

**Department of Psychology**  
**PSYC 2016H-A: Basic Research Methods and Statistics I**  
**Fall 2011 Oshawa**

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Psychology Dept.	LHS C104, 705-748-1011 ext. 7535		

**Course Description:** *An introduction to methodological, statistical and computer techniques in psychological research and the application of these techniques to empirical research in the discipline. The focus is on descriptive statistics, an introduction to probability, correlation procedures and basic research methodology used in psychology. Also, an introduction to APA style and formatting.*

**Prerequisite:** A grade of 60% or higher in both PSYC 1020H (102H) and 1030H (103H) (or in PSYC1010Y or 101) Excludes PSYC 215.

**Course Format:**  
**Lecture:** Tuesday 11:10 - 2:00pm [TN 121]

**Computer Lab** (WebStatistica) Wednesdays [11:10 – 1:00 pm TN 112]. For statistical analyses, WebStatistica (a web-based statistics program) is available on-line through a dedicated Trent WebStatistica server (can be through link on WebCT (details in class) or directly: <https://webstatistica.trentu.ca/> . *Students are expected to conduct statistical analyses for labs and worksheet assignments, etc., using WebStatistica.* The lab time will also be used for discussion of APA issues.

**Required Readings:** [www.trentu.ca/academicintegrity](http://www.trentu.ca/academicintegrity)  
 American Psychological Association (2010): 1.10 (pages 15 - 16) and 6.0.1 (page 170)

**Required Texts:** Nolan, S.A., & Heinzen, T.E. (2012). *Statistics for the behavioral sciences* (2<sup>nd</sup> ed.). New York, NY: Worth.

Leary, M.R. (2012). *Introduction to behavioral research methods* (6<sup>th</sup> ed.). Boston, MA: Pearson Publishing.

American Psychological Association (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, D.C.: Author

**Recommended Text:**  
 Mitchell, M. L., Jolley, J. M., & O'Shea, R. P. (2010). *Writing for psychology* (3<sup>rd</sup> ed.). Belmont, CA: Wadsworth.

Evaluation:	1. Lab Report	10%
	2. (Home)Work Assignment Sheets (8 @ 2.5%)	20%
	3. Quizzes (7 @ 3 % each)	21%
	4. Term Test	24%
	5. Final Examination	25%
	6. SONA – bonus marks (research participation)	4%

**It is the responsibility of each student to read and accept the due dates outlined on the course syllabi.**

Learning Outcomes: *By the time you have successfully completed this course you should be able to:*

1. Be able to recognize and understand basic statistical notation, formulae, and concepts.
2. Develop an in-depth understanding of many of the fundamental ideas of statistics, such as frequency distributions, central tendency & variability, association, causation, prediction & probability, data transformation as well as a critical perspective with which to analyze and assess statistical arguments such as one encounters in the popular press as well as in scholarly publications.
3. Apply the ideas from 1 and 2 above in terms of statistical calculations, using a calculator and/or a computer-based statistical program.
4. Apply statistical ideas and formulae to novel situations. Interpret the results of statistical calculations.
5. Apply the concepts previously outlined to understanding and reviewing psychology journal (research) articles; as well as apply / understand / utilize APA publication style.
6. Have a general understanding of the scientific method and how it is applied in psychology.
7. Develop & apply computer skills necessary to conduct a variety of data analyses.

Explanation of Assignments

**1. Lab Reports:** One laboratory will be conducted during the course.

The purposes of the lab are:

- 1) to provide hands on experience in the application of techniques to real psychological data;
- 2) to develop lab report writing skills;
- 3) to determine the power of the scientific method for the study of diverse psychological questions;
- 4) to encourage analytical thinking skills with respect to statistical and psychological issues; and
- 5) to develop skills necessary for finding and reporting relevant scientific articles and other information pertinent to the lab.

6) to become familiar with APA style.

Students are expected to participate in gathering data for the lab.

Students are strongly encouraged to use the Leary (2008 / 2012) text and the APA publication manual (2010) as guides to proper APA style.

*Readings concerning the lab assignments will be placed on electronic reserve (e-reserves) at the Trent (Bata) library and may be placed on reserve in the Trent Oshawa library. Additional materials will be available via WebCT. The lab write-up will include having the student find journal articles that are current and relevant to the lab topic.*

**Lab reports must be written in the format specified in the Publication Manual of the American Psychological Association (2010). Also, see the Leary (2008 / 2012) text for a full chapter on scientific writing (Chapter 15 [2008] / Chapter 16 [2012]).**

*On-line access to articles / items on reserve and electronic reserves (e-reserves):*

The "core" articles as well as other items pertaining to the lab can be accessed directly (online) through the e-reserves section of the Trent library ([www.trentu.ca/admin/library](http://www.trentu.ca/admin/library)). These items will appear as Adobe (.pdf) files. Details on how to access these items will be provided in class.

**The lab will be completed and submitted in sections. See the course outline for submission dates of the various components.**

The various components of the laboratory assignment must be submitted on or before the due date(s) (*at the beginning of the lecture*). A penalty **will** be imposed for late submissions. Extensions may be granted for medical (please submit letter from a physician) or compassionate reasons (documentation required). If a submission is late without approved extension, **it will be penalized at the rate of 10% per school day** (i.e., Monday - Friday). Thus, if a lab report is submitted two (2) days late and the report is assigned a grade of 75%, it would receive a final grade of 55%. *Reports more than 10 days late will be assigned a grade of zero.*

**Under no circumstances will a late submission be accepted after assignments have been marked and returned.**

**2. (Home)Work Assignment Sheets:** Will consist of a set of statistical or method or APA format problems for the student to solve. The assignments will also include end-of-chapter questions from the Nolan & Heinzen text. These will provide more practice and familiarization with various aspects of computations and calculations. *Unless otherwise specified the work sheet is to be submitted at the beginning of the following class.* Work sheets will be assigned and distributed (via WebCT) as necessary.

**Homework sheets will not be accepted after the due date (NO EXCEPTIONS).**

Please note that end-of-chapter questions competent of the homework sheet **MUST** be hand written [Include all computations] on ruled paper (graph paper can also be utilised)(**Neither typed nor printed nor photocopied responses to end-of-chapter questions are acceptable**). **End-of-chapter questions are to be stapled to the worksheet.**

**3. Quizzes:** There will be a quiz on certain dates [as shown on the course outline]. *Each quiz will test material learned since the previous quiz* (usually, though not always on the subject matter from the previous lecture). Generally, a quiz will last 15 - 25 minutes. Quizzes will always be held at the beginning of the class. Each quiz will be worth 3%.

**If you miss a quiz, you will forfeit the mark for that specific quiz**

**(NO EXCEPTIONS).** *Formulae & tables will be provided.* **PLEASE ENSURE THAT YOU BRING A CALCULATOR – CALCULATORS WILL NOT BE PROVIDED.**

**4. Term test:** The term test (2 - 3 hours) is scheduled for **Tuesday 1 November** and will test material covered since the beginning of the term. The term test will consist, predominately, of multiple-choice questions, *though other formats may also be included*. Information covered will include knowledge from the required texts and lectures. Formulae and tables will be provided as

necessary. Students are expected to arrive on time and to have calculators. **STUDENTS CANNOT USE ANY OTHER DEVICE EXCEPT A CALCULATOR - DEVICES CONTAINING CALCULATOR FUNCTIONS [SMART PHONES / CELL PHONES / ETC ARE NOT ACCEPTABLE]**

**5. Final exam:** The Final exam (3 hours) is scheduled for **Tuesday 13 December** and will cover material presented after the first test and will *emphasize all material covered since the term test*. The final examine will consist, predominately, of multiple-choice questions, *though other formats may also be included*. Information covered will include knowledge from both required texts and lectures. Formulae and tables will be provided as necessary. Students are expected to arrive on time and to bring a calculator.

**6. *Highly similar or identical submissions as well as plagiarized work submitted as a course requirement [e.g., labs, worksheet assignments, end-of-chapter questions] WILL be heavily penalized and will be sent to the Chair of the psychology department according to university policy.***

<p>Course Policy on Late Submissions</p>	<p><b>Assignments / homework sheets / labs / are due at the beginning of class. Late assignments / homework sheets / labs / will be penalized at the rate of 10% per school day (i.e., Monday - Friday). Thus, if a homework sheet is submitted two (2) days late and the report is assigned a grade of 75%, it would receive a final grade of 55%. Work submitted more than 10 days late will be assigned a grade of zero. Under no circumstances will a late submission be accepted after assignments / homework sheets / labs have been marked and returned.</b></p>
<p>Course Policy on attendance in class/labs</p>	<p><b>Students are <u>expected</u> to attend all scheduled lectures and computer / APA labs. There are no marks attached to attendance.</b></p>

Workshops: The workshops are designed to: 1) provide a forum for discussion of methodology and design issues in psychological research; 2) to clarify and exemplify the statistical concepts and techniques discussed in the test and lectures; 3) to allow students to work on problems; and 4) to acquire skills in computerized statistical analyses using *WebStatistica*. Some of the workshops will also be used as part of the laboratory component for the course, to help students understand and apply APA style.

Students are strongly encouraged to attempt problems in the text and from other sources (such as a study guide and/or questions, calculations and others items accessed through the text website) as well as problems assigned in class using computational methods taught in the course and then to analyse these same problems using *WebStatistica*. This is important since hand calculations and computer data analysis will be required for a variety of assignments.

**Students are responsible for information in the texts that is not covered in the lectures.**

**INSTRUCTOR'S NOTES:**

**Note 1:** All submitted work should be typewritten, double-spaced with at least inch (2.54 cm) margins and **MUST** conform to the American Psychological Association standards. ***This means that the style of writing, citations and quotations for the lab assignment should conform to the APA Publication Manual of the American Psychological Association (6th ed.)***.

As an aid to writing and research in Psychology students **may** consult: Mitchell, M. L., Jolley, J. M., & O'Shea, R. P. (2010). *Writing for psychology: A guide for students*. Belmont, CA: Wadsworth. Both the APA manual and Mitchell et al. (2010) texts are available in both the Bata Library (Trent University) and the Trent Oshawa library.

**Note 2: Due Dates:** Lab reports and worksheet assignments must be submitted on the due date, **at the beginning of class**. Extensions will *only* be granted in documented cases of **serious illness** or compassionate grounds and only if arranged **before** the due date [documentation required]. **Late lab reports and assignments will be penalized 10% per day overdue.** Lab reports must represent independent work. **Highly similar (or identical) assignments or labs as well as evidence of plagiarism will be penalized (see Note 3 below).**

**Under no circumstances will a late submission be accepted after lab reports or assignments have been marked and returned.**

**Note 3. PLEASE NOTE: TWO OR MORE STUDENTS SUBMITTING AN IDENTICAL LAB OR ASSIGNMENT WILL BE PENALIZED.** (Also see University policies on pages 9 & 10).

**Note 4:** *It is the responsibility of the student to ensure that written assignments (e.g., essays, labs, worksheets, etc.) are **handed directly to the professor** on or before the due date (**at the beginning of the lecture**).* **The professor assumes no responsibility** for locating and grading assignments handed in to the Department of Psychology, the Trent University Oshawa office or at any other location. The professor will neither grant extensions nor waive penalties for assignments that are claimed by the student to have been submitted and have not been received by the professor. **Please Note: The Trent Oshawa Office will not accept written work on behalf of a professor.**

*Never place an assignment under an office door and assume that the appropriate professor will receive it!*

**Please ensure that you have at least two additional copies of your work stored and/or scanned and/or printed.**

**Note 5:** On occasion a student may be unable to write a **term test** in the regular period due to *serious* illness (please submit a letter from a physician) or some other exceptional circumstance or compassionate reasons (for which documentation will be required). In such cases, the student should contact the instructor **before** the regularly scheduled test period, or if this is not possible, as soon as possible following the term test. If the instructor is notified of the circumstances in good time, then arrangements can be made to deal with the situation, otherwise a grade of **zero** will be assigned.

**Note 6:** *MyLearningSystem* (WebCT) is an established feature of this course, using a dedicated website through the Trent university computer department. Only students enrolled in this course will have access to this website, where various materials (e.g., course syllabus, course calendar, summary notes, links to websites, supplementary course materials, etc.) are easily accessible to the student. To access the *myLearningSystem* site, you will need your Trent university email address (username) and your student number (password). **It is important to check MLS each day of the semester.** To ensure announcements presented on the MLS web site are viewable: It is important that your web browser is set to allow pop-ups.

**Note 7:** **All email correspondence with students will be sent to the student's Trent University email address.** If you use an alternate email account, please ensure that your Trent email address **forwards** email to that address. Consult on-line information at the Trent University website for help with forwarding email ([www.trentu.ca/it](http://www.trentu.ca/it)). *It is important that you check your Trent email account on a daily basis.*

**Note 8:** Under some circumstances, essays and/or laboratory reports cannot be returned to the students by the time the final exam is written. Because it is against the policy of the psychology department to leave student essays or labs for pickup, students who wish to receive their essays and/or labs should, when they are handing in their work, submit a stamped, (at least \$2.50) self-addressed manila envelope (firmly attached to the essay/lab).

**Note 9:** To aid in the demonstration / comprehension of various statistical concepts, procedures, and processes: It is important to always bring your Nolan & Heinzen (2012 / 2008) text with you to the lectures.

**Note 10:** **The use of cell phones and laptop computers during lectures is strictly prohibited. Students using these devices during the lecture will be asked to turn the device off.**

**Note 11:** **PLEASE NOTE THAT ALL COURSE COMPONENTS (E.G., ASSIGNMENTS, QUIZZES, & TESTS) ARE EXPECTED TO BE COMPLETED IN FULL AND ON TIME (SUBMITTED BY THE DUE DATE/TIME OR COMPLETED AT A PARTICULAR TIME/DATE) REGARDLESS OF OTHER ON-GOING CONCERNS (E.G., JOB RESPONSIBILITIES; TRAVEL ARRANGEMENTS; VACATION PLANS; OTHER OBLIGATIONS).**

**EARLY SUBMISSIONS ARE ALWAYS WELCOME!**

**Note 12:** *Failure to complete one or more marked components of the course means forfeiting the marks associated with that component.*

**Note 13:** Students may be able to use the 1<sup>st</sup> edition of the Nolan & Heinzen (2008) text and the 5<sup>th</sup> edition of the Leary (2008) text though it will be the responsibility of the student to recognize and understand the differences between the different editions of the texts in regards to the material covered, computational differences, questions from texts, changes in chapter order / contents, etc. This is essentially due to the fact that different editions can and may include a variety of differences in the topics covered / omitted.

**Chapter numbers in the course outline correspond to the latest editions of each text.**

**Note 14:** The lectures and some other course materials are copyright © Dr. Jeffrey Adams or the Department of Psychology at Trent University. Students cannot in any way or by any means record or broadcast or distribute or publish the information presented in lectures or through the WebCT (*MyLearningSystems*) website without the expressed permission of Dr. Adams.

### **Participation in Research- Sona System**

Voluntary participation in departmental research provides an opportunity to earn up to an additional 4% to be added to your final grade. See details on your class website. Additional information can be referenced on the Psychology Departmental website at: <http://www.trentu.ca/psychology/researchparticipation.php>

Through voluntary participation in four hours of research conducted by Psychology faculty and senior students, students in this course may earn an additional 4% to be added to their final grades. Thus, for example, a grade of C+ (68%) would become B- (72%) for a student who participated for the maximum of 4 hours, with each hour of participation earning 1%.

As an **alternative** to participation in research, students can complete the following activities to earn an additional 2% to their final mark. A total of two alternatives can be completed for a total of 4%.

a Attend a Department of Psychology colloquia during the academic year and write a brief report (500 words)

on the contents.

b Write a 750 word report on a psychology journal article (supplied by course instructor)

Regardless of which option is chosen, the 4% bonus credit can only be earned if the typed report is submitted to course instructor by **9 December, 2011**.

**Student may complete any combination of research or assignments to acquire the bonus 4% credit.**

To find out what research is currently available for you to participate in, please login to the Psychology Research Participation System at <http://trentu.sona-systems.com/>

The Student User Guide that explains how to login, sign up for studies, and track credits is available off the Psychology website <http://www.trentu.ca/psychology/>

Look for the link entitled "Research Participation Pool".

**When you sign up please note that it is your responsibility to accurately register the correct course code (i.e., registering with the wrong course code will impede assignment of bonus credits).**

## PSYC 2016H-A OSH FA2011 Schedule

Date	Topic	Reading	Workshop	Quiz	Worksheets / Lab items
13 Sept.	Course overview; + Scientific method & research logic	L. Ch. 1 & N & H Ch. 1	NO		
20 Sept.	Measurement, frequencies & percentiles	N & H Ch. 2	YES		Submit arithmetic skills worksheet*  Lab data collection
27 Sept.	<b>Central tendency</b> [Mean / median / mode] [displaying / graphing data]	N & H Chs. 3 & 4 L: Ch. 6		QUIZ 1	Submit frequency worksheet
4 Oct.	<b>Variability</b> [sum of squares / variance / standard deviation / range]	N & H Chs. 4 L: Ch. 6	YES	QUIZ 2	Submit central tendency worksheet
11 Oct.	Z-scores	N & H Ch. 6 N & H Ch. 7 [165-172]	YES	QUIZ 3	Submit variability worksheet
18 Oct.	Normal curve [+ more on z-scores]	N & H Ch. 6	YES	QUIZ 4	Submit z-score worksheet  Submit lab introduction
25 Oct.	<b>READING WEEK</b> <b>[NO CLASSES]</b>	24 - 30 October	NO		
1 Nov.	<b>TERM TEST</b>	N & H: 1, 2, 3, 4, 6, & 7  L: 1	NO		Submit Method section of lab

\* Worksheet assignments are always due the week after they have been released

Continued →

Date	Topic	Reading	Workshop	Quiz	Worksheets / Lab items
8 Nov.	Correlation (+ <i>significance in correlation</i> )	N & H Ch. 15 + L. Ch. 7	YES		
15 Nov.	Prediction & Error (regression)	N & H Ch. 16	YES	QUIZ 5	Submit correlation worksheet
22 Nov.	Probability	N & H Ch. 5	NO		Submit regression worksheet Submit lab results section
29 Nov.	Reliability, validity and control	L. Chs. 2 & 3 N & H Ch. 15 (pp.417-418)	NO	QUIZ 6	Submit probability worksheet Submit discussion & reference sections of lab
6 Dec.	Quasi-experimental design	L. Ch. 13 + WebCT notes	NO	QUIZ 7	
<b>13 December</b>	<b>FINAL Exam</b>	<b>N &amp; H: 4, 5, 6, 15 &amp; 16 + L: 2, 3, 7 &amp; 13</b>			

**\* Worksheet assignments are always due the week after they have been released**

### University Policies

#### ACADEMIC INTEGRITY:

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from a 0 grade on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's *Academic Integrity Policy*. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent's Academic Integrity website to learn more – [www.trentu.ca/academicintegrity](http://www.trentu.ca/academicintegrity).

#### ACCESS TO INSTRUCTION:

It is Trent University's intent to create an inclusive learning environment. If a student has a disability and/or health consideration and feels that he/she may need accommodations to succeed in this course, the student should contact the Disability Services Office (BL Suite 109, 748-1281, [disabilityservices@trentu.ca](mailto:disabilityservices@trentu.ca)) as soon as possible. Complete text can be found under Access to Instruction in the Academic Calendar (page 14).

#### CLICKERS:

As clicker records are used in this course to compute a portion of course grades, the use of a clicker other than your own is an academic offence. In lecture or tutorial, possession of more than one clicker or that of another students, may be interpreted as intent to commit an academic offense.

### Departmental Policy on Tests, Exams, and Assignments

#### A. MIDTERMS & FINAL EXAMINATIONS

Midterm examinations for half courses within the Psychology Department are scheduled by the instructor of the course. Midterm examinations for full courses and final examination for all courses are scheduled by the Registrar's Office. Students are strongly urged NOT to make any commitments (i.e., vacation, job related, or other travel plans) during either the term as a whole or the final examination period. Students are required to be available for all examinations during the periods for which they are scheduled (as published in course syllabi).

**B. DEFERRAL OF MIDTERM / FINAL EXAMINATIONS and/or TERM WORK**

Extensions of deadlines for completion of assignments or writing of midterms/final examinations may be granted to students on the basis of illness, accident, or other extreme and legitimate circumstances beyond their control. Consideration for deferrals will not normally be granted on the basis of vacation/travel plans or job-related obligations.

**C. SUPPORTING DOCUMENTATION**

Students should expect that supporting documentation will be required and must be submitted before a deferral is approved. For illness or accident, supporting documentation will take the form of: (1) the Trent University Medical Certificate from Health Services: (<http://www.trentu.ca/healthservices/medical.html>), or (2) a certificate or letter from the attending physician clearly indicating the start and end dates of the illness and the student's inability to write an examination, complete assignments, and/or attend classes, as relevant to the particular request. For other circumstances, students should consult the individual Psychology faculty member about acceptable forms of documentation.

**Special Note:**

Written assignments will not be accepted by staff in the Trent in Oshawa office. They must be submitted directly to the course instructor. Marked assignments will not be left in the Trent in Oshawa Office for pick up; they will be returned to students in class or by mail if a stamped, self addressed envelope is provided.

**Notes****1. Academic Integrity:**

For the purpose of interpreting and applying the University policy on academic dishonesty, the Department of Psychology has adopted the following:

*When a student submits a piece of written work in fulfillment of an assignment, he/she implicitly acknowledges the following: a) that she/he is the sole author of the work; b) that the wording and organization of the work, apart from acknowledged quotations, is her/his own; and c) that she/he has not and will not submit this work, either as a whole or in part, to satisfy another course requirement. These basic assumptions will be reasonably interpreted. They do not preclude collaboration between students upon a single project, by prior arrangement with the instructor, for shared academic credit (either for written or oral presentation).*

For an elaboration of the Department's policy on, and for specific examples of, plagiarism, students should consult the sections on academic honesty of the APA manual (6<sup>th</sup> ed. Section 1.10 (pages 15-16) and 6.0.1 (page 170)). Students who have doubts about what might be considered academic dishonesty are urged to consult the instructor of the course. Ignorance of the University or Department policy does not excuse academic dishonesty. Submissions that fail to meet one or more of these considerations will be subject to procedures laid down in the policy on academic dishonesty as stated in the University calendar.

2. It is the policy of the Department NOT to accept faxed / emailed assignments.
3. The same assignment cannot be submitted in more than one course without the prior written permission of all instructors concerned. The written approval must be attached to the work when it is submitted.
4. Students are required to use American Psychological Association style (6<sup>th</sup> edition) or as described in Mitchell et al. (2010), for all written assignments.
5. **Please see the Trent University academic calendar for University Diary dates, Academic Information and Regulations, and University and departmental degree requirements.**
6. **Last date to withdraw from a FA half-term course without academic penalty in 2010-2011 is November 12, 2010.**