

Instructor: Eric Allard, Volen 304

Office Hours: Tuesday and Thursday: 2:00pm-3:30pm, or by appt. (X63240 or e-mail [esa@brandeis.edu])

Class: Monday, Tuesday, and Thursday: 11:15 am – 1:45 pm
Room (TBA)

Goals of course:

- To understand why and when you need statistics
- To know enough to evaluate appropriateness of statistical analysis in Results sections of research
- Have the ability to identify and select correct statistics for your own data (in Research Methods and beyond)

Grading:

This course is structured so that all students who try can guarantee attaining a grade of C- or better (the minimum grade you need to be a Psychology major). To ensure this, I use a combined mastery-honors approach. Specifically:

- To earn a grade of C- requires that you master the basic knowledge of the meaning of statistics, understand what statistic to use for a particular research problem, and be able to conduct appropriate statistical computations. This aspect of the course is mastery based. One component of this C- protection requires “passing” five in-class quizzes during the course of the semester. If you fail to reach mastery on a quiz for a module (at least 80% correct), you may take a second quiz for that module. Before taking the second quiz for a module, you should go over the first quiz and make sure that you understand what you did not know. If you do not achieve mastery on the second quiz in a module, you must consult me and receive a set of problems directed specifically at what you do not understand. Upon the correct completion of these problems, you will be considered to have reached mastery on that module. You will be guaranteed at least a C- grade, if you do all of the following—
 1. reach mastery on all five quizzes,
 2. earn passing grades (at least D-) on the other required tests, labs, and exercises,
 3. attend class and do your daily homework.
- The only problem with this system is that if you get behind it is virtually impossible to catch up; thus, I make three absolute deadlines:
 1. You must make up quizzes originally given before the midterm by the time of the midterm (July 20th).
 2. You must retake quizzes originally given after the midterm within **one week** from the scheduled quiz, except Quiz 5 which must be retaken before the Final Exam (August 6th).
 3. All problem sets done for those who have failed the second taking of a quiz must be handed in to me by the midterm—if the original quiz was before the midterm. Problem sets post-midterm must be turned in prior to the Final Exam.
- You will note that to retain your guaranteed C- status, you **must** do your daily homework assignments. These are collected at the **beginning** of class on the day they are due. They will **not** be accepted after class. Students have requested the answers for the homework in the past; consequently, I will hand out the answers to the homework when I hand back the homework from the prior class. During the entire “semester” you are permitted two unexcused or excused failures to complete or hand in a homework assignment on time, and still maintain your C- protection. If you know you are going to miss a class, it is permissible to have someone hand your homework in for you, before the class. A bonus will be given for all who properly complete all of the homework assignments on time (this means a reasonable attempt at working out every problem, not necessarily achieving all correct answers). After two failures to hand in homework, not only will you lose C- protection, but each additional failure to hand in homework or be absent on a quiz day will further constitute an additional penalty on your final grade.
- To earn an A or B, you must exhibit (a) mastery of the practical use of statistics, as indicated above and (b) a conceptual understanding of the quantitative concepts underlying statistical reasoning. Tests, labs, and some

exercises will be graded and calculated toward your grade. There will be an in-class midterm and final. Note that the number of repetitions of quizzes is **NOT** a factor in determining your grade. Also note that completing all the requirements will **NOT** guarantee an A or B+ (only your C- protection). Your grade will be decided according to your performance. The final grade will be determined roughly by the following weighting: Final = 30%, Midterm = 30%, Labs = 25%, Exercises = 10%, Activity, quizzes = 5%.

Required Materials:

- Gravetter, F. J., & Wallnau, L. B. (2010). *Statistics for the behavioral sciences (8th ed.)*. Belmont: Wadsworth.
- calculator (\$10 variety--adds, subtracts, multiplies, divides)

Requirements of the Course:

1. **Class attendance.** We do lots of small-group work in this class. It can **NOT** be made up. I will take attendance by checking homework assignments. Thus, it is better to hand in incomplete homework than no homework, even though that does not count for you maintaining your C-, because at least your attendance will be noted. Because unforeseen emergencies can prevent your attendance at a class through no fault of your own, two absences during the semester are allowed with no reduction.
2. **Chapter homework assignments.** For every chapter there will be a short assignment to be turned in. These will **NOT** be accepted late. Notice that there is a time-out rule, described at the end of the syllabus. There will be additional homework to do on every class worksheet, which you generally will not have to turn in, but which are the basis for the quizzes and provide additional practice. Answers to the chapter homework assignments will be given out when the homework is handed back, which will typically be during the next class after the homework is due.
3. **SPSS exercises.** On the dates indicated below in the schedule, there will be additional written homework assignments. Some will include computer work, so be sure to plan ahead to leave time to get to a computer. These will be graded. The grades on these exercises will be penalized incrementally as a function of the number of days late.
4. **Computer labs.** There will be three laboratory assignments designed to put it all together--what you are learning about statistics, what you are learning about using the computer to calculate your statistics, and what you are learning about using these skills to do research. These lab assignments will be graded.
5. **Mastery quizzes.** You will take a series of quizzes to demonstrate that you have attained basic mastery. This course material is cumulative so you need to achieve mastery on each quiz before you proceed to the next quiz. This means, of course, that if you need to retake a quiz, you must not procrastinate or you will quickly fall behind. A student who is more than one quiz behind will be required to meet with me to negotiate a solution. Note the absolute deadlines in quizzes that are detailed in the grading description section above. The minimal criteria for C- protection are not meant to provide a strategy for how to proceed in the course. Rather, they are the extreme deadlines required for maintaining the C- protection.
6. **Exams.** The midterm and final are required exams. They will both serve to demonstrate that you have retained the mastery that you have demonstrated on the quizzes and to provide a basis for determining the level of your conceptual understanding. They both will be graded and will count substantially toward determining A, B, or C level grades for those who maintain C- protection, or A to F level for those who do not maintain their C- protection. Note that if you risk not maintaining the protection grade and fail the exams, I will have no recourse, but to fail you on the course. If you decide not to maintain your protection because you are doing well on the exams, labs, and exercises, be sure to keep up the homework; accruing penalties beyond the two grace homework misses could seriously jeopardize your final grade.

Note:

If you are a student with a documented disability on record at Brandeis University and wish to have reasonable accommodation made for you in this class, please see me immediately.

Also, you are expected to be honest in all of your academic work. The University policy on academic honesty is distributed annually as section 5 of the Rights and Responsibilities Handbook. Instances of alleged dishonesty will be forwarded to the Office of Campus Life for possible referral to the Student Judicial System. Potential sanctions include failure in the course and suspension from the University. If you have any questions about my expectations, please ask.

Session Schedule

Due Date	Topic/Reading done before class	Assignment Due (bold = hand in; bold italics = in class quiz or exam)	Homework Due (bold = handed in before class)
July 6	Introduction/Chapter 1 (Measurement Scales)		
July 7	Chapter 2 (Frequency Distribution); Chapter 3 (Central Tendency)		Chapter 1 & 2 Homework Problems
July 9	Chapter 4 (Variability)	<i>Quiz #1: Chapters 1-3</i>	Chapter 3 Homework Problems
July 13	Chapter 5 (Normal Curve) Chapter 6 (Probability)	SPSS: Exercise #1	Chapter 4 & 5 Homework Problems
July 14	Chapter 7 (Probability and Samples)	<i>Quiz #2: Chapters 4-6</i>	Chapter 6 & 7 Homework Problems
July 16	Chapter 8.1 – 8.5 (Intro to Hypothesis Testing)	SPSS Exercise #2	Chapter 8a Homework Problems
July 20		<i>MIDTERM EXAM</i>	
July 21	Chapter 8.6-8.7 (Effect Size and Power) Chapter 9 (Intro to t-tests)		Chapter 8b & 9 Homework Problems
July 23	Chapter 10 (Indp. Samples t-tests) Chapter 11 (Related Samples t-tests)	Lab Report #1: Descriptive Statistics	
July 27	Chapter 13 (Intro to ANOVA)	<i>Quiz #3: Chapters 8-11</i> SPSS Exercise #3	Chapter 13 Homework Problems
July 28	Chapter 14 (Repeated Measures ANOVA) Chapter 15 (2 Factor ANOVA)		Chapter 14 & 15 Homework Problems
July 30		Lab Report #2 SPSS Exercise #4 <i>Quiz #4: Chapters 13-14</i>	
August 3	Chapter 16 (Correlation) Chapter 17 (Regression)		Chapter 16 & 17 Homework Problems
August 4	Chapter 18 (Chi-Square)	<i>Quiz #5: Chapters 15-17</i> SPSS Exercise #5	Chapter 18 Homework Problems
August 6		Lab Report #3 <i>FINAL EXAM</i>	

* The problems associated with chapter readings are to be turned in the day the chapter is due. Spend no more than **20 minutes** on any problem. Most should take only a few minutes. If you reach the 20-minute limit, simply write **timed-out** on your homework. You will **not** be penalized if you show all your work and indicate where and why you were stuck.