The University of Winnipeg – Department of Psychology
PSYC-2101-001 & 463 Introduction to Data Analysis (Spring 2017)

Lectures: Monday, Wednesday, & Friday 8:30am to 10:20am, Room 2M77
Instructor: Dr. Di Curzio   **Office**: 4L17
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Office Hours: Before/after class or by appointment

Calendar Description:
This lab course introduces basic data analytic techniques appropriate to experimental and non-experimental research designs. Topics include frequency distributions, descriptive statistics (e.g., mean, standard deviation), and inferential statistics (e.g., estimation and hypothesis testing for means, correlation, and count data). The lab component provides an opportunity to develop computational and basic computer skills relevant to data analysis. This course is required for Majors and Honours students in Psychology.

Prerequisite: PSYC-1000(6) – Introductory Psychology
Restrictions: Students cannot receive credit for both PSYC-2101(3) and (a) STAT-1201(6), (b) STAT-1501(3), or (c) STAT-1601(3).

Textbook:
Pagano, R. R. (2013). *Understanding Statistics in the Behavioral Sciences.* (10th Ed.). Belmont, CA: Thomson Wadsworth.
Supplemental readings may be assigned in class.

Course Delivery:
The topics in this course will be taught through lectures, labs, demonstrations, and assignments.

Evaluation:
A. Lectures
Students are responsible for all material presented in Lecture and Lab classes, as well as material in assigned readings, even if not covered in Lecture or Labs. Students will be required to write two tests. The format for these tests may include, but are not limited to, multiple choice, short answer, and statistical problem type questions. Students need to use a calculator. No other electronic devices are permissible to use during the tests. A formula sheet (without labels for the formulae) and statistical tables will be provided. Please bring your student card to all tests for identification purposes.

Term Test #1 - **Wednesday, May 17, 2017** - will be given in class and will be based on assigned readings and materials discussed in class and labs prior to that date. (**Value: 35%**)

Final Test #2 - **Tuesday, June 13, 2017 at 9:00am** - will cover the entire course with emphasis on topics covered in class and labs since the first term test. (**Value: 45%**)

Students will be excused & allowed to write a make-up test if absent on a test date for reasons relating to sickness or death in the family. They may be required to present an appropriate note from a physician. Tests missed without an acceptable excuse will be assigned a mark of zero. They must notify me as soon as possible by telephone, email, or in person before or after missing a test.

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work and/or examinations without penalty. A list of religious holidays can be found at: http://uwinnipeg.ca/academics/calendar/docs/important-notes.pdf

B. Labs
Please consult the lab outline for more detail. (**Value: 20%**)

Grading Procedure:
The maximum number of points possible for this course is 100. A numerical score out of 100 will be determined for each student by totalling the points he or she has earned on the tests and labs. The numerical score determined in this way will be converted to a letter grade according to the following scale: **[The cut-offs are <u>tentative</u> and subject to change in either direction by (i) the professor (ii) the Departmental Review Committee or (iii) the Senate.]**

The translation from marks to letter grades in this course is as follows:

A 85 and over	B+ 75 - 79 C+ 65 - 69	D 50 - 59
A- 80 - 84	B 70 - 74 C 60 - 64	F 0 - 49

A+ at instructor's discretion

Example of Grade Determination
The following table illustrates the grade calculations.

Component	Weight	Mark	Mark X Weight/100
Term Test #1	35%	72%	25.20
Term Test #2	45%	86%	38.70
Lab	20%	84%	16.80
Total	100%		80.70 = 81 Mark

The student in this example would receive a letter grade of A-.

Grades:
Interim and final grades will be posted on Nexus. Grades are not final until Senate approval has been obtained. Note that the final grades can be adjusted in either direction by Senate.

Nexus:
I will be using Nexus to post course materials (e.g., handouts, lecture notes, supplementary problems and solutions, etc.). The URL for Nexus is: https://nexus.uwinnipeg.ca/.

Classroom Courtesy:
All cell phones or other electronic devices should be turned off before entering the classroom. In order to create an environment conducive to learning, students are invited to respectfully give their opinions and contributions to class discussions, bearing in mind the usual courtesies.

We ask that you please be respectful of the needs of classmates and the instructors/professors by avoiding the use of unnecessary scented products while attending lectures. Exposure to scented products can trigger serious health reactions in persons with asthma, allergies, migraines, or chemical sensitivities. Please consider using unscented necessary products and avoiding unnecessary products that are scented (e.g. perfume).

All students, faculty and staff have the right to participate, learn and work in an environment that is free of harassment and discrimination. The UW Respectful Working and Learning Environment Policy may be found online at www.uwinnipeg.ca/respect.

Academic Regulations and Policies:
Students should familiarize themselves with the Academic Regulations and Policies regarding appeals, withdrawal dates, and academic misconduct (such as plagiarism, cheating, and examination impersonation). See Section VII of the 2016-2017 Course Calendar, which can be found online: http://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf

Students facing a charge of academic or non-academic misconduct may choose to contact the University of Winnipeg Students' Association (UWSA) where a student advocate will be available to answer any questions about the process, help with building a case, and ensuring students have access to support. For more information or to schedule an appointment, visit our website at www.theuwsa.ca/academic-advocacy or call 204-786-9780.

Services for Students with Disabilities:
Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at (204) 786-9771 or accessibilityservices@uwinnipeg.ca to discuss appropriate options. All information about a student's disability or medical condition remains confidential http://www.uwinnipeg.ca/accessibility.

Voluntary Withdrawal
The last day to withdraw without academic penalty from this course is **Thursday, May 25, 2017**. **You must formally withdraw from a course. If you simply stop going to classes, you may receive an "F" on your transcript and loss of tuition credit.

Other Important Dates
- University is closed on **Monday, May 22, 2017** for Victoria Day
- Class held on **Monday, June 12, 2017** are in place of class on **Monday, May 22, 2017** for Victoria Day

Tentative Course Timetable

Week of	Topic	Readings
May 1st	Introduction	1 – 4 (**X** pp. 55-61)
May 1st	Standard Scores and the Normal Curve	5
May 8th	Random Sampling and Probability	8
May 8th	Binomial Distribution	9 (**X** pp. 229-230)
May 15th	Hypothesis Testing Using the Sign Test	10
Wednesday, May 17th	**Term Test #1 (35%)**	**1 – 5, 8 – 9**
May 22nd	Sampling Distribution of Mean and Tests for Single Samples (z-test and Student's t-test)	12 (**R** pp. 298-317) 13 (**R** pp. 327-345)
May 22nd	Student's t-test for Correlated and Independent Groups	14 (**R** pp. 356-378) 14 (**R** pp. 379-385)
May 29th	Introduction to the Analysis of Variance	15 (**R** pp. 401-420)
May 29th	Correlation Testing the Significance of Pearson r	6 (**X** pp. 140-142) 13 (**R** pp. 346-348)
June 5th	Linear Regression Chi-Square	7 (**X** pp. 169-171; 175-8) 17 (**R** pp. 482-497)
June 12th	Review	18 (**R** Relevant Parts)

Tuesday, June 13th   Final Exam (Term Test #2) (45%), at 9:00 am in room 3M63 (room may change)

Notes: **R** – Read; **X** – Exclude.

The course timetable is only a guide to topics, as some topics may be added or deleted as time dictates.

Tips on How to Succeed in an Introductory Statistics Course

Success at statistics and other quantitative courses generally requires a somewhat special strategy on the part of students. Here are a few suggestions to consider.

1. *Work at it*. This might seem obvious, but generally people underestimate how much effort and hard work is required to learn statistical material. It is not simply a matter of reading, which itself can be challenging because of new symbols and the somewhat cryptic writing style. In addition to reading carefully, developing your understanding of and (especially) your ability to apply statistical knowledge generally requires that you work through multiple problems.

2. *Work regularly from the start of the course*. Statistical material is cumulative in nature. That is, understanding material earlier in the course is often essential for understanding material presented later in the course. Unless you have learned the earlier work, you will have much difficulty understanding the later work. And as noted in 1, it can sometimes take considerable effort to learn statistical material.

3. *Work with other students in groups*. Courses like statistics often benefit from working with other students in the class. This gives you someone to talk through your difficulties with and often that is enough (even if all of the students initially are equally confused about the material). Working with other students also helps to ensure that you are working regularly at the course and can be a great motivator. The saying, "Misery loves company", was probably written by someone taking a statistics course!

4. *Seek help as soon as you feel the need for it*. In some courses students can let a lack of understanding slide for awhile, and wait for enlightenment to occur. But this strategy is not a good one in quantitative courses because, as noted above, later material depends on earlier material. Ignoring your difficulties early on can create much more serious difficulties in short order. So once you have difficulty, try to clear it up ... reread the material, try more problems, talk to other students, ask the instructor about it (you can bet other students are having difficulty as well, and they will appreciate your question) or visit the instructor during office hours (or request an appointment).

5. *Attend to the specific details*. Some things might seem minor to you at first, but should not be ignored. Learn the names for symbols and operations so that you have a vocabulary to talk yourself through the concepts and calculations. For example, $\Sigma(x - \mu) = 0$ is much more meaningful to read when you know that Σ is called sigma and represents addition or summation, and μ is called mu and represents the mean. Also, learn specifics about your calculators (e.g., how to use its memory to accumulate squared numbers). Attending to seemingly minor details can be very helpful in a course like statistics.