

**ANALYSIS OF BEHAVIOURAL DATA**  
**PSYC 218, Section 006, 3 credits**  
**Term 2, 2014 - 2015**  
**T Th 2:00 pm - 3:30 pm, AERL 120**

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**Required Course Materials:**

1. Pagano, R. (2012). *Understanding Statistics in the Behavioral Sciences (10th Edition)*.
2. Francis, G., and Neath, I. (2015). *CogLab Online 5.0 Printed Access Code*.
3. Cuttler, C. (2014). *A Student Guide to SPSS (2nd Edition)*, including access code for free download of SPSS 22.
4. iClicker.
5. Non-programmable calculator.

Items 1 and 2 are available for purchase together in a single bundle at UBC bookstore. If you obtain item 1 elsewhere, you may purchase item 2 online by going to [www.nelsonbrain.com](http://www.nelsonbrain.com), then entering ISBN 9781285461083. You may also purchase item 3 online as an ebook, by going to [www.kendallhunt.com/cuttler](http://www.kendallhunt.com/cuttler).

A copy of Pagano's text (item 1) and Cuttler's guide (item 3) will be placed on 2-hour reserve at Koerner Library. In addition, you may access SPSS on computers in BUCH B101. This room is a drop-in computer lab whose doors are self-unlocked from 8:00 am to 6:00 pm, Monday to Friday. The computers automatically shut down at 10:00 pm nightly. You may activate your UBCcard for unlocking the doors by visiting the Arts ISIT Help Desk in Buchanan C113. Note that the room is occasionally booked and therefore unavailable. On the course Connect website (under Web Links), you will find a link to the schedule indicating the days/times BUCH B101 is unavailable.

**Course Objectives:** PSYC 218 is a course in statistical data analysis, designed to provide an introduction to descriptive and inferential statistics in the behavioural sciences. The course has a lecture component and a lab component. The main aim of the lectures is to give you a conceptual understanding of a number of statistical techniques, as well as the ability to carry out many of these techniques by hand. The primary goal of the labs is to provide you with experience in working with actual research data and in carrying out a range of data analytic procedures using computer software (i.e., SPSS). By the end of the course, you should have gained solid theoretical and applied knowledge of a variety of fundamental statistics used by behavioural scientists.

**Pre-requisite:** PSYC 217 and a major in Psychology, Cognitive Systems, or Speech Sciences.

**Course Requirements and Grading:** Your grade in this course will be based on your performance on four required elements, weighted as follows:

- |                                   |     |
|-----------------------------------|-----|
| 1. Examinations:                  | 70% |
| 2. Laboratories:                  | 24% |
| 3. Research Experience Component: | 3%  |
| 4. iClicker Participation:        | 3%  |

**1. Examinations (70%).** You will be required to take three exams: two midterms and a final. The midterms will be written in class on **Tuesday February 10** and **Thursday March 17**. The final exam will be scheduled by the Registrar during the final exam period (**April 14 to April 29 inclusive**). You may (and should) bring your non-programmable calculator to the exams. You must bring UBC photo identification to all exams.

**Midterm 1 (February 10):** The first exam will be given in class and is worth **20%** of your final grade. It will focus on Chapters 1-7 of the textbook and the corresponding lectures. The exam will contain a mix of multiple-choice and written questions.

**Midterm 2 (March 17):** The second exam will also be given in class and is worth **20%** of your final grade. It will focus on Chapters 8-11 of the textbook and the corresponding lectures. The exam will contain a mix of multiple-choice and written questions.

**Final Exam (Date TBA):** The final exam will be scheduled during the official exam period (**April 14 to April 29 inclusive**) and is worth **30%** of your final grade. This exam will be *cumulative* and will cover all the material taught in the course, although it will focus heavily on Chapters 12-15 of the textbook and the corresponding lectures. The exam will contain a mix of multiple-choice and written questions. You must be available to write the final exam at any scheduled time during the official exam period. If you have three or more final exams that start and finish within a 24-hour period, you may request to write the *second* exam on a different day. You are, however, required to make this request to the instructor giving the second exam *at least one month before the exam date*.

**2. Laboratories (24%).** You will be required to complete six lab assignments on your own time. The lab assignments are intended to complement the lectures by giving you practical experience with analyzing data (using the software SPSS) and with reporting the results of various analytic techniques. Each assignment is worth 4% of your final grade. Each laboratory has three components:

**i. Generating Data With CogLab or Survey:** Prior to completing each lab assignment, you must complete a short CogLab experiment (for lab assignments 1, 3, 4, 5, and 6) or survey (for lab assignment 2) on your own time. The CogLab experiments and survey each require 10 - 30 minutes to complete. The purpose of the CogLab experiments and survey is to have you generate the data that you will summarize/analyze in your lab assignments. The hope is that you will gain a deeper understanding of data analysis by being involved in the experiments and survey, making the analyses more relevant and meaningful to you.

The due dates and times for completing the CogLab experiments and survey are listed at the end of the syllabus. However, these due dates may change, and it is your responsibility to come to class and/or monitor Connect for any announced changes. *You will lose 1/4 (25%) of your assignment*

*grade (i.e., 1% of your final course grade) for each CogLab experiment or survey that you do not complete by the due date and time. You will not be able to make up marks lost because of your failure to complete a CogLab experiment or survey on time.*

**How to complete the CogLab experiments (for lab assignments 1, 3, 4, 5, and 6):** You will complete all CogLab experiments by using the CogLab account that you will set up on the CogLab 5.0 website at [coglab.cengage.com](http://coglab.cengage.com). To get instructions for setting up your CogLab account and for completing the CogLab experiments, open the folder called "How to Generate Data for Labs" under "Course Content" on Connect. Inside that folder, open the folder called "CogLab (for labs 1, 3, 4, 5, and 6)". Inside that folder, open the file called "How to Get Started with CogLab (for labs 1, 3, 4, 5, and 6)" and follow the instructions. Note that you are only required to complete the CogLab experiments by the due dates and times listed at the end of the syllabus; you are *not* required to answer any questions in the CogLab manual written by Francis and Heath.

**How to complete the survey (for lab assignment 2):** You will complete the survey by opening the folder called "How to Generate Data for Labs" under "Course Content" on Connect. Inside that folder, click on the link called "Survey (for lab 2)" and complete the survey.

**ii. Student Guide to SPSS and In-class SPSS Demonstration:** After completing each CogLab experiment or survey, you should read the appropriate chapter(s) for the lab assignment in *A Student Guide to SPSS*. The appropriate chapter(s) for each lab assignment will be announced in class and written in the instructions for each lab assignment. These chapters provide detailed information about how to perform all the SPSS functions you will need to complete the lab assignments. You will also receive a brief in-class demonstration of some of the functions of SPSS required for each lab assignment.

**iii. Lab Assignment:** After each in-class SPSS demonstration, the instructor will post a lab assignment for you to complete on your own time. All assignments will be posted in a folder called "Lab Assignments" under "Course Content" on Connect. The assignments will require you to analyze the data your class has generated in the CogLab experiments and survey. You will have about one week to complete each of the assignments.

The due dates and times for the lab assignments are listed at the end of the syllabus. However, these due dates may change, and it is your responsibility to come to class and/or monitor Connect for any announced changes. *You will lose 1/8 (12.5%) of your assignment grade (i.e., 0.5% of your final course grade) for each day your assignment is late.*

Lab assignments must be completed independently. You are encouraged to meet with your teaching assistants/fellows if you require assistance with the assignments. You may also use the discussion boards created under "Discussions" on Connect to ask your teaching assistants/fellows questions you encounter while completing the assignments. Although you may ask your teaching assistants/fellows for assistance, *you must complete the analyses and write-ups on your own.* You may not share your work with other students or use another student's work. You may also not post your answers to any lab assignment questions on the Connect discussion boards. Anyone who posts any answers to any assignment questions on Connect will receive 0 on the assignment.

**3. Research Experience Component (REC) (3%).** Because introducing you to research is an important part of this course, you will be required to complete a REC. One way to fulfill this requirement is to spend *three hours* participating in psychology studies through the Department of Psychology's Human Subject Pool (HSP) system. Each hour of participation counts as one credit and 1% of your final course grade. You can locate and sign up for studies by going to [hsp.psych.ubc.ca](http://hsp.psych.ubc.ca). If you don't already have a user account, you will first need to request an HSP user account on that webpage. Once you have an account and have logged into it, you will be able to browse through all the studies available for participation, sign up for studies, and confirm your accumulated credits. The subject pool typically closes during the last week of classes, so you are urged to participate and confirm your accumulated credits *before* the last week of class. Once the subject pool closes, you will have no further opportunity to participate in psychology studies for course credit, and you will have no opportunity to make up these lost credits. Further instruction on how to use the HSP online system can be found at [psych.ubc.ca/internal/human-subject-pool/](http://psych.ubc.ca/internal/human-subject-pool/) in the guide entitled "Subject Pool Information for Participants."

There is another way to fulfill the REC requirement. Instead of participating in subject pool studies, you may choose to complete *three* library-writing projects. If you choose this alternative, you will be expected to read and summarize three different research articles. Each article summary counts as one hour of research participation (one credit and 1% of your final course grade). For each summary, you must select a research article (not a letter to the editor, commentary, or review paper) published between 2000 and the present in the journal, *Psychological Science*. Each summary should be about 500 words and should describe the research question, methods, and results of the study presented in the article. Complete instructions on how to complete the library-writing projects can be found at [psych.ubc.ca/internal/human-subject-pool/](http://psych.ubc.ca/internal/human-subject-pool/) in the guide entitled, "Subject Pool Information for Participants." Please note that you will *not* receive your credits unless you *closely* adhere to the complete instructions detailed in the online guide.

**4. iClicker Participation (3%).** Attendance at lectures is important if you want to do well in the course. You will be expected to come to class and to participate by answering all clicker questions using your iClicker. *Please be sure to register your iClicker ID by clicking on "iclicker reg" on the course Connect page.* The instructor will aim to incorporate several clicker questions into each lecture. Participation will be graded in the following manner:

If you respond to...	You will receive...
90-100% of all clicker questions	3%
80-89% of all clicker questions	2.5%
70-79% of all clicker questions	2%
60-69% of all clicker questions	1.5%
50-59% of all clicker questions	1%
0-49% of all clicker questions	0%

It is your responsibility to bring your iClicker to every class and to ensure its batteries are functional. *You will receive no participation credit for a class if you forget to bring your iClicker to that class or if your clicker's batteries run out.*

**Additional Information:**

**Lecture Notes:** Lecture slides will be posted (in pdf format) in a folder called "Lecture Slides" under "Course Content" on Connect throughout the term. Sets of slides will usually be posted before the corresponding lectures, but this posting may occasionally be on the day of the lecture.

**Posting of Grades and Grading:** Midterm exam grades, final exam grades, and overall course grades will be posted with student numbers (no names) in a folder called "Grades" under "Course Content" on Connect. Requests for adjustments of midterm exam grades must be made within two weeks of the posting of the grades on Connect. Most requests for adjustment can be settled directly with one of your teaching assistants/fellows. In cases of a dispute that cannot be satisfactorily resolved in this fashion, the instructor will make a final decision. Please note that if you request that a question be re-graded, your mark may go up, go down, or stay the same.

**Psychology Department's Policy on Grade Distributions and Scaling:** In order to reduce grade inflation and maintain equity across multiple sections of the same course, all psychology courses are required to comply with departmental norms regarding grade distributions. According to departmental norms, the mean grade for PSYC 218 will be 71 for a good class, 69 for an average class, and 67 for a weak class, with a standard deviation of approximately 14. Scaling may be used in order to comply with these norms; grades may be scaled up or down as necessary by the instructor or department.

**Missed Exams:** If you miss an exam due to illness, you must contact the instructor *either before the exam or on the day of the exam*. Failure to notify the instructor immediately that you missed the exam may result in a grade of 0 with no opportunity to write a make-up. You must also notify the instructor once again when you are well and are ready to write the make-up exam. *You must have a note from your doctor confirming that you were sick and too ill to write an exam for the period of time extending from the day of the exam to the day that you notify the instructor that you are well and ready to write the make-up exam.* You will not be permitted to write the make-up exam without this note.

If you miss an exam for a reason other than illness, the instructor will make a decision about how to proceed on a case-by-case basis. In most cases, missing an exam for a reason other than illness will result in a grade of 0 on the exam and no opportunity to write a make-up exam.

**Announcements and Use of E-mail:** All course-related announcements will be made in class and posted under "Announcements" on Connect. Before e-mailing the teaching assistants/fellows or the instructor with any question, please first check Connect. You may discover that the answer to your question has already been posted. If you cannot find an answer to your question on Connect, please e-mail one of your teaching fellows, who will be able to help you with most course-related questions. Please e-mail the instructor only if your teaching assistants/fellows are unable to address your concern, or if you have a question that requires the instructor's personal attention. Because of the nature of the material in this course, please note that your teaching assistants/fellows and instructor will not be able to provide detailed replies via e-mail and may instead recommend a personal meeting during an office hour.

Your teaching assistants/fellows and instructor will make every effort to reply to e-mail in a timely fashion, but please do not expect responses in the evenings, on weekends, or on holidays. In addition, please be sure to use an e-mail account that has your full name attached to it, to type "PSYC 218" in the subject line, and to sign all e-mail; anonymous messages will receive no response.

**Academic Misconduct:** Cheating on an exam may result in a grade of 0 on the exam and will lead to a report to the University for appropriate action. Sharing your work on a lab assignment with another student or using another student's work is also considered cheating and may result in a grade of 0 on the assignment. In addition, both you and your collaborator will be reported to the University for appropriate action. Finally, bringing someone's iClicker to class and answering questions for him/her is considered academic misconduct. If you are caught using someone else's clicker, the clicker will be confiscated; you and the owner of the other clicker may receive 0 for participation; and you will both be reported to the University for appropriate action.

**Psychology Department's Policy on Academic Misconduct:** Cheating, plagiarism, and other forms of academic misconduct are serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. First, the Department uses software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to *Turnitin*, a service designed to detect and deter plagiarism. All materials (e.g., lab assignments) that students submit for grading may be scanned and compared to billions of pages of content located on the Internet or in *Turnitin*'s own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several, sensitive measures of plagiarism; instructors receive copies of these reports for students in their class.

In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript.

If you have any questions about whether what you are doing represents even a borderline case of academic misconduct, please consult your instructor. For details on relevant University policies and procedures, please see the chapter entitled "Policies and Regulations" in the UBC Calendar ([www.calendar.ubc.ca/vancouver/index.cfm](http://www.calendar.ubc.ca/vancouver/index.cfm)).

**Course Schedule and Important Due Dates:** The following course schedule and list of events/due dates may be modified at any time during the term. Any changes will be announced in class and posted on Connect. *You are responsible for being aware of any changes to the schedule and events/due dates, regardless of whether you attend the lectures.*

Dates	Topics	Text	Important Events and Due Dates
Jan. 6	Introduction & Review	Ch. 1	
Jan. 8	Mathematical & Measurement Concepts	Ch. 2	
Jan. 13	Frequency Distributions	Ch. 3	
Jan. 15	Central Tendency & Variability	Ch. 4	CogLab "Stroop Effect" (for Lab 1) due at noon
Jan. 20	Central Tendency & Variability cont. Normal Curve & z Scores	Ch. 5	
Jan. 22	Normal Curve & z Scores cont.		Survey (for Lab 2) due at noon SPSS Demo (for Lab 1) in class
Jan. 27	Correlation	Ch. 6	
Jan. 29	Correlation cont.		CogLab "Memory Span" (for Lab 3) due at noon Lab Assignment 1 due at start of class SPSS Demo (for Lab 2) in class
Feb. 3	Regression	Ch. 7	
Feb. 5	Regression cont.		Lab Assignment 2 due at start of class SPSS Demo (for Lab 3) in class
<b>Feb. 10</b>			<b>MIDTERM 1</b>
Feb. 12	Probability	Ch. 8	Lab Assignment 3 due at start of class
Feb. 17	STUDY BREAK		
Feb. 19	STUDY BREAK		
Feb. 24	Probability cont.		
Feb. 26	Binomial Distribution	Ch. 9	
Mar. 3	Hypothesis Testing & Sign Test	Ch. 10	CogLab "Change Detection" (for Lab 4) due at noon
Mar. 5	Hypothesis Testing & Sign Test cont.		
Mar. 10	Power	Ch. 11	SPSS Demo (for Lab 4) in class
Mar. 12	Sampling Distributions & z Test	Ch. 12	
<b>Mar. 17</b>			<b>MIDTERM 2</b>
Mar. 19	Sampling Distributions & z Test cont. Single Sample t Test	Ch. 13	CogLab "False Memory" (for Lab 5) due at noon Lab Assignment 4 due at start of class
Mar. 24	Single Sample t Test cont.		
Mar. 26	Correlated & Independent Groups t Tests	Ch. 14	CogLab "Risky Decisions" (for Lab 6) due at noon SPSS Demo (for Lab 5) in class
Mar. 31	Correlated & Independent Groups t Tests cont.		
Apr. 2	Analysis of Variance	Ch. 15	Lab Assignment 5 due at start of class SPSS Demo (for Lab 6) in class
Apr. 7	Analysis of Variance cont.		
Apr. 9	The "New" Statistics		Lab Assignment 6 due at start of class
<b>Apr. 14– Apr. 29</b>			<b>FINAL EXAM (Date TBA)</b>