type: none"> • item-writing, part I 	Spector: pgs 18-22
2010.10.11	<i>no lecture (or office hours) today (Thanksgiving)</i>	
2010.10.13	<ul style="list-style-type: none"> • item-writing, part II 	Spector: pgs 22-28
2010.10.18	MIDTERM EXAMINATION	
2010.10.20	<ul style="list-style-type: none"> • item-writing exercise 	
2010.10.25	<ul style="list-style-type: none"> • reliability 	Spector: pgs 29-46, 65-69
2010.10.27	<ul style="list-style-type: none"> • item-writing exercise (wrap-up) 	
2010.11.01	<ul style="list-style-type: none"> • validity 	Spector: pgs 46-53, 60-64
2010.11.03	<ul style="list-style-type: none"> • reliability and validity calculations 	
2010.11.08	<ul style="list-style-type: none"> • item analysis, part I 	
2010.11.10	<ul style="list-style-type: none"> • item analysis using SPSS 	
2010.11.15	<ul style="list-style-type: none"> • item analysis, part II 	
2010.11.17	<ul style="list-style-type: none"> • item analysis using SPSS 	
2010.11.22	<ul style="list-style-type: none"> • factor analysis, part I 	Spector: pgs 53-60
2010.11.24	<ul style="list-style-type: none"> • factor analysis using SPSS 	
2010.11.29	<ul style="list-style-type: none"> • factor analysis, part II 	
2010.12.01	<ul style="list-style-type: none"> • factor analysis using SPSS 	
2010.12.06	<ul style="list-style-type: none"> • Catch-up and review 	
2010.12.08	<ul style="list-style-type: none"> • Catch-up and review 	

7.1 GENERAL COURSE POLICIES AND PROCEDURES

Course Website

This course is a totally “paperless” course, and as such the course website will be your sole source for lecture overheads, readings, and course information (including this course outline). Due to privacy regulations, grades will only be provided to you through the course website (using the “My Grades” tool) – I cannot, under any circumstance, convey grades via email, or over the phone.

Bulletin Board

A bulletin board has been set-up on the course website, and you are encouraged to use this resource to locate and set-up study groups, and to ask questions regarding course content and procedures.

Email

I am happy to answer your questions via email. You must, however, use your UWO email address for all correspondence regarding this course. Because the University ‘anti-spam’ programs often reject email from Hotmail, Yahoo, and other public email addresses, there is no guarantee that I will receive your emails if you send them from a public email program – or from any off-campus server, when sending email using any method other than the university’s webmail system. That said, I will do my best to answer your emails promptly. Please limit your questions to administrative matters only – detailed questions on course content should be: (a) raised during lab sessions, (b) asked during office hours, or (c) posted to the bulletin board maintained on the course website.

Lecture Attendance

You are expected to attend every class, as some material that is covered during lecture will not be in the course notes.

Eating and Drinking in Class

Out of consideration for your fellow students, please refrain from eating during class (lidded beverages are acceptable).

Grade Adjustments

Final grades in this course will be taken to the closest integer (i.e., I will “round off” decimals). Exam grades will be calculated out of 100% to one decimal place. I will not, under any circumstances, “bump up” your grade (i.e., to facilitate professional school applications etc.). This includes grades that end in a “9”. Along similar lines, I will not reweight examinations for reasons other than those outlined in section 5.4. In other words – I will not alter exam weights for evaluations that you have already written.

Use of Cellphones During Class

Please ensure that any cellphones, pagers, or other communication devices on your person are turned off, or have their ringers silenced (or turned to vibrate) during lectures and labs.

Use of Laptops During Class

If you plan to bring your laptop to class, please restrict your computer use to course-related activities, and refrain from using instant messaging clients, video games, or other software packages that might be distracting to students sitting near you.

Recording Lectures

Please do not create audio or video recordings of my lectures.

7.2 POLICY REGARDING ILLNESS

The University recognizes that a student’s ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. Illness may be acute (short term), or it may be chronic (long term), or chronic with acute episodes. The University further recognizes that medical situations are deeply personal, and respects the need for privacy and confidentiality in these matters. However, in order to ensure fairness and consistency for all students, academic accommodation shall be granted only in those cases where there is documentation indicating that the student was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities. Documentation shall be submitted, as soon as possible, to the appropriate academic counselors (the Office of the Dean of the student’s Faculty of registration/home Faculty) together with a request for relief specifying the nature of the accommodation being requested. For this course, you are to contact the academic counselors in the main office of the School of Health Studies. Documents submitted in this fashion will be retained in your file, and will be held in confidence in accordance with the University’s Official Student Record Information Privacy Policy [<http://www.uwo.ca/univsec/handbook/general/privacy.pdf>].

Once the petition and supporting documents have been received and assessed, appropriate academic accommodation shall be determined by the Dean’s Office (Academic Counsellor) in consultation your instructor. Academic accommodation may include extension of deadlines, waiver of attendance requirements for classes/labs/tutorials, arranging Special Exams or Incompletes, re-weighting course requirements, or granting late withdrawals without academic penalty. Academic accommodation shall be granted only where the documentation indicates that the onset, duration and severity of the illness are such that you could not reasonably be expected to complete your academic responsibilities. **Note** – it will not be sufficient to provide documentation indicating simply that you were “seen for a medical reason” or “were ill.” Whenever possible, students who require academic accommodation should provide notification and documentation in advance of due dates, examinations, etc. You must follow up with your professors and the Academic Counseling office in a timely manner.

Documentation from Family Physicians and Walk-In Clinics

A UWO Student Medical Certificate (SMC) is required whenever you seek academic accommodation. This documentation should be obtained at the time of the initial consultation with the physician or walk-in clinic. An SMC can be downloaded under the Medical Documentation heading of the following website: <https://studentservices.uwo.ca/secure/index.cfm>. Hard copies are available from Academic Counseling.

Documentation from Student Health Services

Students obtaining documentation from Student Health Services should sign a “release of information.” This form authorizes Student Health Services to provide information to your Academic Counselors. Release of information forms are available from, and can be arranged through, the Academic Counselors in the School of Health Studies.

Documentation from Hospital Urgent Care Centres or Emergency Departments

Students should request that an SMC be filled out. You may take this form with them, or request alternative Emergency Department documentation. Documentation should be secured at the time of the initial visit to the Emergency Department. Where it is not possible for you to have an SMC completed by the attending physician, you must request documentation sufficient to demonstrate that your ability to meet your academic responsibilities was seriously affected.

7.3 POLICY ON CHEATING & ACADEMIC MISCONDUCT

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

<http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf>.

8.0 PROCEDURES FOR APPEALING ACADEMIC EVALUATIONS

In the first instance, all appeals of a grade must be made to the course instructor (informal consultation). If you are not satisfied with the decision of the course instructor, a written appeal must be sent to the Program Director. If you consider this response to be unsatisfactory, you may then appeal to the Dean of the Faculty of Health Sciences. If this response is unsatisfactory, you may appeal to the Senate Review Board Academic. A Guide to Appeals is available from the Ombudsperson's Office.