

# Statistical Analysis 1

PSYC 315/2 04 -- FALL 2015 (3.0 Credits)

## Course Information

M & W @ 14:45-16:00 in CC-111

**Professor:** Firas Sedki, PhDc

**Email:** [firas.sedki@concordia.ca](mailto:firas.sedki@concordia.ca)

\*Include "PSYC 315" in subject line\*

**Office:** SP 353.09

**Office Hours:** By appointment

## Lab Information

All labs meet in CC-215

**LAB 10:** M @ 16:15-17:45

**TA:** Maria ([psyc315.santaguida@gmail.com](mailto:psyc315.santaguida@gmail.com))

**LAB 11:** J @ 10:15-11:45

**TA:** Unknown ([unknown@gmail.com](mailto:unknown@gmail.com))

**LAB 12:** J @ 15:00-16:30

**TA:** Sarah ([sarah.etezadi@concordia.ca](mailto:sarah.etezadi@concordia.ca))

## Course Description & Objectives

This course is an introduction to descriptive and inferential statistics that are used in the context of psychology research. Topics include: frequency distributions, measures of central tendency and dispersion, the normal curve, correlation, linear regression, elementary probability theory, an introduction to hypothesis testing, the t test, confidence intervals, effect sizes, and power. The main objective is to learn about the field and study of basic statistics; namely, the fundamental ideas and the most commonly used techniques to organize and interpret groups of numbers. Throughout the course, examples of basic principles will be discussed as they apply to real-life settings. The course will emphasize understanding the calculation of various statistics; this will be achieved through hand calculations with simple calculators and practical exposure to the SPSS computer package to analyze statistical data in weekly laboratory sessions.

## Course Textbook & Materials

Nolan, S.A. Heinzen, T.E. (2014). **Essentials of Statistics for the Behavioral Sciences. 2<sup>nd</sup> edition.** New York, NY: Worth Publishers. (Available @ bookstore & on reserve at Vanier Library)

**SPSS** Statistical Software. Available on university laboratory computers (or via purchase online).

**iClicker2** or **iClicker REEF** (Available @ bookstore, App Store or online at [www.iclicker.com](http://www.iclicker.com))

**Non-graphing calculator** (Available @ bookstore)

## Course Handouts

All course notes and worksheets are posted on the Moodle course website. Students are highly encouraged to download and print out notes **prior** to the lecture, as handouts will **not** be distributed in class.

**How to access course website:**

[www.myconcordia.ca](http://www.myconcordia.ca) >> Sign in using your Netname & Password >> Select "PSYC315 2015/2" course from under the My Moodle Courses on the left column.

## Grading

Grade Breakdown	
Midterm	30%
Final Exam	40%
Participation	5%
Labs	25%
<b>Total:</b>	<b>100%</b>

Lab Breakdown	
Lab 1	5%
Lab 2	5%
Lab 3	5%
Lab Exam	10%
<b>Total:</b>	<b>25%</b>

Grading Scale	
A+	90-100%
A	85-89%
A-	80-84%
B+	76-79%
B	73-75%
B-	70-72%
C+	66-69%
C	63-65%
C-	60-62%
D+	56-59%
D	53-55%
D-	50-52%
F	< 50%

Typical average for this course based on previous semesters is **B/B-**

**NOTE:** Failure to complete any component of the course will result in a failure of the class! Furthermore, the professor reserves the right to 'bell curve' the grades if necessary.

## Lecture Based Exams - 70%

One **midterm** and one **final exam**. Exams consist of multiple-choice, fill in the blanks, true/false and long/short-answer questions based on solving problems using hand calculations, understanding rationale behind formulas, application of statistical principles, and interpretation of SPSS analyses. Material covered on the exams will be taken from the assigned readings and class lectures. Due to the inherent nature of statistics, **exams are cumulative**; however, the predominant emphasis will be on the noted modules.

On both exams, you will be permitted to use **#2 pencils, a calculator, and a "cheat sheet."** The cheat sheet is one 8½ x 11 piece of plain paper with **handwritten material only** (no photocopying or computer generated materials). You may write formulas, definitions, or draw images/figures on the front and back. You will be able to use a calculator with simple functions only (e.g., square root function). Programmable, graphing, or statistical calculators are not allowed during the exams. Cell phones and tablets are not permitted during exams. Normal distribution tables and unlabeled statistical formulas will be provided.

## Make-Up Exam Policy

Out of fairness to other students, I will not schedule makeup midterm exams, except in emergencies (**official professional documentation is mandatory**; e.g., dated physician's letter of medical leave, funeral home certificate, police report). Such situations will be resolved at the instructor's discretion on a case-by-case basis. If permitted, **makeup midterm exams will be given in an oral exam format** with the instructor. Missed exams will result in a grade of zero. Conflicts with the scheduled final exam must be handled through the Examinations Office.

## Class Participation - 5%

Classroom participation during lectures accounts for **5% of the grading scheme**. Participation throughout the lectures consists of questions from the assigned reading material for that day and from problems presented during class. **iClicker will track class participation, not response accuracy. Students are responsible for remembering to bring their clicker to every lecture and to register their iClicker.** It is also their responsibility to ensure the iClicker is working (e.g., batteries). **Participant pool credits may be applied to up to 3% (of the 5% total) of class participation only** (6 participant pool credits = 3 class participation points). Class participation cannot exceed 5%, regardless of the number of participant pool credits obtained.

## Participation Pool Details

The department has a participant pool that offers course credit for participation in research being conducted in the department. You can find details about the participant pool through the department's website:

<http://psychology.concordia.ca/researchandcentres/participantpool/index.php>

The pool offers one participation credit for each hour that you participate in research, to a **maximum of 6 credits** that can be applied to this class. **Each credit is worth 0.5 % towards your 5% class participation only.** (i.e. your participant pool credits cannot be applied toward the 95% for your lab assignments, midterm, nor final exam). Participation is voluntary and your grades will not be affected if you do not participate. Please review the Information for Participants documentation, outlining the consequences for missed appointments. You must have your credit assigned to this course (**PSYC 315/2, Lec 03**).

## Labs - 25%

In addition to the lectures (Mondays & Wednesdays from 11:45 to 13:00 in CC-115), you are **required to attend Labs** as well.

Be sure you are registered and attend the labs as this component is worth **25% of your final grade**. Materials discussed in the lab will teach you the practical material necessary to complete the assignments.

**Worksheets (not the same as the assignments)** posted on the course website are extra materials and are not necessary. No grades will be awarded for the worksheets, the only reward will be that of knowledge!

If **you are in doubt** about instructions for any assignment, it is **your responsibility** to ask for clarification.

## Lab Assignments

The lab component will include **three lab assignments & one lab exam**. The purpose here is to teach the practical, "hands on" experience of managing data, conducting analyses, interpreting statistical tests, and reporting results. The assignments directly complement the lecture material. The lab assignment (data analyses) will be explained during your lab. You will write your results (**in APA style**), in and outside of the lab.

**Each assignment is worth 5%.** It is considered **1-day late if it is not submitted within the first 5 minutes of your lab section**. For each day late, your grade will be penalized by 1% (of a 5% total). After 5 days late, you will receive no credit for your lab assignment. Lab assignments are graded "blind"; do not write your name anywhere on your assignment. Do not delete any pages from your assignment; write your ID number on all pages of the assignment.

## Electronic Devices

**Recording:** You may **NOT** record (audio) the lectures without explicit permission from your professor. If you are given explicit permission, you may **NOT** at any post these recordings online. Video recordings are forbidden.

**Use of other electronic devices & class disturbances:** You may use your computers and iPads (or iPhones for the iClickerREEF) to take down lecture notes. However, if the use of such devices becomes a disturbance to the professor or other students in the lecture you will be given a warning. Following this warning, and if the issue persists, you will be asked to leave the class. This policy applies to other disturbances not caused by the use of electronic devices as well.

## Plagiarism

The most common offence under the Academic Code of Conduct is plagiarism which the Code defines as “the presentation of the work of another person as one’s own or without proper acknowledgement.” This could be material copied word for word from books, journals, internet sites, professor’s course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. “Presentation” is not limited to written work. It also includes oral presentations, computer assignments and artistic works. Finally, if you translate the work of another person into French or English and do not cite the source, this is also plagiarism. **In Simple Words: Do not copy, paraphrase or translate anything from anywhere!**

**By choosing to remain in this class, it is assumed that all students have read and understood and agree to abide by these policies.**

Source: <http://www.concordia.ca/students/academic-integrity/code.html>

## Concordia Services Available to Improve your Academic Experience

**Psychology Department Academic Advisors:** (514) 848-2424 ext. 2222 for appointment

**Concordia Counseling and Development:** Offers career services, psychological services, student learning services, etc. <http://cdev.concordia.ca/>

**The Concordia Library Citation and Style Guides (APA):** <http://library.concordia.ca/help/howto/citations.html>

**Advocacy and Support Services:** <http://supportservices.concordia.ca/>

**Student Transition Centre:** <http://stc.concordia.ca/>

**New Student Program:** <http://newstudent.concordia.ca/>

**Access Centre for Students with Disabilities:** <http://supportservices.concordia.ca/disabilities/>

**Student Success Centre:** <http://studentsuccess.concordia.ca/>

**The Academic Integrity Website:** <http://provost.concordia.ca/academicintegrity/>

**Financial Aid and Awards:** <http://web2.concordia.ca/financialaid/>

**Health Services:** <http://www-health.concordia.ca/>

**You are expected to familiarize yourself with guidelines set by Concordia as well as the policies presented in this outline. By remaining in this course, you are agreeing to abide by all the guidelines and policies. Furthermore in the event of extraordinary circumstances I reserve the right to alter the evaluation scheme or course content.**

## Tentative Outline

Module/Lab	Topic	Reading
1	Syllabus Review & Introduction: Branches of Statistics	CH 1
	Introduction (cont'd): Measurement Levels (Nominal, Ordinal Scale)	CH 1
	Frequency Distributions, Distribution Shapes	CH 2
	Graphic Representations, Visual Display of Data	CH 3
	Measures of Central Tendency (Mean, Median, Mode)	CH 4
	Measure of Variability (Range, Variance, Standard Deviation)	CH 4
2	Sampling Distributions	CH 5
	Sampling Distributions (cont'd)	CH 5
	Probability	CH 5
	The Normal Curve	CH 6
	Standardization & Z-Scores	CH 6
	Hypothesis Testing	CH 7
	Z-tests	CH 7
Oct 12	<b>Thanksgiving</b> - University Closed -- <b>Make-up day on Tuesday Dec 8</b>	<b>Study!</b>
Oct 28	<b>Midterm - Modules 1 - 2</b>	CH 1-7
3	Confidence Intervals, Effect Size & Statistical Power	CH 8
	Confidence Intervals, Effect Size & Statistical Power	CH 8
	Single Sample t-test	CH 9
	Paired Sample t-test	CH 9
	Independent Samples t-test	CH 10
	Independent Samples t-test	CH 10
4	Correlation	CH 13
	Correlation (Cont'd)	CH 13
	Simple Linear Regression	CH 14
	Simple Linear Regression (cont'd)	CH 14
Dec 8	<b>Final exam review - Modules 1-4</b>	<b>Cumulative</b>
Dec 9-22	<b>Final Exam - Modules 1-4 - TBA</b>	CH 1-10, 13-14