

# Research Design and Statistics for Behavioural Sciences 1

**Instructor:** Dr. Brett Beston ([bestonbr@mcmaster.ca](mailto:bestonbr@mcmaster.ca))  
**Office Hour:** Will be announced at beginning of semester(PC 107)

**Classes:** Tuesday, Wednesday, Friday (JHE 264), 9:30-10:20

**Tutorials:** Tuesday (ITB / AB102), 1:30-2:30 . Attendance is not mandatory, but I recommend that you take advantage of these sessions to complete your assignments under the guidance of the TAs (this will be very helpful)

In this course we will be using ELM (formerly known as WebCT). Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

## Textbook and Software:

Howell, D. C.: Fundamental Statistics for the Behavioral Sciences (6th ed.).  
*Note that this textbook is bundled with the student version of SPSS (version 15).*

### Companion website for the textbook:

<http://www.uvm.edu/~dhowell/fundamentals/index.html>

There are important links on this web site, including links to detailed explanations of practice questions from the textbook.

### Required access to university technology centres:

Lab assignments require SPSS, which is installed in the computer labs. Register for Technology Centre services by getting a MAC ID via MUGSI ([http://www.mcmaster.ca/uts/mugsi\\_reg.htm](http://www.mcmaster.ca/uts/mugsi_reg.htm)) if you have not already done so. Registering gives you full access to the labs, an email account, and web space among other services. Student Consultants are available for general help in using the Technology Centres. For more information, visit the Student Frequently Asked Questions page (<http://www.mcmaster.ca/uts/students/faqs.htm>).

## Course Evaluation:

Evaluation breakdown		
Term tests	Test 1	20%
	Test 2	20%
Assignments	12 assignments	15% (drop lowest 2 assignment grades)
Final examination		45%

There will be 12 assignments for this course. Each assignment will be worth 1.5% of your grade. **The lowest 2 assignment grades will be dropped (best 10 of 12).** Some will require SPSS analysis and output as well as step by step work with a calculator. You will receive an assignment every week and will be required to hand it in one week later (see schedule below). **Late assignments will not be accepted**, and will receive a grade of zero. There will be **no exceptions** to this; if you cannot attend class, you must make alternative arrangements for submitting the assignment prior to the class you will miss. Failure to do so will result in an automatic zero on that assignment.

There will be two mid-terms and one exam. There are no make-up exams. If any exam does not take place on the scheduled date due to weather, facilities, or other unforeseen circumstance, it will take place at the beginning of the next scheduled class. Both exams will be completed during class time. **Specific dates will be discussed in class and posted on WebCT.** There will be a final exam that will be scheduled by the office of the registrar. The exams will cover lecture material and assigned textbook material equally, and will cover material from throughout the course (cumulative), though the final exam will have an emphasis on material covered since the midterm. The format of the exams will be discussed in class. You may bring only an approved calculator, pencils and erasers suitable for multiple-choice scan sheets, and your McMaster student ID card to the exams. An approved calculator is any calculator whose name starts with Casio fx991. Sheets with formulae and statistical tables will be supplied for you.

## Scaling:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59	F = 0-49
A = 85-89	B = 73-76	C = 63-66	D = 53-56	
A- = 80-84	B- = 70-72	C- = 60-62	D- = 50-52	

\*Final marks may be adjusted up or down on an individual basis, in light of special circumstances and or the student's overall performance in the course

## Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour 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 types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

## Schedule of Tentative Topics and Test Dates

Week	Lecture Topic	Chapters	Tests?
1 and 2	Scales of measurement Frequency distributions Measures of central tendency	1,2,3,4 (I know that it's a lot!)	
3 and 4	Measures of variation boxplots, linear transformations normal distribution	5,6	
5	Probability, contingency tables	7	MID-TERM EXAM
6 and 7	Scientific method, logic of hypothesis testing, errors	8	
8 and 9	Correlation	8	MID-TERM EXAM
10 and 11	Central limit theorem, confidence intervals 1-sample t-tests, effect size	12	
12 and 13	Dependent samples t-tests Independent samples t-tests	13,14	
		ALL	FINAL EXAM

**The professor reserves the right to change any and all course requirements if the need should arise. Any change in the course requirements will be posted on the webpage and the details will be announced in class. Any concerns about announced changes should be addressed with the professor as soon as the changes are announced.**