PS214: Research Methods and Statistics in Psychology I
Fall 2014
Department of Psychology, Colby College

Lecture meetings: Tuesdays and Thursdays, 11:00AM–12:15PM, Lovejoy 100
Lab meetings: Thursdays, 1:00–2:15PM (Lab A); Thursdays, 2:30–3:45PM (Lab B); Fridays, 1:00–2:15 (Lab C), Davis 308

Instructors
Course Instructor: Prof. Erin Sheets
  Office: Davis 336
  Office Hours: Mondays, 2:00-3:30 and 5:30-7:00
  Email: essheets@colby.edu
  Phone: 207-859-5569

Lab Instructor, Thursday Labs: Prof. Chris Soto
  Office: Davis 333
  Office Hours: Mondays, 1:00-3:00
  Email: cjsoto@colby.edu
  Phone: 207-859-5560

Lab Instructor, Friday Lab: Prof. Jen Coane
  Office: Davis 330
  Office Hours: Wednesdays, 1:00-2:00, and Fridays, 11:00-12:00
  Email: jhcoane@colby.edu
  Phone: 207-859-5556

Course Assistants
Lab Assistants: Thursdays 1:00 - Misha Strage, mfstrage@colby.edu
  Thursdays 2:30 - Emily Paulison, enpaulis@colby.edu
  Fridays 1:00 - Chris Krasniak, cskrasni@colby.edu
Homework Assistant: Emily Paulison, enpaulis@colby.edu

Course Goals
The overarching goal of PS214 is to train you as a research psychologist—an informed consumer and producer of psychological science. At the conclusion of this course, you should be able to:

- Ask and answer statistical questions about data
- Use SPSS, a statistical software package, to analyze data
- Find, understand, and critically evaluate empirical research in psychology
- Design an empirical study and write a research proposal following the conventions of American Psychological Association (APA) style
Readings and Materials

The following textbooks are required for the course:


The following textbook is optional:

Assigned readings from the optional textbook will be made available on the course website. To comply with copyright regulations, these readings will be available only one at a time, so if you do not purchase a copy of this book be sure to print each reading while it is available.

You should have a calculator that you can use for in-class example problems, homework, and exams. It does not need to be fancy (i.e. does not have to be a graphing calculator); anything with a square-root button will work. You should also have a stapler; please staple everything that you hand in. Finally, we recommend bringing a USB flash drive to lab meetings, so that you can save a copy of your work.

Evaluation

Exams
To assess your understanding of the course material, there will be three exams over the course of the semester. Exam 2 will not be explicitly cumulative; it will focus on course material presented after Exam 1. However, many concepts tested on Exam 2 will build on concepts tested on Exam 1. The Final Exam will be cumulative.

All exams will be partially open-note. For each exam, you will be allowed to reference your notes from one 4” x 6” index card (both sides). You must hand-write your notes yourself, and you must hand in the note card with the exam.

Homework and In-Class Assignments
Because mastery of the course material requires practice, there will be regular homework and in-class assignments over the course of the semester. Homework assignments will be posted on the course website. In-class assignments may or may not be announced beforehand.

Homework assignments are due by the **beginning of class** on the due date (typically Tuesdays, 11:00AM); these may be turned in directly to me or to the box next to my office door (Davis 336). All assignments turned in complete and on time will receive full credit;
late assignments will not receive credit. You may miss one homework or in-class assignment without penalty. The homework assistant will lead weekly study sessions that focus on the homework assignments. If you would like to join the homework study group, let Emily know by email.

**Lab Assignments**
Lab meetings will focus on the SPSS statistical software package and the research proposal. Labs will meet every week unless announced otherwise. You should bring the Green and Salkind textbook to each lab meeting. Weekly lab assignments will be posted on the Moodle page. You will turn in these assignments by email, either during your lab meeting or by the following Tuesday by 11:00AM. As with homework assignments, all lab assignments turned in complete and on time will receive full credit; late assignments will not receive credit. You may not miss any lab assignments.

**Research Proposal**
To assess your understanding of the research process, scientific writing, and APA style, you will write a paper that (a) identifies an important and unanswered research question, (b) reviews previous research relevant to the question, and (c) proposes a new study designed to address the question. Further details about the research proposal will be provided in your lab section. Your lab instructor will provide feedback as you draft the research proposal assignment. Your lab instructor will grade your final research proposal.

**SPSS Quiz**
During the final lab meeting, you will take a quiz that assesses how well you can use SPSS to answer statistical questions. This quiz will be entirely open-note and open-book. Unlike the regular lab assignments, your performance on the quiz will be graded from 0% to 100%.

**Course Grades**
Course grades will be weighted as follows:

<table>
<thead>
<tr>
<th>Course component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>20%</td>
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<tr>
<td>Exam 2</td>
<td>25%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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<tr>
<td>Research Proposal</td>
<td>15%</td>
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<tr>
<td>SPSS Quiz</td>
<td>10%</td>
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<tr>
<td>Homework, in-class, and lab assignments</td>
<td>See below</td>
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</table>
Because research design and data analysis are fundamental aspects of psychological science, you must earn a final course grade of C or better to continue as a psychology major. Your course grade will be determined by the weighted average of your grades from the three exams, the research proposal, and the SPSS quiz. This average must be at least 70% for you to pass the course. Furthermore, your final course grade may be adjusted up or down by one-third of a grade on the basis of homework, in-class, and lab assignments. This adjustment may lower your course grade from passing to failing, but it may not raise your grade from failing to passing.

Course Policies

Academic Honesty
The department abides by the following college policy as stated in the Colby College Catalogue: “Plagiarism, cheating, and other forms of academic dishonesty are serious offenses. For the first offense, the instructor may dismiss the offender from the course with a mark of ‘F’ and will also report the case to the department chair and the dean of students, who may impose other or additional penalties, including suspension or expulsion...A second offense automatically leads to suspension or expulsion.” If you have questions about how to cite others’ work or any other aspects of academic honesty, please do not hesitate to speak to one of the instructors. It is always better to ask a question about academic honesty than to make a bad decision.

Attendance
Students are expected to attend all class meetings and are responsible for any work missed. You should review the syllabus carefully at the beginning of the semester to determine whether you will have any scheduling conflicts, and discuss them with the instructor well in advance.

Classroom Behavior
- It is expected that you will arrive on time for all class meetings.
- It is expected that you will have cell phones turned off and that you will not text or read texts during class.
- I strongly discourage you from bringing a computer to class. It is distracting for those around you, for me, and is often extremely distracting for you.
- It is expected that you will interact with fellow students, the course assistants, and the instructors in an open-minded, respectful manner.

Delayed Exams/Papers
This course follows the psychology department’s general policy on delayed exams and deadline extensions: Students should treat deadlines as firm. Only documented medical excuses, documented personal catastrophes (such as a death in the family), and religious observances will be accepted as reasons not to take an exam or turn in an assignment as scheduled. If you are, for legitimate reasons, unable to take an exam or turn in an assignment when it is scheduled, you should notify the instructor in advance of the exam time or due date. Having a lot of work to do, several exams/papers in a few days, being
generally unprepared, or having conflicting travel arrangements are not acceptable excuses to miss an exam or due date.

**Email**
Before emailing me, please check if your question can be answered by the syllabus or the course website. I will do my best to answer your email within 24 hours of when it was received.

**Religious Observances**
Practitioners of a religious tradition requiring time apart from the demands of the normal work schedule on a particular day (or days) should contact the instructor **in advance** to make arrangements for academic events that conflict with a religious observance.

**Support for Students with Disabilities and Learning Differences**
If you have a disability or learning difference for which an academic accommodation is needed, please contact the instructors to discuss this as soon as possible.

### Course Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topics and Readings</th>
<th>Lab Topics and Research Proposal Deadlines</th>
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<tbody>
<tr>
<td>Thu 09/04</td>
<td>Course Introduction</td>
<td>Lab 1: Data Collection and Entry</td>
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<td>No readings</td>
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<tr>
<td>Tue 09/09</td>
<td>Psychological Science</td>
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<td>Cozby, Chapter 1</td>
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<td>Thu 09/11</td>
<td>Research Design</td>
<td>Lab 2: Data Files and Proposal Topics</td>
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<td>Cozby, Chapter 4</td>
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<td>Tue 09/16</td>
<td>Research Ethics</td>
<td><strong>Due: Description of Proposal Topic</strong></td>
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<td>Cozby, Chapter 3</td>
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<tr>
<td>Thu 09/18</td>
<td>No lecture: Professor at conference</td>
<td>Lab 3: Literature Searches</td>
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<td>Tue 09/23</td>
<td>Psychological Measurement</td>
<td><strong>Due: List of References</strong></td>
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<td>Cozby, Chapter 5</td>
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<td>Thu 09/25</td>
<td>Frequency Distributions</td>
<td>Lab 4: Displaying and Describing Data</td>
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<td></td>
<td>Howell, sections 1.0–1.2, 2.0–2.2, 2.5</td>
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<td>Tue 09/30</td>
<td>Central Tendency and Variability</td>
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<td></td>
<td>Howell, sections 2.6–2.8, 2.12</td>
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<tr>
<td>Thu 10/02</td>
<td><strong>Exam 1</strong></td>
<td>No lab meeting</td>
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**Part 1: Research Design and Working with Data**

**Exam 1**
Part 2: Testing Hypotheses about Means

Tue 10/07  Normal Distributions
Howell, sections 3.0–3.4

Thu 10/09  Sampling Distributions
Howell, sections 4.0–4.2, 7.1

Tue 10/14  No lecture: Fall Break

Thu 10/16  Hypothesis Testing
Howell, sections 4.3–4.4, 4.6–4.8, 4.11

Lab 5: Proposal
Introduction Section

Lab 6: Sampling
Distributions

Due Sun, 10/19:
Draft of Proposal
Introduction Section

Tue 10/21  The z test
Howell, section 7.2

Thu 10/23  The One-Sample t test
Howell, section 7.3

Tue 10/28  The Matched-Samples t test
Howell, section 7.4

Thu 10/30  The Independent-Samples t test
Howell, section 7.5

Lab 7: Proposal
Method Section

Lab 8: t tests
Due: Draft of
Proposal Method and
Expected Results
Sections

Tue 11/04  Topic and Readings TBA

Thu 11/06  Exam 2

Part 3: Correlation, Regression, and Categorical Data

Tue 11/11  Correlation
Howell, sections 9.0–9.5

Thu 11/13  Regression
Howell, sections 9.6, 9.8, 9.11

Tue 11/18  Testing Hypotheses About Correlation and Regression
Howell, sections 9.12, 9.14

Lab 9: Correlation and Regression

Thu 11/20  Multiple Regression
Howell, sections 15.0–15.3, 15.7

Lab 10: Multiple Regression
Due: Final Research Proposal

Tue 11/25  Moderation
Howell, section 15.14

Lab 10: Multiple Regression
Due: Final Research Proposal
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Thu 11/27</td>
<td>No lecture: Thanksgiving</td>
<td>No lab meeting</td>
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<tr>
<td>Tue 12/02</td>
<td>Mediation</td>
<td>Howell, section 15.14</td>
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<tr>
<td>Thu 12/04</td>
<td>Categorical Data</td>
<td>SPSS Quiz</td>
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<td></td>
<td>Howell, sections 6.0–6.3</td>
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<tr>
<td>Sat 12/13</td>
<td><strong>Final Exam, 6:00 pm</strong></td>
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