

DESIGN & ANALYSIS |

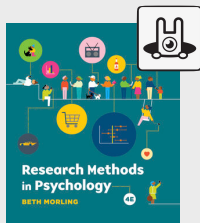
Class: Tu/Th 10:10-11:30am in HEG 102 | Lab: Th 1:30-3:30pm in ALBEE 100

Office Hours: M 4-5pm/F 11:30am-12:30pm/by appointment

Instructor

Dr. Justin Hulbert
office: Preston 108
phone: x4390
e-mail: jhulbert@bard.edu
(preferred contact)

Course Materials



brightspace™
by D2L

bardcollege.brightspace.com

Prerequisites

Introduction to Psychology &
Sophomore+ Status

Assessment

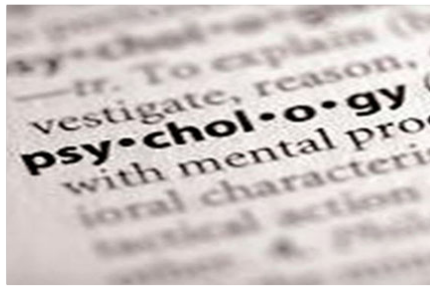
- Exams (3x20%): **60%**
- InQuizitive: **10%***
- Literature Review: **10%**
- Group Project: **18%**
- Final Reflection: **2%**
- Extra Credit

**I'll drop your lowest 2 scores*



Course Overview

This course provides an introduction to the research designs and data analyses central to psychological science, helping to build a strong understanding of research methods, ethics, and statistics. This course is required for students prior to moderation in Psychology and is built around hands-on laboratory experiences designed to illuminate experimental psychology for intended majors. This course must be taken before the second course in the two-part sequence, Design & Analysis for Psychology II (PSY 202). Together, these courses are intended to provide a strong foundation for designing, conducting, analyzing, interpreting, and communicating empirical research in the discipline. Prerequisites: Introduction to Psychological Science or its equivalent, and sophomore status at the College.



Learning Objectives

Coming out of this course, you should have:

- Developed a sound understanding of the primary research methods and designs used in psychological science, along with their respective benefits and limitations.
- Received training and certification for the ethical treatment of human research participants.
- Experienced collecting data using several different methodologies and analyzing/interpreting them according to the proposed hypotheses and study design.
- Honed your ability to locate, read, interpret, evaluate, and present psychological research (including in written form, using APA style).
- Established a solid foundation for further study of psychological science.

Joint Responsibilities

Achieving the broad aims of this course requires commitments from all of us. Below you will find an outline of some of those responsibilities. Did I leave something out? Let me know—we can discuss additional responsibilities/group norms as a class.

- **Your instructor agrees to...**

- a) Make himself available outside of class during posted office hours (and by appointment, as necessary) to answer questions, provide extra help, and discuss matters related to the course of study.
- b) Respond in a timely fashion (typically by the end of the next school day) to email queries. In the event that more time is required to fully address the student query, the instructor will acknowledge receipt of the email and provide the student with an estimated response time or suggest meeting in person.
- c) Facilitate a thoughtful, considerate, and engaging learning environment.
- d) Make available on Brightspace a skeleton of lecture slides, suitable for downloading/printing prior to class. Note that these skeletons are intended to supplement note-taking (e.g., by providing important/complicated figures) but are not a replacement for attending class, as they will lack critical information presented only in class.
- e) Provide adequate time to complete assignments, minimize changes to the published schedule/assignments, and immediately notify students about any such changes.
- f) Provide comprehensive and fair assessments of materials presented or assigned. Assignments, with a level of feedback commensurate with the nature and aims of the task, will be returned to students in a timely fashion.
- g) Create and welcome opportunities for students to provide feedback on the course/teaching throughout the semester.



Best Practices

To make the most of office hours, it is recommended that you:

- Avoid waiting until the last minute (before an exam/due date) to attend. Seeking help well in advance of deadlines will leave you plenty of time to act on advice discussed.
- Email the instructor in advance or bring with you a concise list of topics/questions you wish to discuss, if possible. Itemizing in this way helps ensure all your questions are addressed and saves you time in the long run. That said, *dropping by for a spontaneous, broader chat is also most welcome*. Tea and/or coffee will be available (pandemic permitting).

When emailing the instructor, keep in mind that:

- Taking time to draft a concise message with proper spelling/punctuation is expected and will be met with a similarly considered reply.

Writing/other academic help is available through [Bard Learning Commons \(lc@bard.edu\)](mailto:lc@bard.edu).

- **You are responsible for...**
 - a) Showing up to class regularly, on time, and prepared. Your attendance is critical to your learning (and course grade), as the in-class demonstrations, activities, movie clips, and other outside materials won't necessarily be covered in your readings or the posted lecture slides. Formal attendance will not be taken; however, you are responsible for any and all material covered in classes missed. Note also that any and all material contained in the assigned readings would be considered fair game on exams (even if it had not been covered directly in class). Your outside readings are intended to provide a solid foundation for class discussions, activities, and advanced lectures. For that reason, it is critical you keep up with the readings and ask (your peers and/or your instructor) if something from the readings is unclear. Review guides will be offered before exams to help focus your studying.
 - b) Giving your participation, readings, and assignments the time and effort they deserve. As the required text is now completely digital, you can access the material on your computer or smart device from anywhere. But keep in mind that there is no substitute for a deep and focused consideration of the material, spaced out over time and considered actively.
 - c) Checking your **Bard email** and **Brightspace** regularly for important announcements about the course. Adapting to the pandemic has made keeping in regular contact more important than ever. By clicking "Announcements" and then "Notifications" on the Brightspace landing page, you can request text and/or email alerts to be sent to you for a variety of course-related happenings.
 - d) Substantively participating in class discussions (in class and/or online via Brightspace). This could, for instance, involve asking/answering questions related



to the offered course materials. Note that a top-notch level of participation does not necessitate responding to every question raised in class or online; active or passive efforts to welcome contributions from everyone in the class are also looked upon favorably. Though you are welcome to challenge your fellow students' or your instructor's thoughts and conclusions, please do so in a fashion that is respectful. Challenge ideas, not the person raising them.

- e) Submitting assignments on time, digitally via Brightspace or InQuizitive. To promote equity and acknowledge life's challenging circumstances, I am granting everyone in the class an automatic **"S#!t Happens token" extension** for one assignment (see below section on Extra Credit for more) and dropping your two lowest InQuizitive scores (see InQuizitive section below). Otherwise, any late assignment will immediately be subject to a 10% penalty, with an additional 10% penalty leveled against that assignment's score for every 24 hours it remains late. Note that InQuizitive assignments are only accepted up to a certain deadline set in the online system; as such, if you miss a deadline (and don't use your token to extend the deadline), you'll risk getting a 0% for that assignment (i.e., there isn't a late penalty that accrues gradually). However, I will drop your two lowest InQuizitive scores (meaning that you can miss two assignments without it affecting your grade). Note also that all work must be submitted by the end of Completion Week for credit, even with a token. Make-up exams will be considered *only* for documented cases of medical or family emergency. Students requiring alternative testing or other accommodations (e.g., due to disability) should provide the relevant accommodation letter as soon as possible after the first class meeting.

- f) Maintaining connectivity. There are many benefits to taking handwritten notes (Mueller & Oppenheimer, 2014). However, some activities will require access to an internet-connected device during and between class meetings. As such, it is strongly recommended that you bring a fully charged laptop or tablet with you to class. Smartphones are another option, though some features may be limited on such a tiny device. You will have to be diligent in avoiding potential distractions that these devices invite (e.g., surfing the web or checking social media) for yourself and those around you. Please only use devices in class for expressly course-related activities.
- g) Upholding academic integrity. Plagiarism (e.g., copying other's words or ideas without proper citation) will not be tolerated. You are expected to work independently on each graded assignment, unless explicitly instructed otherwise. When in doubt as to what constitutes plagiarism within the confines of this course, you are encouraged both to consult the student handbook (<http://www.bard.edu/dosa/handbook/index.php?aid=1201&sid=705>) and to contact the instructor for further guidance. There is absolutely no penalty for asking for clarification; however, failing to abide by Bard's standards for academic integrity can result in failing the course.



Assessment Details

- **Exams** (3 in-class exams, each worth 20%, together accounting for 60% of your final grade) will involve a combination of multiple-choice, matching, fill-in, and short-answer/essay questions, focusing on the material covered in your textbook/InQuizitive, other assigned readings, and during our class meetings (all the more reason to read and participate fully in the class). Exams will be conducted in class (in person). The second exam will be non-cumulative in the sense that it will focus on material introduced after the first exam. That said, the coverage necessarily will build on concepts studied during the early part of the course. Thus, you will still be expected to have a firm grasp on material tested previously. The final exam will be cumulative. Study guides will be made available in advance of each exam (see tentative course schedule below), as will in-class review opportunities.

- **InQuizitive** (10% of your final grade) is a (required) companion to your digital textbook that is based on research-backed psychological principles, including retrieval practice, active learning, and metacognitive monitoring. InQuizitive questions for our course focus on building data literacy, evaluating research claims, and applying concepts to the real world. A variety of game-like interactive question types, answer-specific feedback pointing you back to the relevant place in the text, and personalized question-sets will help you grasp course concepts faster and keep you motivated. As a result, everyone will show up to class better prepared for the active learning and applications I have prepared for class. Plus, InQuizitive has been shown to raise exam grades! In a [recent efficacy study](#), students increased their posttest scores by an average of 12 points when using InQuizitive (compared to pretest scores). Indeed, a wide body of cognitive psychology research indicates that repeated testing of studied information improves long-term retention (Karpicke & Roediger, 2008). That's right: Tests and quizzes can be so much more than a stressful final evaluation of your abilities; they can be used as a powerful study technique, helping to pace learning, cement your understanding, and (yes) likely improve grades on formal assessments (and not just in this course). By completing your InQuizitive activities regularly, you'll earn points towards your grade AND put yourself in a position to do better on the exams. In other words, I'm assigning InQuizitive to help you. You can thank me later ;-).

- **E-book:** I've considered a lot of textbooks for this course.

By far, "Research Methods in Psychology" by Beth Morling (picture to the right) is the most up-to-date, engaging, useful, and comprehensive textbook on the subject that I have found. In fact, the publisher claims it is the #1

textbook in its category. I believe it! While I've used her text previously, it's been improved even further in its newest, 4th

edition (the assigned edition). The e-book version of this text is the cheapest, but I also assigned the book in this form because InQuizitive will point you back to the relevant section in the text, should you need a hint/to review. Plus, you can take notes, bookmark, search, and highlight in the e-book, which you can also read offline. Feel free to use your device's built-in text-to-speech app to read the text aloud to you.



- **Gaining access:** I have made the e-text with InQuizitive and other digital resources available for purchase as a package (ISBN: 978-0-393-89370-0) through the Bard Bookstore (for roughly \$75, which includes an access code to InQuizitive). You may be able to find a cheaper option elsewhere (e.g., directly through the publisher). Regardless, be sure to get the *4th edition of the text plus access to InQuizitive* (which may or may not come with the book, depending on how you purchase it; InQuizitive access can be purchased separately through the publisher if need be). One of the reasons that I make the full package available through the Bard Bookstore is that doing

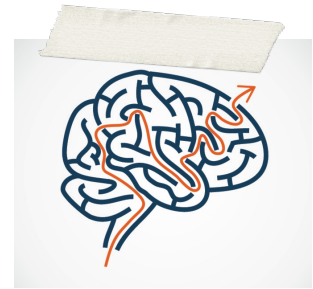
so opens up additional financial aid options (see the section on “Financial Support” below if the cost of the required course materials presents a particular burden).

Everyone should follow these steps to access InQuizitive:

1. Visit your book’s digital landing page: <https://digital.wwnorton.com/researchpsych4> (you probably want to bookmark this page, so you can come back to it easily throughout the course)
 2. Click the green button in the center of the page to “sign in, register a code, or purchase access”
 3. Select “No, I need to register, purchase, or sign up for trial access.”
 4. Enter your name and @bard.edu email address before creating a password
 5. As you complete registration, you’ll have the following access options:
 - a) If you already have a registration code (e.g., from your purchase at the Bard Bookstore), enter your registration code and click “Register my code”
 - b) If you want to purchase digital product access online, select the “I want to purchase access” option
 - c) If you want to try digital products before purchasing, select the “I want to sign up for free trial access” option; feel free to use this free, three-week trial access period if you are still considering dropping this course or need more time to seek out financial aid. But after the three-week trial, you will be prompted to enter a registration code from your purchase—don’t forget, as you’ll need continuous access to InQuizitive
 6. The first time you access an activity from the landing page (remember to bookmark <https://digital.wwnorton.com/researchpsych4>), you’ll be asked to enter a Student Set ID number, which links your work to our class (so that you receive credit); that number is: **621531**
 7. Stuck? This page offers a more detailed rundown of the above steps: <https://wwnorton.knowledgeowl.com/help/getting-started-students-DLP-registration>
- **Late InQuizitive Assignments:** Note that InQuizitive assignments are only accepted up to a certain deadline set in the online system; as such, if you don’t complete an assignment by the deadline (and don’t use your token to extend that deadline), you’ll risk getting a 0% for that assignment (i.e., there isn’t a late penalty that accrues gradually). However, I will drop your two lowest InQuizitive scores (meaning that you can miss two assignments without it affecting your grade).
 - **Technical requirements:** Your e-book and InQuizitive should work on most modern devices (computers, tablets, phones, etc.) and browsers. To be sure, check out these minimum system requirements: <https://wwnorton.knowledgeowl.com/help/system->

[requirements](#). If you do not have access to a suitable device for class, please contact me privately, and we'll get you squared away.

- **Support:** Your first InQuizitive assignment teaches you how to use the platform, so don't fret if it all seems new right now.
 - Should you want a quick reference, help notes can be found here: <https://www.norton.knowledgeowl.com/help/inquizitive-students>.
 - If you require additional assistance with the e-book or InQuizitive at any time (e.g., you get an error message) please contact their Support Team directly at <http://support.wwnorton.com>. In many cases, they will be able to provide fixes faster than I can. Their representatives will help you via live chat once you submit a request form. Be sure to provide them with the following:
 - Your school: Bard College
 - Your instructor's name: Justin Hulbert
 - Your section name: PSY 201, Fall 2022
 - Your Student Set ID number: 621531
- **Literature Review** (10% of your final grade) is a great way to explore a research area that is of interest to you, personally. As such, the literature search, along with your written summary and synthesis of the relevant published empirical findings and theorizing will be completed individually. Your review (for which additional specifications will be provided later) must be written in American Psychological Association (APA) style, giving you additional practice with this approach to formatting.
- **Group Project** (18% of your final grade) entails selecting an empirical question that you and your group members (3-4 students per group) would be able to investigate using an experiment (i.e., not a correlational study), designing and implementing that experiment, analyzing the resultant data, and presenting your work in a variety of formats standard to the field of psychological science. Most of these steps will be evaluated based on a single group submission; however, each group member will be responsible for writing up their own APA-style research report. This project requires a high degree of commitment during the lab periods, as well as between meetings (in some cases, scheduled on your own). That said, the regular lab work is designed to be completed, in large part, during the relevant lab period(s), provided students maintain their focus and productivity throughout. Some students, however, occasionally may wish/need to take extra time to finish this lab work outside of the lab times. Some further details about the various steps can be found below, but you'll get further instructions about each sub-assignment as the semester progresses:
 - **IRB proposal** (one submission per group; 2% of final grade) will describe your experiment protocol, including how you plan to recruit potential subjects and carry out



informed consent, collect data, and (importantly) balance the risks and benefits to research subjects. As this is a class project and *not* meant to produce generalizable research according to the rules governing the Institutional Review Board (IRB, <https://www.bard.edu/irb>), the ethics of your class assignment will be assessed by your instructor and peers in accordance with the human subjects training you will complete as a matter of course (<https://www.bard.edu/irb/training/>). As many of you will later need to submit a full protocol for IRB review prior to conducting your Senior Project, this class exercise will provide a solid foundation for moving forward. In fact, the certificate you receive at the end of your CITI human subjects training should be retained, as you will need it for subsequent research you might conduct involving human subjects (including empirical and proposal Senior Projects in Psychology).

- **Pre-registration** (*one submission per group; 2% of final grade*) of empirical work is a key aspect of Open Science. As such, prior to beginning data collection, your group will be asked to pre-register your empirical plan online using the template at <https://aspredicted.org/>. We'll walk through this process in lab, but when you complete this form, be sure to include me (jhulbert@bard.edu) as a co-author and select "Class project or assignment" as the submission type for record-keeping purposes.
- **Research report** (*each and every student is responsible for a distinct report submission; 10% of final grade*) is to be written *individually* and formatted in APA-style with the following sections: (a) a **cover letter** addressed to the editor of a real journal you have selected explaining why it would make an appropriate home for your published manuscript; (b) a **title page**; (c) 150-250 word **abstract**; (d) an **introduction** section— noting that this section is not explicitly labeled as such in APA style; (e) a **method** section with subsections for participants, materials, and procedure; (f) a **results** section with figures/tables embedded; (g) a **discussion** section; (h) **references**; and (i) optional **appendices**. We will review the nature of such reports more thoroughly in class/lab meetings. I expect a fair amount of overlap in the concepts, methods, references, etc. across group members (they are, after all, based on the same underlying experiment); however, each student is responsible for writing their own report *in their own words*. My purpose in assigning this component of the project individually is to provide each and every one of you the opportunity to practice the skills that will become so critical to upper-level College work in the major and beyond. To this end, you will also be required to produce your own figures/tables for this report. While it's fine (encouraged even!) to peer review each other's reports (inside the group or across groups), it is absolutely *not* OK to plagiarize. The more seriously you take this project and the feedback you receive from it, the more prepared you'll be for moderation, the Senior Project in Psychology, and work in outside research labs. Indeed, your report will be graded much like an empirical Senior Project would (to avoid any unpleasant surprises, you should familiarize

yourself with the relevant assessment guidelines before, during, and after the implementation of your experiment: <https://faculty.bard.edu/~jdainerbest/handbook/sproj.html#sprojgrading>). Note that the report will be graded, in part, based on the soundness of the design, the appropriateness of the statistics, as well as the quality of the write-up itself.

- **Slide presentation** (*one slideshow per group—but everyone should be involved in designing and presenting it; 2% of final grade*) will take the format of a conference-style short (7-minute, strictly timed) talk with slides (e.g., PowerPoint, Keynote, Prezi, or Google Slides). Indeed, other than this being a group presentation as opposed to an individual one (and slightly longer, for that reason), this happens to be the general format of the required Senior Project midway presentation. Given how difficult it can be to prepare an effective short talk, this component of your group project will also help ready you for what is to come in the major.
- **Poster presentation** (*one poster per group—but everyone should be involved in designing and presenting it; 2% of final grade*) provides a way to practice consolidating a semester's worth of detailed research and transforming it into an eye-catching, efficient, and informative visual display capturing the highlights of your Group Project. You and your group partners will have the opportunity to design and present a poster illustrating the relevant background (including key citations), method, results (including at least one graph or table), and conclusions (with future directions) of your experiment. You have, no doubt, seen some examples of research posters as you traveled through the halls of RKC and Preston. We will discuss poster design in class/lab, but if you need some inspiration or further guidance, you are encouraged to check out the "Poster Tips" section inside the Course Introduction module of our Brightspace page. Remember that research posters represent a concentrated version of a larger project. Details from your project that are not critical to understanding the "big picture" should not be included in the poster. Figuring out just what should/should not be included takes practice. That's precisely why we're practicing it!
- **Final Reflection** (*2% of final grade*) will provide a thoughtful account of what you (personally) learned in this course. Your reflection should be organized, go beyond simply parroting back course material verbatim, and include how some of the big lessons from this course could be applied to your education, personal life, and/or career going forward. While your submission should be a polished product, having been fine-turned through careful editing, you are welcome to adopt a format that reflects your own preferred style. You could, of course, format this as a standard written term paper, but you could instead produce a video, animation, comic book, podcast, website, or interpretive dance... OK, maybe not an interpretive dance. But you do have pretty wide latitude here. If you're unsure as to whether your plan is appropriate, check with me. To give you a general guideline, your submission should be roughly equivalent to a 3-

to-4-page (double-spaced, 11-or 12-point font) paper with reasonable margins. No matter the format, take it seriously and commit the necessary time to producing it. It is OK to submit a link to your reflection (if, e.g., you posted a video to Youtube or created a website); however, you should not continue to edit the material after the deadline (at least until I've had a chance to grade it).

- **Extra Credit**

- Not giving a s#!t about the class is a recipe for falling behind. But ***not using your "S#!T Happens" token*** this semester will be met with *5 extra percentage points added to your final exam score* (i.e., if you received a 75% on your final exam, you'd be able to get an 80% with this extra credit opportunity). Look, I get it. Life sometimes gets in the way of deadlines. Pets do sometimes eat homework. Emergencies happen (pandemic related or otherwise). And, as much as we try to avoid it, we occasionally might plain forget a deadline. In an effort to be flexible and fair to all students, I am offering everyone one "S#!T Happens" token. Think of it like a "get-out-of-a-deadline" free card. Just email me saying that you would like to use your S#!T Happens token on a particular class assignment, and I will grant what together we determine to be a reasonable extension, *no questions asked*. You don't have to explain why you are using the token. Just tell me that you are using it so that we can set an extension (without any late penalty). Note that the token may *not* be used for exams; all work must be submitted *prior to the end of Completion Week* in order for it to count (i.e., you can't use your token to extend a deadline past the end of the semester). While it is completely reasonable to use your token during the semester and there should be absolutely no shame in doing so, if you happen to be lucky enough not to need to use it, I will grant extra credit points. Of course, if you realize that something may prevent you from completing your contribution to a pending group assignment, please give your group members (and your instructor) as much advanced warning as possible so that everyone can adjust accordingly.
- Over the course of the semester, there will be a number of **psychology-sponsored colloquium talks** (see <http://psychology.bard.edu>, the monthly Psychology Newsletter, and postings around campus for dates and locations). Attending these talks is a great way to hear from interesting people in the field of psychology (and mingle over some snacks afterwards, health restrictions permitting). It is also a way of earning up to *4 extra percentage points to be added to your final exam score*. To receive credit, attend a talk and submit one original question you would have for the speaker (it can't be a question someone else in the audience asked) to Brightspace *within 48 hours of the talk* (see the "Extra Credit: Attend Psych Colloquium & Submit Question" assignment in the "Course Introduction" module of our Brightspace site). Attendance at a talk and corresponding question submission will earn you a total of 2 extra percentage points added to your final exam score for each talk up to the maximum (since the exams are equally weighted,

you can think of these points as going toward any exam grade). You may *not* receive extra credit in two different courses for attending the same talk.

Additional Resources

There are treasure troves of information about psychology sprinkled around the interwebs—much of it can be accessed for free. If you find yourself struggling to understand a concept (or are looking for resources for your Group Project), I'd encourage you to search around, carefully evaluate the quality of the sources, and share useful finds with the rest of the class (email it or, even better, post it to a discussion forum on Brightspace). Below are some resources I have identified:

- APA formatting and general reference:
 - Purdue Online Writing Lab (OWL): https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html
 - I posted some additional reference materials inside the "APA Style/Scientific Paper Writing Tips" submodule inside of the "Course Introduction" of Brightspace.
 - Middlebury Library: <https://middlebury.libguides.com/citation/apa7>
 - ECU Library: <https://libguides.ecu.edu/c.php?g=982594&p=7463742>
 - Video Tutorials: <https://apastyle.apa.org/instructional-aids/tutorials-webinars>
 - APA Dictionary of Psychology: <https://dictionary.apa.org>
- Searchable article databases (and tutorials):
 - Library: <https://libguides.bard.edu/psychology>
 - APA Database Tutorials: <https://www.apa.org/pubs/databases/training/tutorials>
 - Google Scholar: <https://scholar.google.com>
- Free textbooks & related resources:
 - Research Methods:
 - Crump et al.: <https://crumplab.github.io/ResearchMethods/index.html>
 - Cuttler et al.: <https://open.umn.edu/opentextbooks/textbooks/75>
 - Saylor: <https://legacy.saylor.org/psych202a/Intro/>
 - University of Minnesota: <https://open.lib.umn.edu/psychologyresearchmethods/>
 - Bhattacharjee: https://scholarcommons.usf.edu/oa_textbooks/3/
 - Statistics:
 - De Anza: <https://openstax.org/details/introductory-statistics>
 - Saylor: <https://open.bccampus.ca/browse-our-collection/find-open-textbooks/?uuid=929d4a8d-30b2-4ced-8b50-c39447dc0b74>
 - Brown University Statistics Visualizations: <https://seeing-theory.brown.edu>
 - VassarStats: <http://vassarstats.net>
 - Effect Size Calculator: https://katherinemwood.shinyapps.io/lakens_effect_sizes/
 - Jamovi Open Stats: <https://www.jamovi.org>

- Power analysis guide using G*Power: <http://www.mormonsandscience.com/gpower-guide.html>
- Help choosing an appropriate statistical test:
 - <http://www.statsflowchart.co.uk>
 - <https://stats.idre.ucla.edu/other/mult-pkg/whatstat/>
 - <https://www.statstutor.ac.uk/resources/uploaded/tutorsquickguidetostatistics.pdf>
 - https://www.central7.net/wp-content/uploads/2015/09/stats_flow_chart_v2014.pdf
- General reference (this could be useful for your other courses, too):
 - Open Textbook Library: <https://libguides.humboldt.edu/openedu/psyc>
 - NOBA Project: <http://noba.to/d95jpvm7>
 - Simply Psychology: <https://www.simplypsychology.org>
 - Project Gutenberg: <https://www.gutenberg.org/ebooks/bookshelf/64>
 - MERLOT Project: <https://www.merlot.org/merlot/Psychology.htm> (or to search more widely <https://www.merlot.org/merlot/searchMaterials.htm>)
 - DevPsy Directory: http://www.devpsy.org/links/open_source_textbooks
 - Neuroscience Online: <https://nba.uth.tmc.edu/neuroscience/toc.htm>
 - Neuroscience Open Text: <http://neuroscience.openetext.utoronto.ca>
 - Computational Cog Neuro: <https://github.com/CompCogNeuro/ed4>
- Videos:
 - Khan Academy: <https://www.khanacademy.org/test-prep/mcat/behavior#concept-intro>
 - JoVE Peer-Reviewed Scientific Videos: <https://www.jove.com>
- Stimuli/stimulus selection for experiments:
 - Tarr Lab: <https://sites.google.com/andrew.cmu.edu/tarrlab/>
 - Kahana Lab: http://memory.psych.upenn.edu/Word_Pools
 - Latent Semantic Analysis (LSA): <http://lsa.colorado.edu>
 - MRC Psycholinguistic Database: https://websites.psychology.uwa.edu.au/school/mrcdatabase/uwa_mrc.htm
 - University of South Florida free association norms: <http://w3.usf.edu/FreeAssociation/>
- Experiment software/code:
 - Inquisit Lab: <https://www.millisecond.com/products/lab> (the Psychology Program has a license for this so that you may collect in-person data at no cost to you...ask me about it)
 - PsychoPy: <https://www.psychopy.org> (while this is free, in order to run a web-based experiment, you would need to host it somewhere, which does come at a cost)
 - PsyToolkit: <https://www.pytoolkit.org> (this is free, including for online data collection)
- Participate in online experiments (or get ideas for what is possible, with suggested resources):
 - Bard: <https://bardresearch.sona-systems.com/>

- Social Psychology: <https://www.socialpsychology.org/expts.htm>
- Survey platforms:
 - Qualtrics: <https://bardpsych.qualtrics.com/>
 - Google Forms: <https://forms.google.com>
- Experiment design tools:
 - Balanced Latin square generator: https://cs.uwaterloo.ca/~dmasson/tools/latin_square/
 - Randomizer: <https://www.randomizer.org>
- Open Science:
 - Center for Open Science: <https://www.cos.io/services/research>
 - Open Science Framework (OSF): <https://osf.io>
- Use as an entry point for further research (with caution):
 - Wikipedia: <https://www.wikipedia.org>
 - Youtube: <https://www.youtube.com>
- Cognitive neuroscience methods:
 - Functional Neuroimaging: <https://imaging.mrc-cbu.cam.ac.uk/imaging/Cbulmaging>
 - Event-Related Potentials: <https://erpinfo.org>

Diversity and Access

Students at Bard come from a variety of backgrounds and viewpoints. It is very exciting to be able to benefit from these differences, and I anticipate a learning environment in which all approaches and backgrounds are respected and challenged in a way that promotes personal growth. To this end, I expect all members of the class to foster a climate of intellectual curiosity and enthusiasm by: (1) actively engaging in our activities and discussions; (2) being prepared to recognize the impact of bias, privilege, and histories of inequity; and (3) voicing opinions in a way that respects others. As a rule of thumb to encourage more voices to be heard, after you've contributed to a conversation in class, wait for three other people to speak before sharing more. You may notice that I pause between asking a question and accepting responses from the class. This is for a similar purpose.

Bard College is committed to providing equal access to all students. If you anticipate issues related to the format or requirements of this course, please schedule a meeting with me, as I would like us to discuss ways to ensure your full participation in the course. Together, we can plan how best to support your learning and coordinate your accommodations.

Have a learning difference or disability—including mental health, medical, or physical impairment—and are not yet registered? Please complete the Disability Registration Form found on the Student Disability Access Services website at <https://www.bard.edu/accessibility/students/> and provide disability documentation to disabilityservices@bard.edu. The Director of Disability Resources and Accessibility, Erin Braselmann, or a member of her staff will confidentially discuss with you the process to establish reasonable

accommodations. Please note that accommodations are *not* retroactive and require advance notice to implement (you should allow 2-3 business days for a response after completing the online Disability Registration Form and will then need to arrange a meeting with Disability Access Services to discuss potential accommodations). If you are already registered and have an existing accommodation plan with Disability and Access Services, you must additionally request that the office forward your accommodation letter to the appropriate faculty members (in this case, me) using the Accommodation Letter Request Form (this must be done each semester, for each faculty member you wish to notify): https://docs.google.com/forms/d/e/1FAIpQLSdN9SJ8CS1sKEgqXXyl8iS-hkQBj1GKSw6B-ED9DTEWdXmbLA/viewform?usp=sf_link.

The Bard College Accessibility Converter (<https://www.sensusaccess.com/web3/bard/>) can be used to easily convert documents to a more accessible format. While not all assignments will be equally conducive to non-written submission formats, certain accommodations can be made for audio/video submissions as necessary. Simply contact me with a concrete plan for how the novel format still captures the assignment's learning objectives.

Whether course material brings up challenging issues or you are facing another type of challenge, the Bard Counseling Service may be able to help. For more information, see: <https://www.bard.edu/counseling/>.

COVID-19 Adaptations

Community responsibility will continue to be especially critical to our daily lives. We all have a role to play in helping to keep others as safe as possible. Of course, no choices are risk free, but we can make choices that reduce risk for ourselves and others. Please heed federal, state, local, College, and classroom health and safety policies, realizing that they may change during the semester based on new evidence/circumstances.

Financial Support

The pandemic has further exposed and exacerbated existing inequalities. Bard has put together a collection of resources available for students to reduce the extra costs associated with taking courses at Bard. This listing can be found at <https://docs.google.com/document/d/1um-m6vUYEUz7H0KnIisIjsprgGUDee0I/edit?usp=sharing&ouid=108170187445887963672&rtpof=true&sd=true>.

Notably, the Scale Project is a student-led organization committed to increasing equity and access for lower-income students at Bard. They have produced a document entitled, ["Being Not-Rich at Bard College"](#) that provides additional tips for navigating some of these challenges. The Scale Project and I both welcome additional suggestions and other feedback. The Scale Project also maintains a Bookstore Rental Program to provide access to selected learning materials. Anyone can use this resource, but the Scale Project asks that you not use the Rental Program unless purchasing course materials represents a true financial burden for you (as Scale's resources are also limited). Currently, you may only request a rental for up to three books that

are available at the Bard College Bookstore. Check @thescaleproject on Instagram and emails from the Scale Project for further information on how to make use of this resource.

In addition to the Scale Project's offerings, the Division of Science, Math, and Computing (of which the Psychology Program is a part) has a limited amount of funds to defray the cost of course materials (e.g., textbooks) for students who cannot afford them. Applicable courses include those listed under the Biology, Chemistry, Computer Science, Math, Physics, and Psychology, as well as SCI course designations. Funds are limited, so we ask that students who can access materials through their own means do not make requests through this mechanism. To make use of this resource, fill out this form: <https://forms.gle/tKywtdzGUuWK6YeB6> or contact **Megan Karcher** (karcher@bard.edu) who will work with you to buy or rent the material you need or loan you a copy of the textbook that the Program has on hand. Please make this request at the very beginning of the semester (directly after the first class) to allow yourself enough time to obtain the resources. Note that this process allows students to request the funding without needing to inform the professor. Indeed, professors will not know which students make such requests. If there are likely to be any delays in obtaining access to the course resources, however, it is important to let your instructor know (either directly or going through Megan Karcher) so that you don't miss out on critical assignments (and corresponding grades).

Land Acknowledgment

In the spirit of truth and equity, it is with gratitude and humility that we acknowledge that we are gathered on the sacred homelands of the Munsee and Muhheaconneok people, who are the original stewards of this land. Today, due to forced removal, the community resides in Northeast Wisconsin and is known as the Stockbridge-Munsee Community. We honor and pay respect to their ancestors past and present, as well as to Future generations and we recognize their continuing presence in their homelands. We understand that our acknowledgement requires those of us who are settlers to recognize our own place in and responsibilities towards addressing inequity, and that this ongoing and challenging work requires that we commit to real engagement with the Munsee and Mohican communities to build an inclusive and equitable space for all.

Course Planning

This course requires you spend a good amount of time outside of our class/lab meetings reading, studying, completing major assignments, and otherwise preparing to participate fully and get the most out of the experience (and a commensurate grade). A general rule of thumb is that, for every hour you spend in class or lab (1.33 hours x 2 lectures + 2 lab hours = 4.66 hours/week), you should be spending at least 2 hours outside of class doing coursework/preparation. So, that would mean roughly 9-10 hours of outside work per week. Some weeks (e.g., before an exam or major deadline) may require more of your time outside class, but if you plan in advance and commit to dedicating regular outside time to your studies each week, it will be more



manageable, with fewer week-to-week fluctuations. Think of it this way: Time spent becoming comfortable with design and analysis in this course will save you time when preparing for moderation, the Senior Project, and any future research. While the methods we cover in class may be rather unfamiliar to many (most?) students (and, therefore, will take extra time to grasp fully), other students already may have had extensive experience conducting psychological research. If you find yourself falling behind or desiring more advanced work, simply shoot me an email and/or drop by office hours so we can discuss the way forward. I am happy to try to find additional materials to support your journey through the course and toward your personal goals (as well as the standards set by the Psychology Program and College).

Prospective memory involves remembering to carry out some intended action in the future. You know, like turning in an assignment, taking an online quiz, or preparing for an exam. There's no reason you can't take steps now to improve your ability to carry out the appropriate actions on time, even before we cover the topic. So please, please, please take the time to review all the deadlines below. Transfer them to your personal calendar immediately. Doing so will help you avoid scheduling conflicts (e.g., around Fall and Thanksgiving Breaks and other travel) and allow you to carve out the necessary time to perform your best. Please email me (or meet me for office hours) should you envision a significant disruption to your ability to meet the course requirements/deadlines. I will do my best to work with you (and other resources to which you have access at Bard) to support you. And, remember, you may also use your "S#!T Happens" token, no questions asked, for one deadline extension (details can be found under "Extra Credit," above).

Tentative Course Schedule

Date (day)	#	Topic Assignments
8/30 (tu)	1	WELCOME! PSYCHED TO MEET YOU!!! <ul style="list-style-type: none"> ▶ Course overview ▶ CV workshop • Optional reading: Note-taking tips (on Brightspace, abbreviated BS) ➡ Homework (to be completed by 10am Thursday before class): <ul style="list-style-type: none"> - Carefully read the syllabus - Share your CV with the class (upload to BS as a .pdf) - Get textbook/InQuizitive access - InQuizitive Assignment: How to use InQuizitive (~25min) - Listen to https://bit.ly/38OMUAh Act One (~18min)
9/1 (th)	2	THE SCIENTIFIC APPROACH <ul style="list-style-type: none"> ♦ Before class: Have read the syllabus, uploaded your CV to BS, completed your first InQuizitive assignment, and listened to https://bit.ly/38OMUAh ▶ Syllabus roundup: Your notable picks & questions ▶ Mini-lecture: The empirical approach ▶ In-class reading (BS): LaCour & Green (2016) ▶ In-class listening: https://bit.ly/2KsgLoW (just the Prologue; Act One optional) ▶ Retraction Watch tour: https://bit.ly/3oUgYAd • Optional readings/practice: <ul style="list-style-type: none"> - Broockman & Kalla (2016): https://bit.ly/38TvjHv ➡ Homework (to be completed by 10am before Tuesday's class): <ul style="list-style-type: none"> - Read Chapter 1: Psychology Is a Way of Thinking - InQuizitive Assignment: Chapter 1 (~30min)
9/1 (th)	3	LAB 1: Survey Design <ul style="list-style-type: none"> ▶ Introduction to Qualtrics <ul style="list-style-type: none"> - Go to https://bardpsych.co1.qualtrics.com/ and use Bard single sign-on (SSO) with your Bard credentials to create your account ▶ In-lab getting-to-know-you survey activity ▶ In-lab reading/discussion (BS): Putnam et al. (2016)
9/6 (tu)	4	CONSUMING SCIENCE <ul style="list-style-type: none"> ♦ Before class: Have read Ch. 1 & completed InQuizitive Ch. 1 ▶ Discuss & summarize class survey results from lab—what issues arise? ▶ Mini-lecture: Healthy skepticism, evaluating sources, & the peer review process ▶ In-class reading/activity (BS): Mueller & Oppenheimer (2014) w/ QALMRI ➡ Homework (to be completed by 10am before Thursday's class): <ul style="list-style-type: none"> - Read Chapter 2: Sources of Information - InQuizitive Assignment: Chapter 2 (~30min)

Date (day)	#	Topic Assignments
9/8 (th)	5	THREE CLAIMS ♦Before class: Have read Ch. 2 & completed InQuizitive Ch. 2 ➡Homework (to be completed by 10am before Tuesday's class): - Read Chapter 3: Three Claims, Four Validities
9/8 (th)	6	LAB 2: Improving Survey Design ▶In-lab InQuizitive Assignment: Chapter 6 (~40min) ▶Re-administer getting-to-know-you survey • Optional readings: - Chapter 6: Surveys and Observations (focus on surveys and polls) - Additional survey tips (BS)
9/13 (tu)	7	AUDITING CLAIMS WITH THE BIG FOUR VALIDITIES ♦Before class: Have read Ch. 3 ➡Homework (to be completed before Thursday's class): - InQuizitive Assignment: Chapter 3 (~45min)
9/15 (th)	8	CONDUCTING ETHICAL RESEARCH ♦Before class: Have completed InQuizitive Ch. 3 ▶Mini-lecture: Ethics ▶In-class activities: Informed Consent & Mock IRB • Optional reading: - Chapter 6: Surveys and Observations (focus on behavioral observations) ➡Homework (to be completed by 10am before Tuesday's class): - Read Chapter 4: Ethical Guidelines for Psychology Research - InQuizitive Assignment: Chapter 4 (~30min) ➡Homework (to be completed by 10am on 10/4): - CITI Human subjects training: click "Instructions for CITI Program Human Subject Research Training" @ https://www.bard.edu/irb/training/ --this takes a few hours
9/15 (th)	9	LAB 3: Variables & Validity
9/20 (tu)	10	MEASUREMENT ♦Before class: Have read Ch. 4 & completed InQuizitive Ch. 4 ✓Study Guide for Exam #1 released by today ➡Homework (to be completed by 10am before Thursday's class): - Read Chapter 5: Identifying Good Measurement
9/22 (th)	11	QUANTITATIVE DESCRIPTIVE RESEARCH ♦Before class: Have read Ch. 5 ➡Homework (to be completed by 10am before Tuesday's class): - InQuizitive Assignment: Chapter 5 (~45min) - Read Statistics Review: Descriptive Statistics (end of textbook)

Date (day)	#	Topic Assignments
9/22 (th)	12	LAB 4: Avoiding Plagiarism & Developing Novel, Testable Research Questions ► Plagiarism FAQ: https://bit.ly/3quKTz8 • Optional reading, training, & certification: – https://plagiarism.iu.edu – https://ori.hhs.gov/plagiarism-0
9/27 (tu)	13	GET READY: Exam #1 review session ♦ Before class: Have completed InQuizitive Ch. 5 & read Statistics Review: Descriptive Statistics (end of textbook) • Bring your exam questions to class (review will be driven entirely by your questions)
9/29 (th)	14	EXAM #1
9/29 (th)	15	LAB 5: APA Style Basics • Optional reading: – APA-Style Reports and Conference Posters (end of textbook) ➡ Homework (to be completed by 10am before Tuesday's class): – Read Chapter 7: Sampling – CITI human subjects training certificate (screen grab/download final certificate) uploaded to BS
10/4 (tu)	16	SAMPLING ♦ Before class: Have read Ch. 7 & uploaded a .pdf of your CITI human subjects training certificate to BS ➡ Homework (to be completed by 10am before Thursday's class): – InQuizitive Assignment: Chapter 7 (~45min)
10/6 (th)	17	CORRELATION ♦ Before class: Have completed InQuizitive Ch. 7 • Optional reading: – Chapter 9: Multivariate Correlational Research ➡ Homework (to be completed by 10am before next Thursday's class): – Read Chapter 8: Bivariate Correlation – InQuizitive Assignment: Chapter 8 (~45min)
10/6 (th)	18	LAB 6: Group Project Brainstorming & Literature Review ► Group Project members assigned ➡ Homework (to be completed by 10am on 10/20): – Literature Review
10/11 (tu)	--	NO CLASS - FALL BREAK

Date (day)	#	Topic Assignments
10/13 (th)	19 SIMPLE EXPERIMENTS	<p>♦Before class: Have read Ch. 8 & completed InQuizitive Ch. 8</p> <p>► Course feedback survey (online, anonymous)</p> <p>• Optional reading:</p> <ul style="list-style-type: none"> – Statistics Review: Inferential Statistics (end of textbook) <p>➡Homework (to be completed by 10am before Tuesday's class):</p> <ul style="list-style-type: none"> – Read Chapter 10: Introduction to Simple Experiments – InQuizitive Assignment: Chapter 10 (~45min)
10/13 (th)	20 LAB 7: Statistics with Jamovi	<p>► Go through IRB template for Group Project</p> <p>➡Homework (to be completed by 10am on 11/1):</p> <ul style="list-style-type: none"> – Initial IRB Proposal for Group Project
10/18 (tu)	21 REPEATED MEASURES	<p>♦Before class: Have read Ch. 10 & completed InQuizitive Ch. 10</p> <p>► Go over course feedback survey results</p> <p>➡Homework (to be completed by 10am before Thursday's class):</p> <ul style="list-style-type: none"> – Literature Review
10/20 (th)	22 CONFOUNDS & BIAS	<p>♦Literature Review (.pdf format) due by 10am (BS)</p> <p>➡Homework (to be completed by 10am before Tuesday's class):</p> <ul style="list-style-type: none"> – Read Chapter 11: More on Experiments: Confounding and Obscuring Variables – InQuizitive Assignment: Chapter 11 (~45min)
10/20 (th)	23 LAB 8: Avoiding Bias/Confounds & Drafting the Method Section	
10/25 (tu)	24 FACTORIAL DESIGNS	<p>♦Before class: Have read Ch. 11 & completed InQuizitive Ch. 11</p> <p>✓Study Guide for Exam #2 released by today</p> <p>➡Homework (to be completed by 10am before Thursday's class):</p> <ul style="list-style-type: none"> – Read Chapter 12: Experiments with More Than One Independent Variable
10/27 (th)	25 FACTORING IN EXTRA TIME FOR FACTORIAL DESIGNS	<p>♦Before class: Have read Ch. 12</p> <p>➡Homework (to be completed by 10am before Tuesday's class):</p> <ul style="list-style-type: none"> – InQuizitive Assignment: Chapter 12 (~45min) – Initial IRB Proposal for Group Project
10/27 (th)	26 LAB 9: Factorial Designs & Pre-Registration	
11/1 (tu)	27 IRB WORKSHOP	<p>♦Initial IRB Proposal (single group submission in .pdf format) due by 10am (BS)</p> <p>♦Before class: Have completed InQuizitive Ch. 12</p> <p>➡Homework (to be completed by 10am before Thursday's class):</p> <ul style="list-style-type: none"> – Revise your IRB Proposal

Date (day)	#	Topic Assignments
11/3 (th)	28	PRE-REGISTRATION WORKSHOP ♦ Final IRB Proposal (single group submission in .pdf format) due by 10am (BS) ➡Homework (to be completed by 10am before Tuesday's class): – Finalize Pre-Registration
11/3 (th)	29	LAB 10: Implementing Your Experiment
11/8 (tu)	30	GET READY: Exam #2 review session & practice critiquing journal articles ♦ Pre-Registration (submit one per group as a "class project" using https://aspredicted.org and include jhulbert@bard.edu as a co-author for verification purposes) by 10am—note that data collection cannot begin until after pre-registration has been submitted • Bring your exam questions to class (review will be driven entirely by your questions) • Optional advice on critiquing journal articles (BS)
11/10 (th)	31	EXAM #2
11/10 (th)	32	LAB 11: Writing Advice & Data Collection
11/15 (tu)	33	QUASI-EXPERIMENTAL & SMALL-N DESIGNS ➡Homework (to be completed by 10am before Tuesday's class): – Read Chapter 13: Quasi-Experiments and Small-N Designs – InQuizitive Assignment: Chapter 13 (~45min)
11/17 (th)	34	QUALITATIVE METHODS
11/17 (th)	35	LAB 12: Data Analysis & Drafting Results Section
11/22 (tu)	36	OPEN SCIENCE ♦ Before class: Have read Ch. 13 & completed InQuizitive Ch. 13 • Optional readings (BS): Munafò et al. (2017); Nosek & Bar-Anan (2012) ➡Homework (to be completed by 10am before Tuesday's class): – Read Chapter 14: Replication, Transparency, and Real-World Importance – InQuizitive Assignment: Chapter 14 (~45min)
11/24 (th)	--	NO CLASS - THANKSGIVING RECESS
11/24 (th)	--	NO LAB - THANKSGIVING RECESS
11/29 (tu)	37	GROUP PROJECT WORK ✓ <i>Study Guide for Exam #3 released by today</i> ♦ Before class: Have read Ch. 14 & completed InQuizitive Ch. 14 ➡Homework (to be completed by 10am before Thursday's class): – Finalize your group's presentation slides & practice slideshow
12/1 (th)	38	GROUP PROJECT WORK ♦ Final presentation slides (single group submission) uploaded by 10am (BS)
12/1 (th)	39	LAB 13: GROUP SLIDESHOW PRESENTATIONS

Date (day)	#	Topic Assignments
12/6 (tu)	40	POSTER WORKSHOP <ul style="list-style-type: none"> • Optional re-reading: <ul style="list-style-type: none"> - APA-Style Reports and Conference Posters ➡ Homework (to be completed by 10am before Thursday's class): <ul style="list-style-type: none"> - Finalize your group's poster and practice poster presentation
12/8 (th)	41	GET READY: Exam #3 review session <ul style="list-style-type: none"> ♦ Submit your group's Poster (single group submission in .pdf format) by 10am ▶ Extra time to be used for practicing poster presentation
12/8 (th)	42	LAB 14: Poster Session
12/13 (tu)	43	EXAM #3
12/15 (th)	--	NO CLASS - COMPLETION DAYS <ul style="list-style-type: none"> ♦ Final Research Report (individual submission in .pdf format) due by *11:59pm* (BS) ♦ Final Reflection (individual submission) due by *11:59pm* (BS)
12/15 (th)	--	NO LAB - COMPLETION DAYS

Schedule is subject to change to improve pacing and/or accommodate unforeseen events (e.g., severe weather, pandemic, alien abduction). Check announcements on Brightspace/over email.