



# OTRP *online*

office of teaching resources in PSYCHOLOGY

## ELEMENTARY PSYCHOLOGICAL STATISTICS (PSYC 2311)

Section AA: MW 9:00 am – 10:40 am, Jubilee Hall, Room 350

Section BB: MW 11:00 am – 12:40 pm, Jubilee Hall, Room 350

### INSTRUCTOR

Dr. Amy Joh, 357 Jubilee Hall, [amy.joh@shu.edu](mailto:amy.joh@shu.edu), (973) 275-2709

Office hours: Mondays and Wednesdays 1-2:30 pm and by appointment

### PREREQUISITES

Students must have earned a minimum of C- in PSYC 1101 and have taken and passed MATH 1202 or equivalent.

### COURSE DESCRIPTION AND OBJECTIVES

This course is a skill course that will help you develop the statistical tools and abilities crucial to psychology. In the field of psychology, theories and facts are derived from research, which involves gathering data through various techniques. To make sense of the data, psychologists use statistics to examine and make inferences about the mind and body. Thus, the skills learned in this class are critical to all branches of psychology.

By the end of the course, students should be able to (1) choose the appropriate statistical test to apply to a set of data based on the characteristics of the data and the research question; (2) analyze a wide variety of data as well as the relationship among data, statistics, interpretation, and research; (3) successfully use Excel to perform statistical calculations; (4) critically interpret graphical displays of data and create their own graphical displays of data following appropriate graphing conventions; and (5) write up the results of statistical analyses in APA format.

This is a numeracy infused course.

### REQUIRED COURSE MATERIALS

1. **Textbook:** Nolan, S.A. & Heinzen, T.E. (2013). *Statistics for the Behavioral Sciences (3<sup>rd</sup> Ed)*. New York, NY: Worth Publishers. (ISBN-10: 1-4641-0922-2; ISBN-13: 978-1-4641-0922-5).
2. **Laptop with Excel and DyKnow:** Bring your laptop to every class meeting. Make sure that there is a working version of Microsoft Excel and DyKnow on your laptop. DyKnow is a Seton Hall supported free software. Instructions for downloading and logging into DyKnow are available on Blackboard/Information/DyKnow Instructions. At the beginning of each class, you will log into DyKnow and our class session. I will use DyKnow to deliver PowerPoint lectures to you. You can use DyKnow to follow along with the slides and take notes. DyKnow will also allow me to restrict your access to only applications necessary for use in the classroom at that time. **Please note that with DyKnow, I am able to monitor (i.e., see) your desktop at any time.**
3. **Basic functions calculator:** Please bring a basic functions calculator to each class, including exam days. The calculator may not have extensive memory that allows you to store formulas and other information (i.e., not a graphing calculator).

### **C- POLICY NOTE AND STATEMENT ON FINANCIAL AID FOR NON-F GRADES**

Psychology Majors must earn a final grade of a C- or higher in Introduction to Psychology, Elementary Psychological Statistics, Research Methods in Psychology, and Seminar in Psychology. Should you earn an F/D/D+, you will need to retake the course before taking the next course in the sequence. Federal financial aid can be used to improve a grade of D or higher only once for a given course. If you are retaking the course to replace a D or higher for the second time and receiving Federal financial aid, be sure to enroll in at least 12 additional credits to maintain full-time status.

### **GRADING**

Your course grade will be determined through the percentage of total points earned on 4 exams, 3 quizzes, and 3 assignments. Course grades will be based on the following scale:

|              |              |              |              |                 |
|--------------|--------------|--------------|--------------|-----------------|
| A: 93-100%   | B+: 87-89.9% | C+: 77-79.9% | D+: 67-69.9% | F: Less than 60 |
| A-: 90-92.9% | B: 83-86.9%  | C: 73-76.9%  | D: 60-66.9%  |                 |
|              | B-: 80-82.9% | C-: 70-72.9% |              |                 |

To calculate your own grade, refer to the lecture slides from the first day of class titled “How to calculate your course grade.”

1. **Four exams (65% of course grade).** Exams will assess your knowledge and application of the course material through conceptual and computation problems. There will be 4 exams in total: Exams 1-3 will be given during the term and the final exam will be given during the final exam period (<http://www.shu.edu/events/fall-exam-schedule.cfm>). All exams will be cumulative in the sense that knowledge in statistics is cumulative. For exams 1-3, the primary focus of each exam will be the material covered since the last exam. For the final exam, the materials will be cumulative from the beginning of the semester. All 4 exam grades will contribute to the course grade; **exam grades will not be dropped**. Refer to the course schedule for exam dates.
2. **Three quizzes (15% of course grade).** Quizzes will be posted on Blackboard to assess your understanding of the materials and to help you prepare for the exams. Quizzes are open book and open notes—feel free to use the textbook and lecture notes to complete the quizzes. However, quizzes are not open mouth and not open web: You may not take the quizzes with other students, discuss questions/answers with them, receive assistance from anyone else, or use the internet. By taking a quiz, you confirm that the answers you provide reflect your own work, and that you did not receive assistance nor did/will you provide assistance to others (this includes not divulging the nature of the quiz questions). These actions constitute cheating, which may result in receiving 0 points on the quiz and/or failing the course (see section on Cheating and Plagiarism).  
  
Four quizzes will be given but only 3 will count toward your course grade. If you take all 4 quizzes, then the lowest quiz grade will be dropped. However, if you miss a quiz, then you must take the remaining 3 to ensure that you have grades from 3 quizzes. There are no make-up quizzes and quizzes will not be accepted late. Refer to the course schedule for due dates.
3. **Three assignments (20% of course grade).** Assignments will be posted throughout the semester to help you absorb, apply, and practice the lecture materials. Like the quizzes, assignments are open book and open notes, but they are not open mouth and not open web: You may not complete assignments with other students, discuss questions/answers with them, receive assistance from anyone else, or use the internet (unless a question specifically requires you to do so). By completing and submitting an assignment, you confirm that the answers you provide reflect your own work, and that you did not receive assistance nor did/will you provide assistance to others. These actions constitute cheating, which may result in receiving 0 points on the assignment and/or failing the course (see section on Cheating and Plagiarism).

Four assignments will be posted but only 3 will count toward your course grade. If you submit all four assignments, then the lowest assignment grade will be dropped. However, if you miss an assignment, then you must complete the remaining 3 to make sure you have grades from 3 assignments. There are no make-up assignments and assignments will not be accepted late. Refer to the course schedule for due dates.

**All assignments and quizzes are due by 11 pm on the due date. No assignment or quiz will be accepted late.**

Everything must be submitted before 11 pm. One minute late is still late and will result in 0 points.

**EXTRA CREDIT POINTS**

Several times through the semester, I will give a short pop quiz during class. The pop quizzes serve two purposes: (1) To encourage you to keep up with your studies so that you can stay on track and not fall behind in class, and (2) to give you a sense of where you should be in terms of your understanding and knowledge of the materials. The pop quizzes will also allow me to get an idea of how students are doing in the class. Specifically, they will allow me to gauge whether there are topics with which students need additional help.

The points you earn from the pop quizzes can add up to a maximum of an additional 5% to your course grade. **There are no make-up pop quizzes.** If you are not in class on the day of a pop quiz, then you forfeit your opportunity to earn the extra credit points and receive 0 points for that quiz. Note, however, that receiving 0 points on a pop quiz will not penalize you since these points are in addition to the points earned through exams, assignments, and quizzes.

**TIPS FOR SUCCESS IN STATISTICS**

The material covered in this course is challenging and the workload is relatively heavy. For many students, statistics is one of the most time-consuming courses in the major. However, statistics is useful and helpful (and even fun) for many areas of study, and it is important to be able to fully understand and apply various statistical methods to various areas of psychology. Here are some tips for success in statistics.

1. **Practice.** Your level of success in this course depends on the amount of time and effort you devote to the material. Statistics, like many math courses, may appear to be understood during lecture but the execution is more difficult. A good rule of thumb for courses is to spend 2-3 hours *outside* class time for each credit hour. That means you should **expect to spend 8-12 hours a week on this class** on reading, solving practice problems, completing assignments or quizzes, and preparing for pop quizzes and exams.
2. **Read the book.** Review the assigned chapter before lecture, then read it more thoroughly after the lecture. Not all of the information in the chapter may be covered during lecture, but you are responsible for the material in the book for exams. When reading a chapter, take notes and work through the problems as they are introduced. Work through all of the Check Your Learning exercises in the middle of the chapters. Try to do the problems in the How It Works section on your own, referring to all the steps only when you get stuck.
3. **Attend class and participate.** Come to every class meeting. When in class, pay attention, take notes, think about the material, attempt and work through all in-class problems. Raise your hand and ask questions when you do not understand something. Answer questions I ask during class.
4. **Be an active learner.** In addition to what you do *in* class, what you do *outside* of class is also important. Prepare before each class. Review after each class. Try to complete the recommended homework problems without your notes. Take the Blackboard quizzes as if you're taking an exam. Plan your schedule so that you can have frequent study sessions throughout the semester. Form study groups with other students in the class. Check the due dates. Ask questions when you do not understand something. Come to office hours if you have questions about the materials, exams, quizzes, etc.

5. ***Stay on track.*** Since the material in this class is cumulative, it is very important to keep up and avoid falling behind. Information covered in the first week of class will be crucial to an understanding of material covered in the last week of class. If you fall behind, not only do you have to catch up, you also may have trouble understanding the current material because such an understanding depends on an understanding of the older material. It is imperative that you do not allow yourself to fall behind. Additionally, **do not be misled by the relative ease of the material that we will be covering in the first weeks to month of the semester.** The material gets exponentially more difficult as we progress through the semester. Plan accordingly.

### **TUTORING**

Sometimes, students find statistics to be challenging even when following the tips for success. In that case, you can also see a tutor. Psi Chi provides free tutoring for psychology courses. Email [psichitutorshu@gmail.com](mailto:psichitutorshu@gmail.com) with the name of the course for which you are requesting tutoring and general days/times you are available.

### **READ THIS SYLLABUS CAREFULLY**

This syllabus is your guide to the course. It has information regarding due dates, required materials, tips for success, class policy, and so on. The purpose of this syllabus is to help you through this course. In addition, I am here to help you through this course. I welcome all kinds of questions from students, especially those pertaining to course topics, research, the field of psychology, and career/graduate school information. You are welcome to ask questions before, during, and after class; during office hours; and through email.

However, many questions—especially those related to due dates, exams, and other logistics of the class—can be answered simply by reading this syllabus carefully. I expect you to have read and understood the information in this syllabus. I will not answer questions for which answers can be found in this syllabus. Here are some examples:

- *“Will \_\_\_\_\_ be on the exam?”* All topics are important. If they were not, then they would not be taught in class. If something shows up in class, then it can show up on an exam or quiz.
- *“Can I do an extra assignment to bring up my grade?” “Can you round up my C+ to a B- since I came to every class?”* I work very hard to be as fair as possible to all of my students. The exams, quizzes, and assignments are designed to provide fair opportunity for all students to earn points. Remember, grades must be earned; they are not given by me. I cannot give anyone preferential treatment that will give them an unfair advantage over the other students.
- *“I forgot that the quiz/assignment was due last week. Can I submit it late?”* Sorry. The deadlines have been posted from the first day of class. You also know that there are no make-up quizzes or assignments, and they will not be accepted late. However, because unforeseen circumstances may occur, I will drop the lowest quiz and assignment grade if you complete all of the posted quizzes and assignments (4 each).

### **CLASSROOM ETIQUETTE**

Your behavior can affect your peers' experience in class. Your actions can both enrich others' learning experiences (e.g., when you ask questions or participate in class discussions) and detract from it (e.g., when you use your laptop for inappropriate activities). Remember that other people in the classroom can hear your phone vibrate and see your laptop screen. They can also hear you talking, even if you are whispering.

I expect classroom courtesy from all students. At the start of the class, silence your cell phone and put it away. You know that if you can see it, you will be distracted by it. And when you are distracted by it, you will distract other people. Use your laptop only to follow the lecture slides and take notes. Do not hold personal conversations during class—it is distracting and disrespectful to everyone in class.

Note: When emailing me, make sure to put a relevant title in the subject line. Emails without subjects are automatically purged from the SHU system which means that I do not receive them.

**STATEMENT ON STUDENTS WITH DISABILITIES**

Students at Seton Hall University who have a physical, medical, learning or psychiatric disability, either temporary or permanent, may be eligible for reasonable accommodations at the University as per the Americans with Disabilities Act (ADA) and/or Section 504 of the Rehabilitation Act. In order to receive such accommodations, students must identify themselves at the Office of Disability Support Services (DSS), provide appropriate documentation and collaborate with the development of an accommodation plan. The phone number for DSS is (973) 313-6003. For further information, refer to the DSS website (<http://www.shu.edu/offices/disability-support-services/index.cfm>).

**ACADEMIC DISHONESTY: CHEATING AND PLAGIARISM**

**I will not tolerate cheating or plagiarism in any form. Neither will the Psychology department or university.**

Examples of cheating and plagiarism include, but are not limited to: looking at another student's exam, allowing another student to look at and/or copy from your exam, asking others for answers during exams via any kind of media, and copying words or phrases from another source without including proper citations. **Students who cheat or plagiarize will receive 0 points on that assignment. Additionally, I will alert your department chair and Dean's office, which may result in failing the course, suspension, and/or expulsion from the university.** See below for the Psychology department's Academic Integrity Policy (<http://www.shu.edu/academics/artsci/psychology/aip.cfm>).

**I. Statement** - The Department of Psychology will not tolerate any form of academic dishonesty. Infractions will be appropriately penalized; students should understand that suspension or expulsion from the University is a possible result.

**II. Definitions** - "Academic Dishonesty" shall be understood to encompass at least the following:

*Cheating* - whether on tests or on other course assignments, whether by the giving, receiving or taking of information. Additionally, turning in the same paper for two different assignments is cheating.

*Plagiarism* - stealing and/or passing off as one's own the ideas or words of another; using without crediting the source. It includes: (1) copying of text/research/assignments; (2) using someone else's papers/research/assignments without permission and citation; (3) representing as one's own work what is really the work of another person. This includes downloading from WEB sources. Students are responsible for understanding proper crediting procedures: unintentional plagiarism is still academic dishonesty.

**III. Penalties:**

1. A student determined to be cheating on any test or who plagiarizes on a course assignment will be appropriately penalized at the discretion of the instructor. This may include receiving a zero on the assignment or "F" for the course.
2. Notice that a student has cheated or plagiarized will be sent to the department of the student's major. All cases of plagiarism resulting in an "F" for the course will be reported to the Dean. This can result in a recommendation to the Dean for suspension or expulsion from the university.
3. If the chair of the Psychology department finds that a student who has declared a major or minor in Psychology or is a graduate student in Psychology has been found to have committed acts of academic dishonesty in more than one Psychology course, the student is expelled from the Psychology program after due notice of the discovery. After one year, the department may rescind the expulsion upon the application of the student provided the student evinces a genuine, informed, and vigorous commitment to academic integrity to the satisfaction of the department's Academic Integrity Committee.
4. All department or instructor actions resulting from suspected violations of this policy will be taken in accordance with the students' due process rights. Nothing in this policy statement shall be construed to

preclude the department from taking appropriate disciplinary action against forms of academic dishonesty not stipulated here.

### **LEARNING GOALS**

The American Psychological Association (APA) has identified 5 learning goals of the undergraduate major. This course will primarily address *Goal 2. Scientific Inquiry and Critical Thinking* in addition to many of the other goals. The goals that are most relevant to this course are checked off below.

#### **Goal 1. Knowledge Base of Psychology**

- 1.1 Describe key concepts, principles, and overarching themes in psychology.
- 1.2 Develop a working knowledge of psychology's content domains.
- 1.3 Describe applications of psychology.

#### **Goal 2. Scientific Inquiry and Critical Thinking**

- 2.1 Use scientific reasoning to interpret psychological phenomena.
- 2.2 Demonstrate psychology information literacy.
- 2.3 Engage in innovative and integrative thinking and problem solving.
- 2.4 Interpret, design, and conduct basic psychological research.
- 2.5 Incorporate sociocultural factors in scientific inquiry.

#### **Goal 3. Ethical and Social Responsibility in a Diverse World**

- 3.1 Apply ethical standards to evaluate psychological science and practice.
- 3.2 Build and enhance interpersonal relationships.
- 3.3 Adopt values that build community at local, national, and global levels.

#### **Goal 4. Communication**

- 4.1 Demonstrate effective writing for different purposes.
- 4.2 Exhibit effective presentation skills for different purposes.
- 4.3 Interact effectively with others.

#### **Goal 5. Professional Development**

- 5.1 Apply psychological content and skills to career goals.
- 5.2 Exhibit self-efficacy and self-regulation.
- 5.3 Refine project-management skills.
- 5.4 Enhance teamwork capacity.
- 5.5 Develop meaningful professional direction for life after graduation.

**COURSE SCHEDULE (subject to change at instructor's discretion)**

| <b>Sunday (due date)</b> | <b>Monday</b>  | <b>Wednesday</b>   |
|--------------------------|--|--|
|                          | 08/31/15<br>Topic 1: Overview, introduction<br>Chapter: 1                    | 09/02/15<br>Topic 1: Overview, introduction<br>Chapter: 1 and re-read syllabus                       |
|                          | 09/07/15<br>No class (Labor Day)   | 09/09/15<br>Topic 2: Frequency distribution<br>Chapter: 2  |
|                          | 09/14/15<br>Topic 2: Frequency distribution<br>Chapter: 2                    | 09/16/15 (no class 12-1; Mass of Holy Spirit)<br>Topic 3: Visual displays of data<br>Chapter: 3      |
| 09/20/15<br>Assignment 1 | 09/21/15<br>Topic 4: Central tendency and variability<br>Chapter: 4          | 09/23/15<br>Topic 5: Sampling and probability<br>Chapter: 5  |
| 09/27/15<br>Quiz 1       | 09/28/15<br>Topic 5: Sampling and probability<br>Chapter: 5                  | <b>09/30/15</b><br><b>EXAM 1 (topics 1-5)</b>  |
|                          | 10/05/15<br>Topic 6: Normal curve and z scores<br>Chapter: 6                 | 10/07/15<br>Topic 6: Normal curve and z scores<br>Chapter: 6   |
|                          | 10/12/15<br>No class (Fall Break)  | 10/14/15<br>Topic 7: Hypothesis testing<br>Chapter: 7  |
| 10/18/15<br>Assignment 2 | 10/19/15<br>Topic 7: Hypothesis testing<br>Chapter: 7                        | 10/21/15<br>Topic 8: CI, effect size, and power<br>Chapter: 8  |
| 10/25/15<br>Quiz 2       | 10/26/15<br>Topic 8: CI, effect size, and power<br>Chapter: 8                | <b>10/28/15</b><br><b>EXAM 2 (topics 6-8)</b>  |
|                          | 11/02/15<br>Topic 9: <i>t</i> -tests (intro and single-sample)<br>Chapter: 9 | 11/04/15<br>Topic 9: <i>t</i> -tests (intro and single-sample)<br>Chapter: 9                         |
|                          | 11/09/15<br>Topic 9: <i>t</i> -tests (paired-sample)<br>Chapter: 10          | 11/11/15<br>Topic 9: <i>t</i> -tests (independent-samples)<br>Chapter: 11                            |
| 11/15/16<br>Assignment 3 | 11/16/15<br>Topic 10: One-way ANOVA<br>Chapter: 12                           | 11/18/15<br>Topic 10: One-way ANOVA<br>Chapter: 12   |
| 11/22/15<br>Quiz 3       | <b>11/23/15</b><br><b>EXAM 3 (topics 9-10)</b>                               | 11/25/15<br>No class (Thanksgiving Recess)   |
|                          | 11/30/15<br>Topic 11: Two-way ANOVA<br>Chapter: 14                           | 12/02/15<br>Topic 11: Two-way ANOVA<br>Chapter: 14   |
| 12/06/15<br>Assignment 4 | 12/07/15<br>Topic 12: Correlation and regression<br>Chapter: 15 and 16       | 12/09/15<br>Topic 12: Correlation and regression<br>Chapter: 15 and 16                               |
| 12/13/15<br>Quiz 4       | 12/14/15<br>Review for cumulative final exam                                 | <b>AA final exam: 12/16/15, 2:30 pm-4:30 pm</b><br><b>BB final exam: 12/22/15, 10:10 am-12:10 pm</b> |

