

**Analysis of Behavioural Data  
PSYC 218, Section 002  
Winter Term 2, 2016-17**

**Course Information**

Lecture Times: TTh 9:30-11:00 AM  
Location: AERL 120

**Instructor**

Professor Frances Chen  
Office: Kenny Building, Room 3521  
Office Hour: Thursdays 11-12 AM  
E-mail: [frances.chen@psych.ubc.ca](mailto:frances.chen@psych.ubc.ca)

I look forward to seeing you during office hours – feel free to stop in! This term we will be using Piazza as a forum for discussion and for assistance with questions. The system is highly catered to getting you help quickly and efficiently from classmates, the TAs, and myself. Rather than emailing questions about the course directly to the teaching staff, I encourage you to post your questions on Piazza. Sign up at: <https://piazza.com/ubc.ca/winterterm22016/psyc218002>

Please also 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 for assistance on Piazza, or if you have a question that requires my personal attention, you should email me. I will make every effort to respond to your emails within 48 hours on weekdays. However, please note that I do receive a very high volume of email. 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. If you are unable to attend *any* of the office hours listed here, contact one of us to arrange an appointment.

**Teaching Fellows and Teaching Assistants**

Courtney Bryce  
Office: Kenny Building, Room 3506  
Office hour: Monday 3-4 PM  
E-mail: [cab523@psych.ubc.ca](mailto:cab523@psych.ubc.ca)

Chelsea Christie  
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Office Hour: Wednesday 12-1 PM  
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**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 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 interpreting data to support conclusions backed by evidence. This course introduces statistics as a tool for the analysis of quantitative data. We will cover descriptive statistics (how to look for patterns in a large data set), basic principles of probability, 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.vitalsource.com](http://www.vitalsource.com) and enter ISBN 1111837260). The looseleaf version that we are using this year contains the same content as the hardback 10<sup>th</sup> Edition (so it is also fine if you get a used copy of the hardback 10<sup>th</sup> 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, purchase access from the website [www.nelsonbrain.com/shop/micro/ubc/psyc218](http://www.nelsonbrain.com/shop/micro/ubc/psyc218)). To register on CogLab, please follow the instructions on the course website in folder called "Laboratories" under "Course Content."
3. Cuttler, C. (2014). *A Student Guide to SPSS, including SPSS Student Version 22*. (2nd Edition). Available at the UBC bookstore or as an e-book at [www.kendallhunt.com/cuttler](http://www.kendallhunt.com/cuttler). The book (both the hard copy and e-book version) comes with an access code for a free download of SPSS, 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 varies. 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](http://connect.ubc.ca) and can be used to register your clicker, download course materials, and view exam grades. Any updates to the course schedule, such as changes to deadlines for the assignments, will be announced during lectures and/or on the website.

### **Lectures, Readings, and Assignments**

Examinations will cover both lecture and textbook material. You are responsible for all material covered in lectures, all material in the textbook Chapters 1-10 and 12-15 (unless specifically informed otherwise in lecture), 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).

### **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%). Grades for each of these components will be posted on Connect as they become

available. Any re-grade requests or errors in your posted scores should be brought to the attention of your TFs/TAs for resolution no later than two weeks after the date that grades were posted on Connect.

*Exams (70%):* There will be two midterms (each worth 18% of the final grade) and a final exam (worth 34% of the final grade).

*Midterms (2 x 18%):* See the Course Schedule at the end of the syllabus for the midterm exam dates and the material they will cover. There will be no make-up midterm exams. If you miss a midterm for any reason, your final exam will be worth 18% more (i.e., 52% of your grade). If you miss a second midterm, your final exam will be worth 36% more (i.e., 70%). Requests for adjustments of midterm exam grades must be made to your TFs/TAs 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.

*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 10 to 28, 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.

*Lab Assignments (24%):* There are five lab assignments for the course, each worth 4% of your final grade (Assignment 2 is a double assignment worth 8%), which are designed to give you practical experience analyzing and interpreting data using SPSS. See the Course Schedule at the end of the syllabus for specific dates and deadlines. Each lab assignment consists of two 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 complete an online experiment (using "CogLab") or survey. Each experiment or survey will take 10-20 minutes to complete. These are always due on Thursdays at 9:00 AM. 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. *Lab Assignment.* These assignments involve analyzing and drawing conclusions about the dataset that you and your classmates have generated. There will be in-class demos of the main functions of SPSS required for each assignment, one week before the assignment deadline. Assignments will be posted in a folder called "Laboratories" under "Resources—Course Content" on the course website. These are always due on Tuesdays at 9:00 AM using Turnitin. Check the Course Schedule at the end of this syllabus for specific dates. Please use Turnitin Class ID **14269246** and enrollment password **chen**. When uploading your assignment file, make sure to use the "single file upload" option rather than "cut and paste." 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. You are encouraged to meet with your TFs/TAs

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 by providing first-hand experience in research. 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." I strongly encourage you to complete these as early as possible in the term. 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.

You may opt to fulfill the REC requirement by completing three library-writing projects instead of participating in research. 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. 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 on p.4 ("The Library Option") of the guide at <http://psych.ubc.ca/internal/human-subject-pool/> in the document entitled "Subject Pool Information for Participants." You must adhere to the complete instructions detailed in the 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 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. Although we encourage you to talk to your classmates about the lab assignments, the final write-ups for the assignments must be done on your own and in your own words. Sharing your write-up or using another student's write-up 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	Deadlines & Due Dates	In Class Event
1	Tue Jan 3	Intro & Measurement Basics	Ch 1&2		
	Thur Jan 5	Frequency Distributions	Ch 3	CogLab "Stroop" due at 9 AM <b>Friday</b>	
2	Tue Jan 10	Percentiles			
	Thur Jan 12	Central Tendency & Variability	Ch 4	Fluidsurveys Survey due at 9 AM	SPSS Demo 1
3	Tue Jan 17	z-scores	Ch 5		
	Thur Jan 19	Correlation	Ch 6	<b>Assignment 1 due at 9 AM</b> CogLab "Memory Span" due at 9 AM	
4	Tue Jan 24	Linear Regression	Ch 7		SPSS Demo 2
	Thur Jan 26	Linear Regression		CogLab "Change Detection" due at 9 AM	
5	Tue Jan 31	Catch-up, Review		<b>Assignment 2 due at 9 AM</b>	
	Thur Feb 2	--			<b>Midterm 1</b>
6	Tues Feb 7	Sampling & Probability	Ch 8		
	Thur Feb 9	Probability		CogLab "False Memory" due at 9 AM	
7	Tue Feb 14	Binomial Distribution	Ch 9		
	Thur Feb 16	Hypothesis Testing & Sign Test	Ch 10	CogLab "Risky Decisions" due at 9 AM	
	Tue Feb 21	<b>READING BREAK</b>			
	Thur Feb 23				
8	Tue Feb 28	Sampling Distributions	Ch 12		SPSS Demo 3
	Thur Mar 2	z-test & Power			
9	Tue Mar 7	Catch-up, Review		<b>Assignment 3 due at 9 AM</b>	
	Thur Mar 9	--			<b>Midterm 2</b>
10	Tue Mar 14	Single Sample <i>t</i> -test	Ch 13		SPSS Demo 4
	Thur Mar 16	Effect Sizes			
11	Tue Mar 21	Confidence Intervals		<b>Assignment 4 due at 9 AM</b>	
	Thur Mar 23	Two Sample <i>t</i> -tests	Ch 14		
12	Tue Mar 28	Two Sample <i>t</i> -tests			SPSS Demo 5
	Thur Mar 30	One-Way ANOVA	Ch 15		
13	Tue Apr 4	Replicability*		<b>Assignment 5 due at 9 AM</b>	
	Thur Apr 6	Wrap-up & Final Review			

\*Reading for Apr 4, "Replication in psychological science" (Lindsay, 2015) will be posted on Connect.

The final exam date will be set by the registrar. **Do not book travel during exam period: April 10 to 28 (inclusive).**