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PSYX 222.01: Psychological Statistics

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PSYX 222: Psychological Statistics (Fall, 2013)
M/W/F 2:10pm - 3:00pm, CHEM 123

Course description: Statistical analysis is an important part of all scientific research. The research of psychological phenomena is no exception. This course is designed to introduce you to the concepts and computational steps behind the most widely used statistical techniques. By the end of the semester, you should understand when and why to use different statistics, as well as be able to interpret them. Although mathematical computation will be used to solve statistical problems, this is NOT a math course. Understanding the concepts underlying the use of different statistics will play a larger role in final grades than will your math skills.

Instructor: Yoonhee Jang, yunhee.jang@umontana.edu (the **BEST** way to contact)
Office/office hours: Skaggs Building (SB) 205, Th/F 3:15–4:15pm or by appointment

Teaching Assistant (TA): Benjamin R. Eisenreich, benjamin.eisenreich@umontana.edu
Office/office hours: SB 368, Tu/W 12:00–2:00pm or by appointment

Labs: SB 246, Th (1) 10:10–11:00am; (2) 11:10am–12:00pm; (3) 3:10–4:00pm; (4) 4:10–5:00pm

Textbook: Gravetter, F. J., & Wallnau, L. B. (2011). *Essentials of Statistics for the Behavioral Science* (7th Ed.). Thomson/Wadsworth. ISBN 0-495-81220-X; available at the bookstore

It is strongly encouraged that students purchase and use a calculator for this course. Calculators may be used on all exams. Even if you use a calculator, however, you will still be required to show all the computational steps involved. Make sure you should bring your own calculator if you would like. The instructor/TA will NOT supply or lend one to you. Anything other than a calculator (e.g., cell phones, laptop computers, etc.) will NOT be allowed during the exams.

Accommodation of students with disabilities: Students with disabilities will receive reasonable modifications in this course. Your responsibilities are to request them from me with sufficient advance notice, and to be prepared to provide verification of disability and its impact from Disability Services for Students. Please speak with me after class or during my office hours to discuss the details. For more information, visit the Disability Services for Students website at <http://www.umt.edu/disability>.

Where to find class materials: <http://moodle.umt.edu>

What you can expect from me:

1. be prepared to teach the appropriate material in a manner that is organized and clear.
2. attempt to answer any questions you have.
3. prepare tests that are a fair evaluation of what you are expected to know.

What I expect from you:

1. be respectful of everybody in the classroom. Do NOT engage in behaviors that will disrupt class, interfere with the learning of other students, or distract me from teaching (e.g., talking, coming late or leaving early **consistently**, having cell phones on, etc.). A failure to meet this expectation will result in you being dismissed from the class.
2. ask questions whenever needed. Simply raise your hand if you have something to share. You are welcome to stop by my office at the office hours bringing any questions. Please speak with me privately if you are being disturbed or encounter unanticipated difficulties in class.
3. comply with the Academic integrity policy and honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://life.umt.edu/vpsa/student_conduct.php.
e.g., IV-A. Academic Misconduct (refer to pages 6-7)
 - 2. Misconduct during an examination or academic exercise:** Copying from another student's paper, consulting unauthorized material, giving information to another student or collaborating with one or more students without authorization, or otherwise failing to abide by the University or instructor's rules governing the examination or academic exercise without the instructor's permission.
 - 3. Unauthorized possession of examination or other course materials:** Acquiring or possessing an examination or other course materials without authorization by the instructor.
4. do not apologize for missing classes. Just be responsible for the consequences. You are expected to collect missing information from your classmates. I will not check your attendance, but attending every class meeting is very important not only for you not to lower your grade but also for you to obtain knowledge on course materials.

Grading: Grades will be rounded to the nearest whole %.

e.g., if raw score=89.4xxx%, then grade=B; if raw score=89.5xxx%, then grade=A.

(fill in the blank) if your score is 89.49%, then your grade is _____, and if 89.50%, then _____

90%=<	A	80-89%	B	70-79%	C
60-69%	D	=<59%	F		

Make sure that I am not giving you a grade: You are earning YOUR grade.

Final grades will be based on the following (the total % is 110, which is greater than 100!);

Exam 1: 10%, Exam 2: 15%, Exam 3: 15%, Exam 4: 15%, Exam 5: 15%, and

Final exam: 40%

NO make-ups will be given. The **ONLY** exception is for absences due to university-sponsored events (i.e., choir, band, sports, etc.): you **MUST** have an official letter/document in order to reschedule, **AND** you **MUST** reschedule the exam well IN ADVANCE (otherwise, **NO make-ups!**).

The final exam will be comprehensive across all materials covered in the course. If you miss up to 4 of 5 exams (excluding the final), then the relevant weight will be transferred to the final exam. However, if you miss all the 5 exams, there will be NO weight transference, so the weight for your final exam remains the same, 40% (which results in a fail regardless of whether you have taken the final).

e.g., if you missed only Exam 3 (15%), then the weight for your final exam would be 55% (= 40 + 15); if you missed two exams of Exam 1 and Exam 2 (10% and 15%, respectively), then the weight for your final exam would be 65% (= 40 + 10 + 15).

The secret for success in this course is to keep up with the material. Do not let yourself fall behind. Set a regular schedule for study, and be sure that your questions are answered in class or lab. After each lecture, work on the end-of-chapter problems on your own. The lab session will also help you do so. Even though the problems are not required, they provide a great opportunity for you to succeed. Further refer to the preface, xvi-xviii, of the textbook.

Learning outcomes:

Ch. 1: Know key statistical, measurement, and research terms

Ch. 2: Understand frequency distribution and data presented in a table or graph

Ch. 3: Understand the measures of central tendency

Ch. 4: Understand the measures of variability

Ch. 5: Understand z-scores

Ch. 6: Understand probability

Ch. 7: Understand distribution of sampling means

Ch. 8: Understand logic of hypothesis testing

Ch. 9: Know t statistic and perform t test

Ch. 10: Understand and perform independent-measures t test

- Ch. 11: Understand and perform repeated-measures t test
- Ch. 12: Understand and compute point estimates using t statistic
- Ch. 13: Understand and perform analysis of variance (ANOVA)
- Ch. 14: Understand and perform repeated-measures ANOVA and 2-way ANOVA
- Ch. 15: Understand and compute Pearson correlation coefficient and regression equation
- Ch. 16: Understand and perform chi-square test (time permitting)

By September 16 (M), you can withdraw from this course on cyberbear.

Schedule of classes: subject to changes by instructor! (NO class on M; 11/25)

Date	Chapter	Lab	
M; 8/26	Psychological Statistics: Let's get the ball rolling!		
W/F; 8/28, 30	Ch.1	Th; 8/29	Math review
W/F; 9/4, 6	Ch.2	Th; 9/5	Problems 1, 2
M/W; 9/9, 11	Ch.3	Th; 9/12	Problems 2, 3
F/M; 9/13, 16	Ch.4	Th; 9/19	Problems 4
W; 9/18	Exam 1 (Ch.1-4)		
F/M; 9/20, 23	Ch.5		
W/F; 9/25, 9/27	Ch.6	Th; 9/26	Problems 5, 6
M/W; 9/30, 10/2	Ch.7	Th; 10/3	Problems 6, 7
F/M/W; 10/4, 7, 9	Ch.8	Th; 10/10	Problems 8
F; 10/11	Exam 2 (Ch.5-8)		
M/W; 10/14, 16	Ch.9		
F/M; 10/18, 21	Ch.10	Th; 10/17	Problems 9
W/F; 10/23, 25	Ch.11	Th; 10/24	Problems 10, 11
M/W; 10/28, 30	Ch.12	Th; 10/31	Problems 11, 12
F; 11/1	Exam 3 (Ch.9-12)		
M/W; 11/4, 6	Ch.13	Th; 11/7	Problems 13
F/W/F; 11/8, 13, 15	Ch.14	Th; 11/14	Problems 14
M; 11/18	Exam 4 (Ch.13-14)		
W/F/M; 11/20, 22, 12/2	Ch.15	Th; 11/21	Problems 15
W; 12/4	Exam 5 (Ch.15)		
F; 12/6	Review	Th; 12/5	Problems 15 / review
TUE; 12/10, 1:10-3:10	Final exam (Ch.1-15)		