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Psyc 217 Sections 001 and 002
Winter 2015/2016
Version 2: September 8, 2015

Research Methods in Psychology

What is this Course About?

Modern psychology uses the tools of science to investigate behaviour. By successfully completing this course, you will be able to thoughtfully understand and contribute to these scientific investigations. Together, we will explore the foundations of the scientific method, the core experimental and non-experimental research designs psychologists most often use to test their hypotheses, and current issues in our science (e.g., replication, ethical practices). You will be able to apply your knowledge to collaboratively design your own research study, collect and briefly analyze data, and present your results in written and poster forms. You will be prepared to critically consume psychological claims made in the media, to engage effectively in future courses in psychology, and to pursue further research experience in the social sciences.

Quick Facts About Class

Classes are held Monday, Wednesday, Friday, 9-9:50am (Section 1), 10-10:50am (Section 2) in AERL Room 120. ***Attendance is expected and is necessary for success.*** *To receive your clicker participation points and to work with your team, you must attend the section for which you are registered.* Show respect for your fellow learners and leaders, including arriving on time and leaving *after* dismissed. Bring your TopHat-ready device, paper and writing tools, and your readings. You may choose to bring a computer, but I discourage it because of its tendency to side-track attention – yours and others (Fried, 2008; Sana, Weston, & Cepeda, 2013).

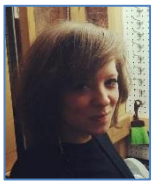
Inside This Syllabus

Meet your Leaders in Learning

INSTRUCTOR Dr. Catherine Rawn
Office: Kenny Psychology Building, Room 2523

Welcome to my drop-in office hours: Tues 2-3, Wed 1-2, Fri 3-4. Some appointments can be made if necessary.
Email: cdrawn@psych.ubc.ca **Please include "Psyc 217" in the Subject line**, use professional tone and style, and use your UBC email account. **Before emailing, please check** with your class notes, syllabus, and classmates for an answer to your question. Although I try to respond as quickly as possible, expect approximately 48 hours for a reply (excluding evenings and weekends).
Web: www.psych.ubc.ca/~cdrawn **Twitter**: @cdrawn

TEACHING FELLOWS TFs are here to help you learn and to help me to evaluate your learning. They will teach lab sections, grade papers and exams, hold office hours for you, and respond to brief questions sent via email. If you cannot make their scheduled office hours, email them to work out an alternative appointment.



Meagan Auger
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OFFICE HOUR: Tuesdays, 4-5pm
LABS: Teams 9-12 & 25-28 in CEME 1204

Debra Bercovici
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OFFICE HOUR: Tuesdays 10:30-11:30am
LABS: Teams 1-4 & 17-20 in Scarfe 1021

Cermet Ream
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OFFICE HOUR: Thursdays, 2-3pm
LABS: Teams 13-16 & 29-32 in CEME 1206

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OFFICE HOUR: Wednesdays, 3-4pm
LABS: Teams 5-8 & 21-24 in Scarfe 1020

Course Goals

I designed this course carefully, with specific goals in mind. Together, these goals reflect 10 of the 19 guidelines put forth by the American Psychological Association as key for the undergraduate psychology major (American Psychological Association, 2013). *If you are willing and able to meet the requirements, by the end of this course, you will be able to...*

1. describe basic characteristics of the science of psychology.
2. explain, compare, and contrast various research methods used by psychologists, including their key characteristics, strengths and limitations.
3. design and conduct a basic study to address a psychological question using appropriate research methods and creative operational definitions.
4. evaluate conclusions drawn by yourself and others from various research designs.
5. know and follow ethical guidelines in all aspects of scholarly work (e.g., literature search, research design, data collection, analysis, interpretation, reporting).
6. use critical thinking effectively (e.g., evaluate the quality of information from various sources; challenge claims that arise from untested assumptions).
7. begin to exhibit quantitative statistical literacy.
8. demonstrate effective technological, written communication, and oral communication skills in various formats and for various scholarly purposes.
9. exhibit the ability to collaborate effectively, including working within a team to complete projects in a reasonable time frame, and managing conflicts appropriately.
10. reflect on your research-related experiences and find meaning in them.

Fitting this Course in Your Degree

Our course concepts provide a strong foundation for *all* subsequent coursework and research assistantships in Psychology, other behavioural sciences (e.g., marketing, economics, sociology), and for being an informed citizen. Moreover, there is lots of support available to you while taking this course (teammates, TFs, instructor).

Pre/Co-Requisites *To take this course, you must have taken (or currently be taking):* Either (a) PSYC 100 or (b) all of PSYC 101 and PSYC 102. *This course is a Prerequisite for:* Psyc 218 and 359 (Statistics), Psyc 349/449 (Honours), and some other courses.

Considering Withdrawing? If you wish to withdraw without any record of this course on your transcript, you must do so before **September 22, 2015**. A portion of this course is devoted to teamwork. Your team depends on you! If you are considering withdrawing after the second week of classes please see me, your instructor, to discuss options.

Materials: What Do You Need?

1. **Cozby, P. C., & Rawn, C. D. (2012). *Methods in Behavioural Research* (Canadian Ed.). Toronto, ON: McGraw-Hill Ryerson.**
   - Focuses on details of how to conduct research. Available new, used, or electronic ($77.97 for 180 day rental on CourseSmart). Avoid earlier editions as there are substantial changes.
   - Yes, I am the second author. I am donating all royalties from UBC sales to UBC scholarships.
   - An OPTIONAL Online Learning Centre to accompany the textbook is available here with practice quizzes and other resources.
2. **Cuttler, C. (2010). Research Methods in Psychology. Dubuque, IA: Kendall Hunt.**
   - This lab guide will help you and your teammates create a successful research project.
3. **Required Supplemental Readings.**
   - See page 11 for the article list. All are available as links on our Connect website.
4. **TopHat Student Response System.**
   - Use any mobile device to respond to questions posed in class to help you learn. 4 month unlimited access $24, or 12 month unlimited access $36 (recommended if in my section of 218)
   - Section 1, 9am, register here: https://app-ca.tophat.com/e/035996 (join code 035996)
   - Section 2, 10am, register here: https://app-ca.tophat.com/e/632585 (join code 632585)
   - For detailed instructions about how to register and use the system, consult the tinyurl.com/TopHatStudentGuide.
5. **OPTIONAL Stanovich, K. E. (2013). *How to Think Straight about Psychology* (10th ed.). Boston, MA: Pearson.**
   - Lots of examples! See Our Course Schedule for recommended chapters. Purchase from the bookstore, or rent from CourseSmart ($29.99 for a 180 days). The 9th edition is also acceptable.

***Financial Hardship*:** If you are experiencing serious financial hardship and are unable to purchase some or all of the required materials, please come see me and I'll do my best to set you up with what you need. The texts are also on reserve at Koerner library.

Learning Appraisals (Overview)

The distribution of assessments in this course is 54% for exams, 39% for written and verbal communication related to the research process, and 7% for active participation in the research & learning process. Everyone will practice a variety of skills that will benefit them in future classes, in the workplace, and in their personal lives. These include: professional writing, public speaking, collaboration with others, and synthesis of a range of material (see Course Goals, especially 8 and 9). The more you participate, the more you will get out of this course. *Please find details of each Learning Appraisal below, in the order they are listed in the following table.*

Learning Appraisal	Points	Due Date(s)
3 Two-Stage Tests worth 8% each (weighted 90% individual, 10% team)	24%	Wednesday September 30, Friday October 23, Monday November 16
Two-Stage Final exam (weighted 90% individual, 10% team)	30%	Date set by registrar (Exam period: Dec 8-22)
Communicating Psychology Assignment	4%	Recommended: October 14 Final deadline: scheduled start time for final exam or Friday December 11 (whichever is first)
Research Experience Component (REC)	5%	All components must be completed by the last day of classes (December 4)
Participation	2%	TopHat continuous, peer evaluations
Collaborative Research Project	35%	
Team Oral Presentation (-3% if incomplete)		Friday October 16 (Lab 2)
Individual APA-style Report (25%)		Monday November 30, start of class
Team Poster Presentation (10%)		**Friday December 4, 5-6:30pm, East Atrium, LSI**
Total	**100%**	

Learning Appraisals (Details)

Two-Stage Tests (3 x 8%) & Final Exam (30%)

All tests and the final exam will require thorough understanding of course material, including the **ability to apply and integrate concepts across units.** Questions may include a **mix of multiple choice, true/false, fill-in-the-blanks, and short written answer questions**.

There will be three non-cumulative, two-stage tests in class. Each tests will be out of approximately 25 points.

The two-stage final exam will be scheduled by the registrar during the official exam period; do not book any trips for these dates. If you have 3 or more 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 give the instructor of the second exam one month notice.

Although the material covered after the third quiz will be featured prominently, the final exam is cumulative. Research shows greater long term retention with multiple testing opportunities (Roediger & Karpicke, 2006). Because this material is important for success in future courses, a cumulative final is most appropriate. More details will be provided on the last day of class.

Details about Two-Stage Test Format

What is a 2-Stage exam? In class, take the test on your own, then immediately get into your team and retake it together so you have the chance to discuss and debate answers. Sit near your team. Individual tests will count for 90% of your test score, and team tests will count for 10%. In the rare case where an individual score is higher than that person's team score, the individual score will count for the full 100%.

Why a 2-Stage exam? Data shows it helps students learn and engage in courses (Gilley & Clarkston, 2014). It provides you with immediate feedback while you still remember the test questions. See my blog post for more references and a lengthier rationale: http://ow.ly/ztdv6.

Ψ

Communicating Psychology Assignment – 4%

This brief assignment offers you experience finding an empirical journal article using the university's library system, identifying the major features of a study design, and communicating the most important findings in a compelling way. These skills provide the foundation for

communicating about psychological research, and are relevant wherever you take your psychology degree. Your assignment should be no longer than 2 pages, and answer only the questions provided in the handout on *Connect*. To accommodate your schedule, the assignment due date is flexible. I recommend you complete it by the recommended deadline. The absolute final deadline is the scheduled start time of the final exam – *or the first Friday of the exam period, whichever is sooner.* No exceptions will be made to the final deadline.

Ψ

Research Experience Component (REC) – 5%

The REC is worth 5% of every Psyc 217 student's course grade: **1 hour of participation or 1 article summary = 1% x 4, plus 1% for completing the online Tri-Council Policy Statement (TCPS) tutorial** (details given in Lab 1). The REC is designed to help you learn more about psychology and how research is conducted, and to provide you with first-hand experience with psychological research. This experience may make understanding research easier (Ceynar Rosell et al., 2006) and may help you decide whether research is a reasonable career option for you.

One way to meet the REC requirement is to spend **four hours participating in psychology studies** through the Department of Psychology's Human Subject Pool (HSP) system. You can locate and sign up for studies by going to https://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 of the studies in which you can participate, sign up for studies and confirm your accumulated credits. The subject pool typically closes on the last day of class; I strongly urge you to participate *before* the last week to ensure appointments are available. Further instructions on 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*.

As an alternative to participating in subject pool studies, you may choose to fulfill the REC by completing four library writing projects, for which you read and summarize a research article. Each article summary counts as one hour of research participation. You must select a research article (not a letter to the editor, commentary, or review paper) published since the year 2000 in the journal *Psychological Science*. Each summary should be about 500 of your own words and should summarize the purpose, method and results of the study. *NOTE: THE ARTICLE YOU CHOOSE FOR THE COMMUNICATING PSYCHOLOGY ASSIGNMENT CANNOT COUNT TOWARD THIS CREDIT. WE WILL BE CROSS-CHECKING THE ARTICLES.* If you choose this library option, you must consult the document entitled *Subject Pool Information for Participants* located at http://psych.ubc.ca/internal/human-subject-pool/ for details of the submission process.

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Participation and Teammate Feedback – 2%

This course is designed to be experiential – involving group discussion, interactive activities, TopHat questions, and class projects. Thus, the success of the class for everyone, including your own comprehension of the material, depends upon your active participation (Michael, 2006). Because of the size of our class, it is challenging to measure individual participation on an ongoing basis. Therefore, your class contribution will be graded on (1) responses to TopHat questions, and (2) participation in peer evaluation of your teammates.

2% FROM TOPHAT QUESTIONS: Every class I will invite you to answer questions about our material. At the end of the course, all the points you earned for just answering questions (participation) and getting them correct will be added together. **If you earn at least 90% of the total available points, you will receive the full 2% toward your course grade.** This means you can miss up to a week's worth of responses with no penalty. If you earn less than 90% of available points, you will earn less than 2% (e.g., if you earn 45% of available points, you will earn 1%).

-1% *deduction for failing to complete either of two* PEER EVALUATIONS: Constructive feedback is part of any successful team project. By taking a few minutes to complete the peer- and self-evaluations, you will promote effective teamwork while avoiding the penalty. Evaluations will be conducted twice: first, after Lab 2 for *formative* purposes, as a chance to indicate what your teammates should keep doing well and what they need to work on. Occasionally, peer evaluations indicate a serious problem. *If such an issue arises, your team will be asked to meet with your instructor. If evidence indicates a team member is not contributing to the project, that person may not have access to the data from Lab 3, and that person's final report will consequently suffer.* The second, *summative* evaluation will occur at the end of the term, and may count toward your teammates' final poster grade.

The software program we will use to conduct these evaluations is called iPeer, and has been used extensively at UBC, particularly in Commerce and Applied Science.

(1) Log in to connect.ubc.ca using your CWL.
(2) Click on the link to iPeer in the Assignments folder.
(3) Complete the peer evaluation for each of your teammates and yourself.

Be honest and constructive in your evaluations. Keep in mind that your teammates will receive the feedback, but will not know which teammate said what.

Ψ

Collaborative Research Project – 25% Individual, 10% Team

The purpose of this project is to give you—and everyone who takes Psyc 217—an opportunity to apply what you are learning in class to a real research project. You will work in a team to generate and test a hypothesis about human behaviour, and you will report these results in professional written and poster formats. This project has been designed to incorporate as many elements as possible of the process in which psychological scientists engage to gain insight into human behaviour. You will receive guidance from your Teaching Fellow at each stage of the process. Lab Meetings will take place during class time, but in a smaller room, on **Fridays October 2, October 16, November 6, November 13, and November 20**. *Attendance at all Lab Meetings and the Poster Session (**December 4, 5-6:30pm**) is required. The first three lab meetings involve crucial teamwork and are therefore mandatory. **You will lose 20% of your lab grade (i.e., 7% of your course grade) for each of these meetings that you miss** (e.g., if you miss 2 of those first 3 meetings, you will lose 14% of your course grade, simply for not showing up to contribute to your team).* See the "Expectations" section for the procedure if you absolutely must miss one of these events.

On Teamwork

The vast majority of research conducted in psychology is collaborative (Kliegl & Bates, 2011; Madigan, Johnson, & Linton, 1995). Reflecting this trend, you will work closely in teams of 5-6 on this project. Teams will be assigned immediately after the drop period in a way that promotes diversity and resources (Brickell, Porter, Reynolds, & Cosgrove, 1994). I encourage you to **work together in the spirit of collaboration**. I also know that **team work can sometimes be challenging.** To help you achieve excellence in your projects, each team will have a **private discussion thread on Connect** to collaborate with each other throughout the term. Using this thread provides a permanent record of your team collaborations, and might be helpful if a team dispute arises. You will also provide **feedback to your teammates** about their performance, and receive feedback on your performance (see "Participation" section). You are always welcome to **seek me and our TFs out for help and advice** on your team dynamics. If your team is having great challenges, there is a form on Connect that you can submit a **formal request for mediation**. In the past, such mediation has typically led to positive team progress.

Lab Structure

LAB MEETING 1 – RESEARCH DESIGN (FRIDAY OCTOBER 2): You will meet with your team in your lab break-out room to brainstorm a research question and design a brief, simple, minimal risk experiment to address the question (note: the experiment must not require more than 5 minutes of each participant's time). Our Teaching Fellow will be present to assist and guide you. Come to the meeting prepared with some ideas so you can maximize your 50 minutes of time together. You will be able to start posting ideas in advance on Connect as soon as teams are established. *See Cuttler's guide, Chapter 1, for further guidance and tips, as well as Appendix 1 for ideas.*

LAB MEETING 2 – PROPOSAL PRESENTATION (FRIDAY OCTOBER 16): Your team will give a 5 minute presentation of your proposed research question and design. During this presentation you should: i) state your research question and why it is interesting, ii) clearly describe the independent variable and how it will be manipulated, iii) clearly describe the dependent variable and how it will be measured, iv) discuss any controls you plan to implement, v) state your hypothesis. Each presentation will be followed by a 5 minute discussion period where your classmates and Teaching Fellow will ask questions and provide suggestions for improving your study design. Failing to present a proposal will result in all team members receiving a 3% deduction. *See Cuttler's guide, Chapter 2, for further guidance and tips.*

LAB MEETING 3 – DATA COLLECTION (FRIDAY NOVEMBER 6): You will collect data for your experiment using your classmates as participants. Your team must arrive to this meeting with all of the materials needed to conduct your experiment. This meeting is the primary (and required) opportunity to collect data. *Your team may also opt to collect data (along with other teams across all sections) on Monday Nov 3, 5-6:30 in Swing 222. Collecting data outside these two meeting times and/or with individuals other than your 217 classmates and Teaching Fellows is not covered by our ethics approval certificate (H13-01648) and will result in a major deduction from your lab component grade.* While some team members are collecting data, you may participate in other teams' studies. *See Cuttler's guide, Chapter 3, for further guidance and tips.*

LAB MEETING 4 – DATA SUMMARY (FRIDAY NOVEMBER 13): Your TF will help you learn how to meaningfully summarize your data, including calculating descriptive statistics and creating graphs using Microsoft Excel. Come prepared with your raw data and a plan for summarizing it that you can discuss with your TF. *See Cuttler's guide, Chapter 4, for further guidance and tips, and Appendix 2 for examples.*

LAB MEETING 5 – WRITING AN APA STYLE RESEARCH REPORT (FRIDAY NOVEMBER 20): Your TF will help you learn how to write an APA style research report. You may wish to come prepared with a rough draft of your paper as well as specific questions and challenges you are having

with its preparation. *See Cuttler's guide, Chapter 5, for further guidance and tips.*

Communicating your Results

After conducting research and generating conclusions, psychological scientists (like all scholars) need to communicate their methods and findings to the scientific community. For your research projects, we consider our class as well as all sections of Psyc 217 as our common scientific community. You will be asked to communicate your research findings in written form (one APA Style Report per person), and in poster form (one per team) to be presented at the *Annual Psychology 217 Research Methods Poster Session*.

POSTER SESSION (10%): DECEMBER 4, 5-6:30PM, EAST ATRIUM OF UBC LIFE SCIENCES INSTITUTE (2350 Health Sciences Mall) Approximately 600 students, 12 Teaching Fellows, and 6 Instructors from all 7 sections of Psychology 217 will meet to share and learn about everyone's research projects. You will prepare, as a team, a poster that summarizes your research project's hypothesis, method, results, and conclusions. This kind of presentation is common at professional scientific conferences; all of us on the teaching team have presented our research at this kind of poster session. During the poster session, you will be asked to evaluate your peers' posters (from a different section). Your own poster will be evaluated by five peers (the average of these five ratings will equal 3% of your grade), as well as your Teaching Fellow (whose rating will comprise the other 7%). More details about how to prepare for the poster and presentation, as well as how to evaluate others' posters will be provided later in the term. NOTE: TO ACCOMMODATE ALL SECTIONS, THE POSTER SESSION IS IN THE EVENING ON THE LAST FRIDAY OF THE TERM. IT IS A MANDATORY COURSE EVENT; MARK YOUR CALENDAR NOW.

INDIVIDUAL RESEARCH REPORT (25%): FORMAT, SUBMISSION (MONDAY NOVEMBER 30) AND GRADING The most important step in the research communication process for researchers is to clearly document their research and the contribution it makes to understanding human behaviour in a written manuscript. These written manuscripts are then reviewed by their peers, and (hopefully!) published in a journal. This individual report is designed to give you experience with a part of this process.

Reports are to be prepared independently; each team member must prepare a report separately from other team members. Evidence of collaboration or team work in writing the reports will result in major deductions from your lab component grade and in severe cases may result in a grade of zero on the lab component.

Format: Your report must be written using APA style and must include the following sections: Abstract, Introduction, Method, Results (including at least one graph or table), Discussion and References (at least 2). See Appendix A of your Cozby and Rawn text, the Publication Manual of the American Psychological Association (6th ed.), and Cuttler's guide (Chapter 5), for guidance in writing APA style reports.

Reports must be between 5 and 7 double spaced 8.5 x 11 inch pages (approximately 1500-1700 words). This page limit does NOT include a cover page, references, graphs, tables or appendices. You must use 12 point Arial, Times New Roman, or Calibri font and margins must be set to 1 inch all around. Your paper should integrate into the introduction section at least 2 references to related empirical journal articles (e.g., to set up a foundation for your hypothesis). Articles can also be used in the discussion section to help put results into context.

Submission: Reports are due on Monday November 30. A hard copy must be submitted (at the start of class) AND identical copies must be submitted on Connect and to TurnItIn (by 11:59pm). If you fail to do either (submit it in person or online) on the deadline, your report will be considered late. You will lose 10% for each day the report is late. See "Submitting Written Assignments" section on Page 7 for details about submitting work to TurnItIn.

Grading: The lab report is worth 25% of your grade. You will be graded on the following: Abstract and Introduction (5%), Method and Experimental Design (5%), Results and Figures (5%), Discussion (5%), proper use of APA format and writing style (5%). Read Cuttler Chapter 5 and attend Lab 5 for details about each section.

Tips for Success

Submitting Written Assignments

1. Submit a **pdf copy** on Connect using the link in the Assignments folder.
2. Submit an **electronic copy** on TurnItIn by 11:59pm on the due date. Go to turnitin.com, create an account, enter our course ID (**Section 1: 10359496, Section 2: 10359508**) and password (research), and upload the same assignment, *without identifying information on it*.
3. As a back-up for the Research Paper, submit a **hard copy** on the morning it is due.

The content of all copies must match each other. We will use TurnItIn to cross-check your paper with an enormous database of websites, past submissions, and published works. To learn more about TurnItIn and UBC's policies about it, see http://vpacademic.ubc.ca/academic-integrity/turnitin-at-ubc/.

Learning Tools to Investigate

We encourage you to take responsibility for your learning and check out what these resources might have to offer you.

TIME MANAGEMENT Search online for productivity and project management tools and apps (e.g., https://trello.com, https://www.rescuetime.com/, https://todoist.com). Give yourself enough time for papers with http://assignmentcalculator.library.ubc.ca, and master many other aspects of academic life http://learningcommons.ubc.ca/student-toolkits/

LEARNING COMMONS is UBC's online hub for study and research support. This interactive website provides you with a wealth of academic resources, from tutoring and workshops to study groups and online technology tools. It also offers plenty of information on a variety of academic topics, and links to nearly all of the academic resources offered at UBC. Make the Learning Commons your first stop for all things academic! http://learningcommons.ubc.ca

WRITING SKILLS The UBC Writing Centre offers tutoring services, including an Online Writer's Workshop. Also, Purdue University offers an amazing collection of information about writing, including using APA style, at their Online Writing Lab (OWL), available at http://owl.english.purdue.edu/owl (APA style specifics at http://owl.english.purdue.edu/owl/section/2/10/).

PHYSICAL OR LEARNING DISABILITIES Our teaching team and UBC generally is committed to equal opportunity in education for all students. If you have a disability that affects your learning in the classroom or your performance on tests or exams, please **contact Access & Diversity** in Brock Hall 1203, 1874 East Mall, Contact: 604.822.5844, www.students.ubc.ca/access. If your disability requires extra exam time, meet with Dr. Rawn as soon as possible to discuss accommodation options for the 2-stage exams.

A Note About Reading

Reading the text outside of class is essential for success in this course. This class will involve some lectures along with demonstrations, exercises, and discussions. Not all the material presented in the readings will be discussed in class, and vice versa. Thus, both a careful reading of text chapters and consistent class attendance are highly recommended. **My strong suggestion is to read each assigned reading *before* we discuss it in class** so that you know what questions you want to ask and are best able to participate.

A Note About Studying

A recent literature review classified study techniques as having high, moderate, or low utility for remembering and using information (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013). If you don't already, consider using some of these research-based strategies to study for this and other courses:

- ✓ ***Practice tests***, including self-tests (e.g., turn chapter headers and learning objectives into test questions)
- ✓ ***Distributed practice*** to spread out study over time (rather than cramming)
- ✓ *Elaborative interrogation* (explain why a concept is true)
- ✓ *Self-explanation* (explain how new information relates to what you already know)
- ✓ *Interleaved practice* that mixes around different material (rather than studying all of unit 1, then all of unit 2, sequentially, for example)

This literature review also revealed *low* utility for the following techniques. Researchers suggested *avoiding them* in favour of spending time more effectively on the strategies listed above. Read the article for more tips.

- x Summarizing
- x Highlighting/underlining
- x Keyword mnemonics and mental imagery to link with verbal material
- x Re-reading the text after having read it once

Expectations and Policies

What We Expect From You

ATTEND CLASS Please come to every class, prepared to participate. Bring your TopHat-enabled device, a pen and paper (in addition to a laptop, if you choose to bring one; consider Fried, 2008; Sana et al., 2013), and an open mind. *If you miss class,* you are responsible for obtaining notes and announcements. You will not be able to regain participation points for missed classes.

PARTICIPATE Success in this class depends on your active participation. Class time is designed to mix lecture-based explanations of course material with demonstrations, pair and small group discussions, large group discussions, writing, TopHat questions, and feedback (see Michael, 2006 for a review of active learning's effectiveness). We will ask you to do only those activities that we believe will help you learn. Come ready.

TREAT OTHERS RESPECTFULLY You are expected to treat all classmates, teammates, instructor, and Teaching Fellows, with respect both in and out of the classroom, face-to-face and in writing (e.g., on email). This includes arriving to class on time and minimizing distractions for other students.

ACT ETHICALLY You are responsible for your own learning. Cheating of any kind will **not** be tolerated, including dishonest TopHat use. See page 10 for more information about plagiarism, exams, and ethical conduct.

COMPLETE ASSIGNMENTS ON TIME Late research papers will be accepted up to 7 days late, but 10% per day will be deducted *any copy is late*. No assignments will be accepted after 7 days (including weekends). Plan ahead to avoid penalties. (Because of the flexible deadline for the Communication Assignment, none will be accepted after the start time of the final exam or the first Friday of the exam period, whichever is first.)

WRITE ALL QUIZZES AND THE FINAL EXAM If you must miss a test due to an extenuating circumstance like *severe* illness, you must submit the **Request For a Make-Up Exam Form**, available on Connect, plus appropriate documentation to Dr. Rawn. Unless it is an emergency, this form must be submitted at least 7 days before the date of the exam, at which point an alternative individual exam will be arranged. In case of emergency, the form must be submitted within 3 days of missing the exam (or as soon as is physically possible). If you miss the deadline, or fail to follow through on rescheduling the midterm during the term, you will receive a zero.

BE PRESENT AT LABS 1, 2, 3, AND THE POSTER SESSION If you are unable to attend any of those meetings, you must submit the **Request For Excused Absence Form**, available on Connect, to Dr. Rawn. This form must be submitted at least 10 days before the date of the event. In case of emergency, the form must be submitted within 3 days of missing the event (or as soon as is physically possible). If your documentation is approved for missing Lab, you will still be responsible for communicating with and contributing to your team but you will not lose points for missing lab. If your documentation is approved for missing the poster session, your grade will be re-weighted such that the poster session will count for 0% (instead of 10%) and your APA style paper will count for 35% (instead of 25%).

SHARE CONSTRUCTIVE FEEDBACK We invite you to share your thoughts and suggestions with us, particularly about things we are able to change, and to be open to **working together to make this course a positive experience for all of us.**

RESPONSIBLY USE ELECTRONICS IN THE CLASSROOM *Policy to be determined collaboratively during the first week of class.*

What You Can Expect From Us

BE AVAILABLE We are here to help you and your classmates in your choice to succeed. Visiting us in person is typically more effective than email for clearing up questions. If our office hours absolutely cannot work for you, respectfully email us a few time and day options to make an appointment.

POST SOME MATERIALS ONLINE PowerPoint slides and handouts will be available *after* class on our course Connect site. Learning Objectives will be available there before class. Slides cannot be posted before class because they will undermine clicker questions. Moreover, data shows that having notes in advance rather than after class does not influence performance (Babb & Ross, 2009).

CONSIDER RE-GRADE REQUESTS If you feel very strongly that a question on any exam or your paper was graded unfairly, you may submit the appropriate **Re-Grade Request Form** available on Connect. To qualify, you must submit the form to me (Dr. Rawn) within 2 weeks of the date grades were posted on Connect. I will consider your request carefully and will respond via email within approximately one week of receiving it. Re-grading may result in an increase or decrease. That re-grade is final.

TAKE PHOTOGRAPHS To help document active learning, we will take some photographs throughout the term. Please see me within the first two weeks if you have serious concerns about this.

ARRANGE FOR AND PROVIDE FEEDBACK Your peers will be an important source of feedback throughout this course. In addition, we will attempt to provide you with feedback on learning appraisals as promptly and as with as much detail as possible, given the size of our class. See us for additional feedback in person.

ACT RESPECTFULLY & ETHICALLY At all times, we aim to treat each of you with respect, and to make all course decisions with the highest ethical standards in mind. If you feel you are being treated unfairly or disrespected by us or a classmate, we invite you to talk to us so we can sort out the issue together. To be clear: such a discussion would not impact your grade.

Psychology Department Grading Policies

To meet department policy, the typical student demonstrating adequate performance on learning appraisals will earn around 67-71% in this course. Read on for details provided by the department.

To reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental grade distribution norms. The mean grade in a 300-level class is 70 for a good class, 68 for an average class, and 66 for a weak class, with a standard deviation of 13). The corresponding figures for 100- and 200-level Psychology courses are 67, 65, and 63, with a standard deviation of 14. *Psyc 217 is the one exception to this. Our mean may slightly exceed this value (up to 71%, same standard deviation).* **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, they convert according to the following key:

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%		

Faculty of Arts Guidelines for Grading Criteria

You are earning a degree at a highly reputable post-secondary institution. Therefore, criteria for success are high. The Faculty of Arts offers the following guidelines (also available on this website) that broadly characterize the kind of work that is generally associated with the main grade ranges. These characteristics help to put the Psychology Department Grading Policies into context. Note that adequate performance is in the C range, which is the typical class average.

A RANGE: *EXCEPTIONAL PERFORMANCE.* Strong evidence of original thinking; good organization in written work; capacity to analyze (i.e., break ideas down) and to synthesize (i.e., bring different ideas together in a coherent way); superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base.

B RANGE: *COMPETENT PERFORMANCE.* Evidence of grasp of subject matter; some evidence of critical capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.

D-C RANGE: *ADEQUATE PERFORMANCE*. Understanding of the subject matter; ability to develop solutions to simple problems in the material; acceptable but uninspired work; not seriously faulty but lacking style and vigour.

F RANGE: *INADEQUATE PERFORMANCE.* Little or no evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or irrelevant use of the literature.

Consider these characteristics when making choices about the quality of work you submit in all learning appraisals, in this and any other course.

Ethical Conduct: Practices and Policies

Don't Cheat. Don't Plagiarize. It's Not Worth It.

Read on for Key Definitions, Consequences, and How to Act Ethically

The consequences for unethical conduct are more severe than you may think: you may fail the assignment or test, you may fail the course, you may be expelled from University, and unable to attend any other post-secondary institution in the future. Think about the long-term implications of that outcome in your life.

Psychology Department's Official Statement on Academic Misconduct

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. In the first place, the Department has implemented 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 (term papers, lab reports, etc.) that students submit for grading will be compared to over 5 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 originality that flag instances of plagiarism; instructors receive copies of these reports for every student in their classes.

During exams, the instructor and invigilators reserve the right to move students in their seating arrangement with no explanation provided.

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. For details on pertinent University policies and procedures, please see Chapter 5 in the UBC Calendar (http://students.ubc.ca/calendar).

Why is Academic Misconduct Treated So Harshly?

Some people don't feel like cheating on a test or taking a sentence or two from someone else's paper without citing it is a big deal. Here's a bit of insight into why we care so much. In the academic community—a community of which you are now a part—**we deal in ideas**. That's our currency, our way of advancing knowledge. By representing others' ideas in an honest way, we are (1) respecting the rules of this academic community, and (2) showcasing how our own novel ideas are distinct from but relate to their ideas. APA style gives us a formal way to indicate where our ideas end and where others' begin. **Welcome to the academic community. You are expected to act honestly and ethically, just like the rest of us.**

Participating in the Academic Community Ethically

What can you do to ensure you are acting ethically? First, recognize that all graded work in this course, unless otherwise specified, is to be **original work done independently by individuals. Groupwork is to be original work created collaboratively by the group.**

VISIT LEARNING COMMONS' GUIDE TO ACADEMIC INTEGRITY UBC offers an online guide to preventing unintentional plagiarism and organizing your writing. Visit http://learningcommons.ubc.ca/resource-guides/avoiding-plagiarism/

USE THE LIBRARY'S RESOURCES, including any of the indexes and databases listed under Indexes and Databases, Subject Resources, OneSearch or Metasearch on the Library's website at http://www.library.ubc.ca. (Not sure which index to use? Click HELP on the library homepage at www.library.ubc.ca or try Subject Resources.) When instructed to do so, you may use search engines (e.g., Google, Bing) or GoogleScholar to find articles for assignments in this course.

BE CAREFUL AND CRITICAL OF WHAT YOU READ AND CHOOSE TO CITE. Reference all material using APA style; if you cannot find a proper reference, question whether that source is appropriate to use. **Do not** copy and paste text from other sources, even in a draft, as you might unintentionally misrepresent those words as your own in a later draft (which would still qualify as plagiarism).

*If you ever have any questions about what sources to use or how to cite them, please see your Instructor or Teaching Fellow **before** handing in your assignment.*

Supplemental Reading List

Ethics and Values Unit

Madigan, R., Johnson, S., & Linton, P. (1995). The language of psychology: APA style as epistemology. *American Psychologist, 50*, 428-436. doi: 10.1037/0003-066X.50.6.428

Neuroskeptic. (2012). The nine circles of scientific hell. *Perspectives on Psychological Science, 7*, 643-644. doi:10.1177/1745691612459519

Replication Unit (Read in this order. Subject to change. Any changes will be announced in class and on Connect.)

Pashler, H., & Wagenmakers, E.-J. (2012). Editors' introduction to the special section on replicability in psychological science: A crisis of confidence? *Perspectives on Psychological Science*, 7, 528-530. doi:10.1177/1745691612465253

Ledgerwood, A. (2014). Introduction to the special section on advancing our methods and practices. *Perspectives on Psychological Science, 9,* 275-277. doi: 10.1177/1745691614529448

Bartlett, T. (2013, January 30). Power of suggestion. *The Chronicle of Higher Education.* Retrieved from http://chronicle.com/article/Power-of-Suggestion/136907/

Nosek, B. A., Spies, J. R., & Motyl, M. (2012). Scientific utopia: II. Restructuring incentives and practices to promote truth over publishability. *Perspectives on Psychological Science, 7*, 615-631. doi:10.1177/1745691612459058

Asendorpf, J. B., Conner, M., de Fruyt, F., de Houwer, J., Denissen, J. J. A, Fiedler, K., et al. (2013). Recommendations for increasing replicability in psychology. *European Journal of Personality,2 7*, 108-119. doi: 10.1002/per.1919

References

Throughout this syllabus I have cited many journal articles. Below is my complete reference list. I included them here for two reasons: (1) to model responsible, APA style citation and referencing practices we will be using in this course, and (2) to show you some of the many ways I use research to guide the decisions I make in my teaching practice and course design. To be clear, these are ***not*** required reading, but you may find some of them interesting (e.g., Dunlosky et al., 2013).

American Psychological Association. (2013). *APA guidelines for the undergraduate psychology major 2.0.* Washington, DC: Author. Retrieved from http://www.apa.org/ed/precollege/about/psymajor-guidelines.pdf

Babb, K. A., & Ross, C. (2009). The timing of online lecture slide availability and its effect on attendance, participation, and exam performance. *Computers & Education, 52*, 868-881. doi: 10.1016/j.compedu.2008.12.009

Brickell, J. L., Porter, D. B., Reynolds, M. F., & Cosgrove, R. D. (1994). Assigning students to groups for engineering design projects: A comparison of five methods. *Journal of Engineering Education, 83,* 259-262. doi: 10.1002/j.2168-9830.1994.tb01113.x

Ceynar Rosell, M., Beck, D. M., Luther, K. E., Goedert, K. M., Shore, W. L., & Anderson, D. D. (2006). The pedagogical value of experimental participation paired with course content. *Teaching of Psychology, 32*, 95-99. doi: 10.1207/s15328023top3202_3

Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest, 14*, 4-58. doi: 10.1177/1529100612453266

Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. San Francisco, CA: Jossey-Bass.

Fried, C. B. (2008). In-class laptop use and its effects on student learning. *Computers & Education, 50*, 906-914. doi: 10.1016/j.compedu.2006.09.006

Gilley, B. H., & Clarkston, B. (2014). Collaborative testing: Evidence of learning in a controlled in-class study of undergraduate students. *Journal of College Science Teaching, 43*, 83-91.

Kliegal, R., & Bates, D. (2011). International collaboration in psychology is on the rise. *Scientometrics, 87*, 149-158. doi: 10.1007/s11192-010-0299-0

Madigan, R., Johnson, S., & Linton, P. (1995). The language of psychology: APA style as epistemology. *American Psychologist, 50*, 428-436. doi: 10.1037/0003-066X.50.6.428

Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology Education, 30*, 159-167. doi: 10.1152/advan.00053.2006

Roediger, H. L., III, & Karpicke, J. D. (2006). Test-enhanced learning: Taking memory tests improves long-term retention. *Psychological Science, 17*, 249-255. doi: 10.1111/j.1467-9280.2006.01693.x

Sana, F., Weston, T., & Cepeda, N. J. (2013). Laptop multitasking hinders classroom learning for both users and nearby peers. *Computers & Education, 62*, 24-31. doi: 10.1016/j.compedu.2012.10.003

Acknowledgements and Copyright

The original design of this course and syllabus were critically informed by insights from a similar course designed by Dr. A. Carle (U. North Florida), whose peer-reviewed syllabus is available from the *Society for the Teaching of Psychology's Office of Teaching Resources in Psychology* website, as well as syllabi from Dr. A. Perrino (UBC) and Dr. C. Cuttler (UBC). Annual revisions to this course and syllabus have been influenced by feedback from students in all my Psyc 217 Sections since Fall 2008, my Teaching Fellows and fellow instructors of Psyc 217, American Psychological Association (2007/2013) and Fink (2003).

Our Class Schedule

The schedule may be modified during the semester. Any changes will be announced in class and posted on Connect. Students are responsible for being aware of these changes, whether or not they attended the class in which any changes were announced.

Wk	Date	Topics	Readings	Labs and Learning Appraisals
1	W Sept 9	Welcome! Course Overview	Syllabus	Register on TopHat
	F Sept 11	Science Basics	Ch 1 *(Optional: Stanovich Ch 1)*	
2	M Sept 14	Hypotheses, Falsifiability	Ch 2 *(Optional: Stanovich Ch 2)*	
	W Sept 16	Falsifiability, *continued*		
	F Sept 18	Operationism, Variables and the Experimental Method	Ch 4 *(Optional: Stanovich Ch 3)*	
3	M Sept 21	Correlational and experimental design basics	*(Optional: Stanovich Ch 5)*	
	W Sept 23	Experimental Design, *continued*	Ch 8 (p. 155-162 only) *(Optional: Stanovich Ch 6)*	*Team creation survey*
	F Sept 25	Practical Considerations	Ch 9	
4	M Sept 28	Experimental Design, *continued (not on Quiz 1)*	Ch 8 (p. 163-168 only)	
	W Sept 30			**Two-stage Test 1**
	F Oct 2		*To prepare for lab, read Cuttler Ch 1*	**Lab #1: Research Design**
5	M Oct 5	Questionnaire Design	Ch 7 (p. 130-138 only)	
	W Oct 7	Measurement Concepts	Ch 5	
	F Oct 9	Measurement Concepts, *continued*		
6	M Oct 12	*Thanksgiving Day – UBC Closed*		
	W Oct 14	Ethics of Research	Ch 3	*Recommended due date*: Communicating Psychological Research Assignment
	F Oct 16		*To prepare for lab, read Cuttler Ch 2*	**Lab #2: Proposal Presentation** TCPS Certificate due
7	M Oct 19	Ethics of Research, *continued*		
	W Oct 21	Ethics and Values in Psychology	*Articles available as links in Connect* Neuroskeptic (2012) Madigan, Johnson, & Linton (1995)	iPeer peer- and self-evaluation due
	F Oct 23			**Two-stage Test 2**
8	M Oct 26	Observation, Case Studies, & Testimonials	Ch 6 *(Optional: Stanovich Ch 4)*	
	W Oct 28	Quasi-Experiments	Ch 11	
	F Oct 30	Complex Designs	Ch 10	
9	M Nov 2	Complex Designs, *continued*		
	W Nov 4	Describing Data	Ch 12 (up to end of first paragraph on p. 250)	
	F Nov 6		*To prepare for lab, read Cuttler Ch 3.*	**Lab #3: Data Collection**
10	M Nov 9	Describing Data*, continued*		*Optional bonus data collection event 5-6:30, Swing 222 (all sections invited)*
	W Nov 11	*Remembrance Day – UBC Closed*		
	F Nov 13		*To prepare for lab, read Cuttler Ch 4.*	**Lab #4: Data Summary**
11	M Nov 16			**Two-stage Test 3**

Wk	Date	Topics	Readings	Labs and Learning Appraisals
	W Nov 18	Inferential Statistics (Probability)	Ch 13, pages 257-264 *(Optional: Stanovich Ch 10, 11)*	
	F Nov 20		*To prepare for lab, read Cuttler Ch 5*	**Lab #5: Writing an APA Style Report**
12	M Nov 23	Inferential Statistics, *continued*	Ch 13, pages 257-264	
	W Nov 25	Inferential Statistics, *continued*	Ch 13, pages 269 (Type I & Type II) to 276 (power analysis), 279-281	
	F Nov 27	Generalization and Interpretation Issues	Ch 14 *(Optional: Stanovich Ch 7, 12)*	[Online Student Evaluation of Teaching]
13	M Nov 30	Publication and Replication in Psychology	Pashler & Wagenmakers (2012) Ledgerwood (2014) Bartlett (2013)	**APA-style Report Due**
	W Dec 2	Publication and Replication *continued*	Nosek, Spies, & Motyl (2012) Asendorpf et al. (2013)	
	F Dec 4	Synthesis		**Poster Session 5-6:30pm, LSI** iPeer peer- and self-evaluation due
Final Exam: Until the final exam date is set by the registrar, do not book travel during exam period: December 8 to 22, including Saturdays. It will emphasize the new material covered since Quiz 3 (Cozby Chapters 13 (as above), 14; Pashler, Bartlett, Ledgerwood, Nosek, & Asendorpf articles; all classes), and will include class and reading material from the entire course, as listed above.				