Analysis of Behavioural Data
PSYC 218, Sections 001 & 002
Winter Term 2, 2015

Course Information

Lecture Times: MWF *Section 001*: 9:00-9:50 AM; *Section 002*: 10:00-10:50 AM
Location: AERL 120

Instructor

Professor Frances Chen
Office: Kenny Building, Room 3521
Office Hour: Fridays 11-12 AM or by appointment
E-mail: frances.chen@psych.ubc.ca

I look forward to seeing you during office hours – feel free to stop in! I will make every effort to respond to your emails within 48 hours. However, please note that I do receive a very high volume of email. Before emailing me, remember to check your syllabus, class notes, and the announcements on the course website to see if your question has already been addressed there. If you still have a question after asking your classmates and teaching assistants/fellows for assistance, or if you have a question that requires my personal attention, you should email me. Please include "Psyc 218" in the Subject line and use your UBC email account or your message could get lost. For complex questions, I may ask that you come by my office hours so that I can give you a fuller response than I can over email.

Teaching Fellows and Teaching Assistants

Lizzy Blundon
Office: Kenny Building, Room 3508
Office hour: Wednesday 1-2
E-mail: eblundon@psych.ubc.ca

Marlise Hofer
Office: Kenny Building, Room 1111
Office Hour: Tuesday 12:30-1:30
E-mail: hofer@psych.ubc.ca

Amir Sepehry
Office: TBD
Office Hour: Monday (time TBD)
Email: sepehryaa@alumni.ubc.ca

Enda Tan
Office: Kenny Building, Room 1101
Office Hour: Thursday 4-5 PM
E-mail: enda.tan@psych.ubc.ca

Ashley Whillans
Office: Kenny Building, Room 3605
Office Hour: Friday 2-3 PM
E-mail: ashleywhillans@psych.ubc.ca

Course Prerequisites
PSYC 217 and a declared major in Psychology, Cognitive Systems, or Speech Sciences.

Course Description and Goals
Numerical information is an important part of our daily lives. Scientific research, polls and surveys, and our own informal data-gathering projects (*Which car is the best deal? What class did students like the best last term?*), are all characterized by gathering and interpreting data to support conclusions backed by evidence. This course introduces statistics as a tool for the analysis of quantitative data. We will consider aspects of research design (how to collect data that can be used to answer a specific question), descriptive statistics (how to look for trends and patterns in a large data set) and inferential statistics (how to test hypotheses and draw conclusions about data). Becoming familiar with these topics will help you to analyze others' claims about data with a more trained eye, as well as to design, conduct, and analyze data from your own scientific research projects.

Required Materials
1. Pagano, R. (2012). *Understanding Statistics in the Behavioral Sciences* (10th Edition). Available at the UBC bookstore, bundled with Francis & Neath CogLab (item 2). Alternately, an e-book version of this textbook is available for rental online (go to www.coursesmart.com and enter ISBN 1111837260). The looseleaf version that we are using this year contains the same content as the hardback 10th Edition (so it is also fine if you get a used copy of the hardback 10th Edition).
2. Francis, G., and Neath, I. (2007). *CogLab Online Version 5.0 With Access Code* (4th Edition). An access code for CogLab Online 5.0, is available from the bookstore packaged with your Pagano text. Or you can purchase access directly from the website http://www.nelsonbrain.com/shop/isbn/9781285461083). To register on CogLab, please follow the instructions on the course website in folder called "Laboratories" under "Resources—Course Content."
3. Cuttler, C. (2014). *A Student Guide to SPSS, including SPSS Student Version 22*. (2nd Edition). Available at the UBC bookstore. The book comes with an access code for a free download of SPSS 22, which is a software package that we will be using throughout the course.
4. i>Clicker. Available at the UBC bookstore.
5. Scientific calculator. You will need a basic scientific calculator (one with inverse and square root functions will be sufficient and should only cost about $10) for exams. Graphing calculators are NOT permitted during exams.

Course Reserves
A copy of the Pagano text is available on course reserve at Koerner library. SPSS software is available on computers in BUCH B101 and B121 and Koerner library. Check the websites here for available drop-in times: http://isit.arts.ubc.ca/support/the-arts-computer-labs/
http://koerner.library.ubc.ca/services/gis-services/gis-research-data-lab
Please note that availability of the course reserves (i.e., access to the textbook and to the labs with SPSS software) varies on a daily basis. You are responsible for timely completion of course assignments regardless of access to course reserves. If you are relying on access to course reserves to complete assignments, *plan ahead*!

Course Website
Our course website can be accessed through connect.ubc.ca and can be used to register your clicker, download course materials, view exam grades, and find out about course announcements. Any updates to the course schedule, such as changes to deadlines for the assignments, will be announced during lectures and on the website. Make sure to check the website regularly to find out about any changes.

Lectures, Readings, and Assignments
Examinations will cover both lecture and textbook material. You are responsible for all material covered in lectures, in the textbook Chapters 1-15, and lab assignments. Attendance at lectures is critical for success in this course, as is spending additional time outside of class to practice and review the material covered in lectures. As a rough guideline, you should expect to spend 3-5 hours outside of class for every hour of lecture (some people may need more than this). Final versions of the lecture slides will be posted on the course website after class.

Grading
Your final grade in the course will be based on your participation and performance on four course components: exams (70%), laboratories (24%), research experience component (3%), and i>Clicker participation (3%).

Exams (70%): There will be three midterms (each worth 12% of the final grade) and a final exam (worth 34% of the final grade).

> *Midterms (3 x 12%):* Please see the Course Schedule at the end of the syllabus for details about the midterm exam dates and the material they will cover. There will be no make-up midterm exams. If you miss a midterm exam for any reason, your final exam will be worth 12% more (i.e., 46% of your grade). If you miss a second midterm test, your final exam will be worth 24% more (i.e., 58%), and so on. Requests for adjustments of midterm exam grades must be made to your teaching fellows/assistants within two weeks of the posting of the grades. If you request that a question be re-graded, your mark may go up, go down, or stay the same.
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> *Final Exam (34%):* The final exam is cumulative and will cover material from the entire course, with an emphasis on material from Chapters 13-15 of the textbook. Do not schedule travel during the official exam period (April 14 to 29, inclusive), as you are required to be write the final exam at any scheduled time within this period. If you have three or more final exams scheduled to start and finish within a 24-hour period, you may request to write the second exam on a different day. You must make this request to the instructor giving the second exam at least one month before the exam date. If you absolutely must miss the final exam due to an extenuating circumstance like severe illness, you or your caregiver must apply for Academic Concession by contacting your Faculty's Advising Office.

Laboratories (24%): There are six lab assignments for the course, each worth 4% of your final grade, which are designed to give you practical experience analyzing and interpreting data using the software SPSS. Please see the Course Schedule at the end of the syllabus for specific dates and deadlines. Each lab assignment consists of three components to be completed on your own time:

> *1. CogLab or Survey:* In order to generate data that you and your classmates will use for the lab assignments, you will first be asked to complete an online experiment (using "CogLab") or survey. Being involved in the experiments and survey is also meant to make the analyses more relevant and meaningful to you. Each experiment or survey will take 10-30 minutes to complete. These are always due on Fridays at the beginning of class (at 9:00 AM for Section 001 and at 10:00 AM for Section 002). Check the Course Schedule at the end of this syllabus for specific dates. If you do not complete this component by the deadline, 25% will be deducted from your final point total for your laboratory assignment (i.e., 1% of your final course grade).

For detailed instructions about how to complete the CogLab experiments and survey, please see the folder called "Laboratories" under "Resources—Course Content" on the course website.

2. Student Guide to SPSS and In-Class Demonstration. After completing the online experiment or survey, you should read the corresponding chapter(s) for each lab assignment in Cuttler's *A Student Guide to SPSS (2nd edition)*. The corresponding chapter(s) will be announced in class as well as on the course website. These chapters provide detailed information about how to perform all the SPSS functions you will need for the lab assignments. There will also be in-class demonstrations of the main functions of SPSS required for each lab assignment.

3. Laboratory Assignment. After each in-class SPSS demonstration, you will have about one week to complete the lab assignment. These will be posted in a folder called "Laboratories" under "Resources—Course Content" on the course website. These assignments involve analyzing and drawing conclusions about the dataset that you and your classmates have generated. These are always due on Wednesdays at the beginning of class (at 9:00 AM for Section 001 and at 10:00 AM for Section 002). Check the Course Schedule at the end of this syllabus for specific dates. You will lose 1/8 (12.5%) of your assignment grade (i.e., 0.5% of your final course grade) for each day or portion of a day up to 24 hours that your assignment is late. Late assignments will not be accepted after 7 days. You are encouraged to meet with your teaching fellows and teaching assistants during their office hours, and to talk to your classmates, about issues you encounter while completing the assignments. However, 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.

Research Experience Component (3%): The Research Experience Component (REC) is designed to help you learn more about psychology and how research is conducted by providing first-hand experience in psychology studies. For this course, you will be asked to spend a total of three hours participating in psychology studies. Each hour of participation is worth 1% of your final grade. You can locate and sign up for studies by going to the Department of Psychology's Human Subject Pool (HSP) system at https://hsp.psych.ubc.ca. Details about how to use the HSP online system can be found at http://psych.ubc.ca/internal/human-subject-pool/ in the document entitled "Subject Pool Information for Participants." Please register in the system by the end of the first month of classes to have the opportunity to earn your first ½ hour credit with a brief online survey that will increase your eligibility for more studies. I strongly encourage you to complete these credits well before the last week of classes. After the subject pool closes (typically during the last week of classes), you will not be able to participate in further studies to earn course credit.

Because first-hand experience with how research is conducted is an important part of this course, the REC is required. However, there is an alternative 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 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. If you choose the library-writing option, you must (a) create an account on the online HSP system (https://hsp.psych.ubc.ca), (b) include your name, e-mail address, student number, course, section, and instructor on each summary, and (c) submit your complete article summaries, together with copies of the summarized articles using Turnitin by the last day of classes for

the term (Friday, April 10). If you don't have a turnitin account already (from a previous course), you will need to create a user account in Turnitin. For the library assignment, the class ID is 9183443, class name is Psychology HSP (Winter 2015), and password is research. See www.turnitin.com, and click on the "Training" link at the top of the page for detailed instructions on how to submit papers to Turnitin. Complete instructions on how to complete the library-writing projects can be found at http://www.psych.ubc.ca/resguide.psy in the guide entitled, "Subject Pool Information for Participants." Please note that you must adhere to the complete instructions detailed in the online guide to receive your credits.

iClicker participation (3%): Active participation during lectures will be essential for you to learn the material, prepare for exams, and get the most out of this course. I will aim to incorporate a few iClicker questions into each lecture to check for understanding of key concepts and to encourage active participation and discussion. Please bring your clicker to every class; it is unfortunately not possible to make up iClicker points if you are absent or forget your clicker. Be sure to register your clicker by going to "iClicker registration" under "Resources" in the course website. If you answer at least 75% of the iClicker questions during a class period, for at least 90% of the classes during the term, you will earn the full 3% for this course component.

Support Resources and Early Alert
University students often encounter setbacks from time to time that can impact academic performance. If you run into difficulties and need assistance, I encourage you to contact me. I will do my best to support your success during the term. This includes identifying concerns I may have about your academic progress or well-being through Early Alert. With Early Alert, faculty members can connect you with advisors who offer students support and assistance getting back on track to success. Only specialized UBC advisors are able to access any concerns I may identify, and Early Alert does not affect your academic record. For more information about Early Alert, visit http://earlyalert.ubc.ca. For information about addressing mental or physical health concerns, including seeing a UBC counsellor or doctor, visit http://students.ubc.ca/livewell.

Academic Misconduct
Cheating on exams will result in a score of 0 for that exam. Lab assignments must be completed independently. Sharing your answers to lab assignment questions or using another student's work is considered cheating and will result in a score of 0 for that assignment. Using another student's clicker to answer questions for him or her is also considered cheating. If you are caught with more than one clicker in class, both clickers will be confiscated and you will both receive a 0 for course participation. All forms of cheating will be reported to the university for appropriate action.

Psychology Department's Position 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., papers, lab assignments) that students submit for grading may be scanned and compared to over five billion 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 as to whether or not what you are doing is even a borderline case of academic misconduct, please consult me. For details on pertinent University policies and procedures, please see Chapter 5 ("Policies and Regulations") in the UBC Calendar (http://students.ubc.ca/calendar).

Psychology Department's Policy on Grade Distributions and Scaling
In order to reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental norms regarding grade distributions. According to departmental norms, the average grade in a 100- and 200-level Psychology courses are 67 for an exceptionally strong class, 65 for an average class, and 63 for a weak class, with a standard deviation of 14. Scaling may be used in order to comply with these norms; grades may be scaled up or down as necessary by the professor or department. Grades are not official until they appear on a student's academic record. You will receive both a percent and a letter grade for this course. At UBC, grades are converted according to the key below:

A+	90-100%	C+	64-67%
A	85-89%	C	60-63%
A-	80-84%	C-	55-59%
B+	76-79%	D	50-54%
B	72-75%	F	0-49%
B-	68-71%		

COURSE SCHEDULE

Any changes to this schedule will be announced during lecture and on the course website.

Week	Date	In-Class Topic	Pagano Reading	Out of Class Event	In Class Event
1	Mon Jan 5	Course Intro and Logistics	Ch 1		
	Wed Jan 7	Measurement Basics	Ch 1 & 2		
	Fri Jan 9	Frequency Distributions	Ch 3	CogLab "Stroop" due by beginning of class	
2	Mon Jan 12	Percentiles			
	Wed Jan 14	Central Tendency & Variability	Ch 4		SPSS Demo 1
	Fri Jan 16	Normal Curve & Standard Scores	Ch 5	FluidSurveys Survey due by beginning of class	
3	Mon Jan 19	Standard Scores			
	Wed Jan 21	Catch-up, Review		**Assignment 1 due in class**	
	Fri Jan 23	---		CogLab "Memory Span" due by beginning of class	**Midterm 1 Ch1-5**
4	Mon Jan 26	Correlation	Ch 6		
	Wed Jan 28	Correlation			SPSS Demo 2
	Fri Jan 30	Linear Regression	Ch 7	CogLab "Change Detection" due by beginning of class	
5	Mon Feb 2	Linear Regression			
	Wed Feb 4	Random Sampling and Probability	Ch 8	**Assignment 2 due in class**	
	Fri Feb 6	Probability Rules		CogLab "False Memory" due by beginning of class	
6	Mon Feb 9	Family Day Provincial Holiday ~ UBC Closed			
	Wed Feb 11	Catch-up, Review			SPSS Demo 3
	Fri Feb 13	---		CogLab "Risky Decisions" due by beginning of class	**Midterm 2 Ch 6-8**
	Mon Feb 16	Reading Break			
	Wed Feb 18				
	Fri Feb 20				
7	Mon Feb 23	Binomial Distribution	Ch 9		
	Wed Feb 25	Hypothesis Testing using sign test	Ch 10	**Assignment 3 due in class**	
	Fri Feb 27	Hypothesis Testing using sign test			
8	Mon Mar 2	Sampling Distributions & z-test	Ch 12		
	Wed Mar 4	Sampling Distributions & z-test			SPSS Demo 4
	Fri Mar 6	Sampling Distributions & z-test			
9	Mon Mar 9	Power	Ch 11		
	Wed Mar 11	Catch-up, Review		**Assignment 4 due in class**	
	Fri Mar 13	---			**Midterm 3 Ch 9-12**
10	Mon Mar 16	Student's t-test for single samples	Ch 13		
	Wed Mar 18	Student's t-test for single samples			SPSS Demo 5
	Fri Mar 20	Confidence Intervals and *p* values			
11	Mon Mar 23	Confidence Intervals and *p* values			
	Wed Mar 25	Student's t-test for groups	Ch 14	**Assignment 5 due in class**	
	Fri Mar 27	Student's t-test for groups			
12	Mon Mar 30	Student's t-test for groups			
	Wed Apr 1	One-Way ANOVA	Ch 15		SPSS Demo 6
	Fri Apr 3	One-Way ANOVA			
13	Mon Apr 6	Easter Monday ~ UBC Closed			
	Wed Apr 8	Catch-up, Course Wrap-up		**Assignment 6 due in class**	
	Fri Apr 10	Final Exam Review			
The final exam date will be set by the registrar. **Do not book travel during exam period: April 14 to 29 (inclusive).**					