Psychology 302 – Statistical Methods in Psychology

Summer 2007 – CRN 41589
Lecture: Monday through Thursday 10:00-10:50, ESL 112
Friday Labs in 180 Straub: 1) 9:00-9:50; 2) 10:00-10:50

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Hours lab room (Straub 180) is open: 8am-5pm Mon-Thu, 8am-9am & 1pm-5pm Friday, closed weekends.

Blackboard site: Please check Blackboard (http://blackboard.uoregon.edu/) regularly (several times a week) for announcements, discussion, and materials such as lecture notes.

OVERVIEW OF COURSE STRUCTURE

Course Description: This course will introduce you to descriptive and inferential statistics, teach you how to calculate statistics and analyze data using a computer statistics package, and improve your ability to understand and evaluate the statistical information reported in primary research articles.

Course Design: The course promotes active learning — through discussion, solving problems, writing responses, and computer exercises. The instructor and TA are guides, cheerleaders, and coaches. The course encourages teamwork among students, instructor, and TA. *Although tests and quizzes are to be completed individually, students are encouraged to work together on homework*. One potential problem of team learning is that some students may rely too much on others and not master the material. So to pass the course ****you must demonstrate your competency as a statistician by passing the final exam***.**

Responsibilities: If you complete this course, you will earn 4 credits toward your degree. It is important to reiterate that the requirements for this course are equivalent to those in the same course over 10 weeks during the regular academic year. By continuing in this course, you are accepting that the workload for this class is 1.25 times that of a 4-credit class during the regular academic year. According to University principles governing credit and contact hours, each credit is equivalent to 30 hours of work. Your 4 credits for this course are equivalent to 120 hours of work over 8 weeks, which is 15 hours per week. You will spend 5 hours in class and lab each week and should expect to spend up to 10 hours engaged in reading, studying, writing papers and/or completing homework assignments outside of class each week. You are strongly encouraged to read the department's guidelines concerning practices that will augment your learning experience in this class:
http://psychweb.uoregon.edu/guidelines/students.htm

COURSE REQUIREMENTS

Overview: You will be graded on responses, homework, quizzes, and exams (midterm and final). ***Students must pass the final to pass the course***. Participation is also worth some points.

1. Participation. Participation includes discussion and group activities. Participation points are based on lecture participation and TA reports about lab participation.

2. Responses. Each Monday ***in class***, you will turn in a ****typed**** response to the assigned reading. Responses must (1) identify the three most important points in the week's reading (2) state one specific question or confusion. Refer to specific page numbers. Example of a GOOD specific question: "On page 330, it says that the Scheffé test is extremely cautious. Is it better than the Tukey test on page 329? If not, how do we choose?" Example of a VAGUE non-question: "I don't understand chapter 13." Length: *Under 1 page*. Late responses earn half credit.

3. Homework. Homework assignments are due ***in class on Tuesday*** (subject to change). Some problems will be completed "by hand" (includes calculators); some using SPSS; some with both methods. **Turn homework in on time! Late homework**, which is any assignment turned in after Tuesday's class and before lab on Friday, earns *half* credit. *No* credit if turned in after lab on Friday ***unless your TA approves this in advance.*** The TA grades and is in charge of homework. Homeworks will generally—but perhaps not always—be returned in lab on Friday.

Problems are at the end of each chapter (you will only be required to do a subset of those questions, which will be posted on blackboard weekly). The book has answers to odd-numbered problems in the back. You will have a chance in labs to work on computer homework. To earn full credit, *show and explain all work* and **annotate** printouts. Circle the most important numbers and explain (write or type directly and legibly on the output) what they mean. You must demonstrate that you are able to read and understand what you have produced.

4. Quizzes are first thing on Thursdays. Be on time!! Quizzes will cover all material since the previous quiz (most weeks, this will mean the material presented after the quiz the previous Thursday, plus the material presented Monday through Wednesday). Quizzes are closed book, and are completed individually. Calculators are okay.

5. Exams. There will be a midterm and final. The **final** is on **Friday, August 17, 8:00-10:00, 112 ESL** (our regular room). Exams are *open book, open notes, calculator, etc.*, and are completed individually. For midterm and final, fly using your own wings and show us what you've learned. All final exams that receive a failing grade (< 60 points) will be double-checked by a second grader. ****YOU MUST PASS THE FINAL TO PASS THE COURSE!!****

6. Attendance: This excerpt regarding absences is taken from the department's policy on student responsibilities:

"Students anticipating absences during a course must take the initiative in discussing arrangements with the instructor in the first week of class. It is the students' responsibility to compare their calendar with the class syllabus, and alert the instructor to all anticipated conflicts. However, special arrangements are not guaranteed and are to be made at the discretion of the instructor. ***Absences due to work conflicts, child-care, parking, flight schedules and prices, transportation issues, alarm clock malfunction, and studying are not typically recognized as valid reasons to miss class***. […]

The department recognizes that not all absences can be anticipated. In the case of last-minute emergencies of any type, it is not unreasonable for the instructor to request documentation. Whether or not the absence is excused, if you must miss a day of class, you are expected to get all missed assignments, notes, and handouts from another student before you return to class to be as prepared for class as students who were present. To facilitate this process, it is advisable that-at the beginning of the term-you share contact information with a small group of students."

7. Books & Calculator. The required text is Gravetter & Wallnau, *Essentials of Statistics for the Behavioral Sciences*, 5th edition. Read assigned chapters **before** class and do Learning Checks as you encounter them. **Reread** if you have trouble with the Learning Check. The second time, you will understand more. You will also need a hand-held **calculator** (solar ones are environmentally friendly) that can do single variable statistics. No need for graphic calculators. **Bring calculator & main text to class.**

SPECIAL NEEDS

Learning disabilities & athletes. If you have a documented learning disability and need adjustments, or will miss class due to travel with a UO sports team, contact me ASAP. With advance planning, adjustments are relatively easy. Last minute changes are problematic.

ESL: Students whose **first language is not English** may make arrangements to take midterm and final exams at the Testing Center so they can have extra time.

"Repeaters": If you are repeating the class, please see me to discuss strategies for success.

GRADING

Responses to readings:	35 pts (7 responses worth 5 pts each)
Homework sets:	172 pts (6 sets, point values vary)
Quizzes:	48 pts (3 quizzes worth 16 pts each)
Midterm:	50 pts
Final exam:	100 pts
Participation:	20 pts
Total	**425 pts**

Course grades based on percentage of points earned					
	Percent	Points		Percent	Points
A	93-100	396-425	C-	70-72.9	298-310
A-	90-92.9	383-395	D+	67-69.9	285-297
B+	87-89.9	370-382	D	63-66.9	268-284
B	83-86.9	353-369	D-	60-62.9	255-267
B-	80-82.9	340-368	If taking Pass/Fail		
C+	77-79.9	328-339	N	< 70	297 or below
C	73-76.9	311-327	P	70	at least 298

* **Extra credit** (to improve your final grade by up to 3%) can be gained through participation in Psychology Department research (via the Psychology Department's human subjects pool). Each credit that you earn and assign to PSY 302 will result in your final grade being raised by 1% (i.e., 4.25 points per study). Credits must be assigned to PSY 302 for them to count towards extra credit. Studies must be completed by the day of the final.

*** Important Notes:** To pass the course, ***you must pass the final***. If you demonstrate competence by passing the final (earning at least 60 percent) you will earn the grade determined by the listed percentages. If you do especially well, and are close to a cutoff, you may be eligible for "mastery" points that push your course grade over the cutoff. ***Escape hatch:*** Students who fail the final but whose average grade on homework & quizzes is C- or above (at least 70% correct) may take an incomplete in the course and retake the final later. *Note: grades are not curved!*

COLLABORATION

Collaborative Learning:
Discussing homework with other students and the TA is encouraged, as are homework and study groups for quizzes and exams. Talking over the problems and reworking them when you discover that others got different answers promotes deeper understanding of concepts. However, each student must submit a separate homework which was *written independently*, and you must show your work (no photocopies or word-for-word copying). More explicitly, you may work together to solve problems and check your answers on homeworks with each other, but preparing those answers for your homework and the actual writing of ***any*** verbal answers need to be done independently.

Individual Work (when Collaboration = Cheating*)*:
Your work on the **Quizzes,** the **Midterm Exam,** and the **Final Exam** must be your own. Copying the work of others on these elements is cheating, and will earn you an F or N for the course. (The University may impose additional penalties in accordance with the student conduct code.) On the two exams, you may consult any materials that you have brought to the room, but you may not consult with others. Individual quizzes (closed book, closed notes), rely on your own memory and calculator only.

TOP FIVE PITFALLS

1. Passive listening and reading

Write, draw, figure. Think with a pencil to learn. Turn the concepts into something you do. To succeed, you must be able to explain and execute.

2. Spectator overconfidence

Watching someone go through the steps is a starting point only. You have to get in the pool to learn how to swim.

3. Beginner's luck

Doing it right once doesn't mean you can repeat the trick. Get it wrong to understand how the process works. Mistakes help you learn.

4. Trying to cram

You can cram content, but skills don't compress. Don't fall behind; it's too hard to catch up.

5. Giving up because you get stuck

Everyone gets stuck. Try a new tack. ***Ask for help.*** Play around. Math is all about getting stuck and unstuck.

THREE WAYS TO DO WELL

1. Keep up and keep trying

Read assigned chapters early and often, come to lecture, start on homework immediately so you will finish on time. If you keep up and keep trying, the concepts will eventually sink in. Turn your homework in on time. Slog through those chapters even if you only understand half of what you read. The fog will clear if you just persist. Don't give up!

2. Work hard on understanding material in the first half of the course

If you have a pretty good feel for the concepts in the first half, the second half will deepen your understanding. If you don't grasp the concepts in the first half, the second half will make no sense. Seek help *early* when you are feeling lost.

3. Stay in touch, and speak up

Come to office hours. You have a dedicated instructor and TA, and we want to help! Ask questions--in class, in lab, in your responses, and in office hours. Forming a clear question helps you discover what you do and do not understand, which is vital to mastering this subject.

COURSE SCHEDULE

**Schedule and homework due date subject to change*

****Put your name and lab number (1 or 2) on all homework.****

Week One			
Mon, Jun 25:	*Introduction to Statistics*	Ch 1	
Tue, Jun 26:	*Variables & Measurement*	Ch 1	
Wed, Jun 27:	*Distributions & Variability*	Ch 2, 3, & 4	
Thu, Jun 28:	*Z-scores*	Ch 5	**Response 1, Ch 4-5*
Week Two	(Tue, Jul 3: **Hwk #1 due in class)**.		
Mon, Jul 2:	*Probability & Normal Curve*	Ch 6	**Response 2, Ch 6-7*
Tue, Jul 3:	*Sample Means & CLT*	Ch 7	
Wed, Jul 4:	*Independence Day – No class!!!*		
Thu, Jul 5:	*Hypothesis Testing*	Ch 8	**QUIZ 1:** Ch 1-7
Week Three	(Tue, Jul 10: **Hwk #2 due in class**)		
Mon, Jul 9:	*z-test*	Ch 8	**Response 3, Ch 8-9*
Tue, Jul 10:	*One-Sample t-test*	Ch 9	
Wed, Jul 11:	*Independent Samples t-test*	Ch 10	
Thu, Jul 12:	*Related Samples t-test*	Ch 11	**QUIZ 2:** Ch 8-10
Week Four	(Tue, Jul 17: **Hwk #3 due in class**)		
Mon, Jul 16:	M*ore t-issues*		**Response 4, Ch 10-11*
Tue, Jul 17:	*Which Test?*		
Wed, Jul 18:	Review of Chapters 7-11		
Thu, Jul 19:	**MIDTERM** -- Open book, open notes		
Week Five			
Mon, Jul 23:	*ANOVA*	Ch 13	**Response 5, Ch 13-14*
Tue, Jul 24:	*ANOVA & Post-Hoc Tests*	Ch 13	
Wed, Jul 25:	*Factorial ANOVA*	Ch 14	
Thu, Jul 26:	*Factorial ANOVA*	Ch 14	
Week Six	(Tue, Jul 31: **Hwk #4 due in class**)		
Mon, Jul 30:	*Repeated Measures ANOVA*	Ch 14	**Response 6, Ch 15*
Tue, Jul 31:	*Correlation*	Ch 15	
Wed, Aug 1:	*Regression*	Ch 15	
Thu, Aug 2:	*more Correlation & Regression*	Ch 15	**QUIZ 3:** Ch 13-15
Week Seven	(Tue, Aug 7: **Hwk #5 due in class**)		
Mon, Aug 6:	*Chi-Square, GOF & DFC*	Ch 16	**Response 7, Ch 16*
Tue, Aug 7:	*Chi-Square, Independence*	Ch 16	
Wed, Aug 8:	*Which Test?*		
Thu, Aug 9:	*Which Test?*		
Week Eight	(Tue, Aug 14: **Hwk #6 due in class**)		
Mon, Aug 13:	*Review*		**No response due*
Tue, Aug 14:	*Review & Evaluations*		
Wed, Aug 15:	*TBA/Overflow*		
Fri, Aug 17	***FINAL EXAM from 8:00—10:00;*** *Bring CALCULATOR, BOOK, NOTES*		