

HDFS 881: Quantitative Methods in Human Development
Human Development & Family Studies
Michigan State University
Spring 2017, Thursday, 9:10am-12pm
Course Location: 121 Farrall Ag Eng Hall

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Course Objectives:

HDFS 881 is an introductory course in applied statistical data analysis for the behavioral and social sciences. We will focus on: (1) understanding of basic statistical concepts and theories, (2) how to summarize, organize, and interpret data collected in research, (3) how to conduct appropriate statistical tests and draw conclusions from data, (4) statistical computing, and (5) the interpretation of statistical analysis results.

Course Requirements:

1. **SPSS Software:** SPSS (Statistical Package for Social Sciences) will be used throughout the course as the main statistical software. SAS and R procedures will also be provided for most examples if you'd like to learn those programs as well. However, the resulting SPSS output will be what is interpreted and discussed in detail. SPSS is available on MSU Microlab computers (see <http://tech.msu.edu/computerlabs/floor-plans.php> for a list of available labs; check lab schedules for open times). The current version of SPSS is IBM SPSS 22.0; versions of SPSS 17.0 or later would suffice. SPSS software can be rented for a fee. The version to rent is the IBM® SPSS® Statistics Standard GradPack 22 for Windows or Mac. These packages can be found at www.onthehub.com/spss (a 6-month rental costs about \$55). Course lectures and the textbook include material on running analyses in SPSS. Additional suggested resources for skill development:
 - a. *Web sites for learning SPSS and SAS:*
UCLA online seminars and classes: <http://www.ats.ucla.edu/stat/seminars/>
U of Texas online help: <http://www.utexas.edu/cc/stat/software/spss/>
 - b. *You can download R for free at:* <http://www.r-project.org/>
2. **D2L access and proficiency:** D2L will be the portal for submitting and receiving all course materials. Not all internet browsers and versions are compatible with D2L, please check early in the first week of the course to verify that you can access all course content on D2L. It is assumed that you know how to access content and operate within D2L.
3. **Textbooks:** We will be using 2 textbooks, both are required.
Pallant, Julie (2016). *SPSS Survival Manual: A step by step guide to data analysis using SPSS*. 6th edition. Open University Press.

Evans, Annabel Ness (2014). *Using basic statistics in the behavioral and social sciences*. 5th edition. Sage.

4. Class attendance and participation: Attendance is mandatory as this course builds new content that is supported by knowledge of prior content. Thus, attendance and participation will facilitate an immersive experience which is necessary for success in this class. Material that is not presented in the text will be given during class. If you should miss a class, it is your responsibility to obtain notes from a classmate. Class notes will not be provided by the instructors. You will receive participation points for actively participating in class discussions and presenting your homework assignment to the class.
5. Calculator: You will need to use a calculator to complete coursework and exam work. The calculator should have a square root function. Beyond that, the calculator can be fairly low-tech.
6. Respect in the classroom: A classroom environment that is optimal for growth is based on mutual respect between instructors, students, and peers. Behaviors that include: shopping, social media use, text messaging, arriving late/leaving early, checking email, surfing the Internet, sleeping, etc. are disrespectful and distracting to the instructor and your fellow classmates. Please do not engage in these behaviors in class. Engagement in these behaviors in class could result in loss of participation points, as it is impossible to participate if one is also engaging in the above disruptive behaviors.

Coursework:

1. Homework assignments: Homework assignments will consist of exercises in SPSS that will be due on d2L by 12pm (noon) on Wednesdays before class. If a homework assignment is complete and turned in on time, it will receive full credit, regardless of how accurate the assignment is.
2. Lab reports: There will be 5 lab reports that should be completed individually. Each report will include data analysis as evidenced by pasted syntax and output from SPSS and data interpretation as evidenced by a results section. Data will be provided for you to complete these lab reports.

Exams:

There will be a take home mid-term and a final which will test understanding of lecture and reading material. There will be multiple choice questions, open-answer questions, hand calculations and a data analysis section.

Grading:

Points	Grades
Exams 100 pts	93%-100% = 4.0
Lab assignments 50 pts	88%-92% = 3.5
Participation 25 pts	83%-87% = 3.0
Homework 25 pts	78%-82% = 2.5
Total 200 pts	

Academic Integrity:

Participation in this course assumes that you will adhere to the statements set out in the statement as well as the University Policy on academic integrity. MSU's policy is covered in the *Spartan Life* handbook, found on the *Spartan Life* web site at: <http://splife.studentlife.msu.edu>.

If the instructor suspects a student has violated the University policy on academic integrity, the instructor will proceed as guided by University policy. The student will be approached by the instructor. For advisory purposes, the instructor may also consult faculty members who serve on departmental, College or University committees that address academic integrity, the department chairperson, the academic dean, or the Ombudsman; in all of these interactions, the instructor will keep the student's identity confidential. The goal of these consultations is for the instructor to seek guidance to aid her in arriving at a decision about whether the suspicion merits an allegation of academic misconduct. The student may or may not be informed that the instructor is seeking advisement pertaining to a situation involving the student (the student's identity will not be disclosed). The student may be contacted by the instructor for the purpose of arranging a meeting to discuss the circumstances that prompted suspicion.

If after consulting the University policy, there may still remain details that you may need further clarification on. You are encouraged to seek answers to your questions from an appropriate source. For more information on the University policy, first consult the online handbook. If you have any remaining questions and the instructor cannot adequately address them, the instructor will refer you to a knowledgeable source. The Office of the Ombudsman is a knowledgeable and neutral source (and students may post confidential inquiries with this office, see <https://www.msu.edu/~ombud/> for more details), and can also serve as a point of first contact.

Accessibility:

Michigan State University seeks to ensure that its programs are accessible to all persons. Students in need of special assistance or an accommodation regarding any of the course requirements as outlined in the syllabus and other course content are advised to notify the instructor immediately. We will meet privately to discuss a resolution of your matter, which may or may not include an appropriate referral. Confidentiality will be maintained regarding these discussions. For more information on University policy and accommodations, please consult the Resource Center for Persons with Disabilities: www.rcpd.msu.edu.

Statement on diversity:

Michigan State University and the Department of Human Development and Family Studies affirm the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

**HDFS 881: Quantitative Methods in Human Development
Course Schedule**

	Date	Topic	Readings	What's due?
1	1/12	Descriptive statistics: Central tendency and dispersion	Pallant: 4, 5 Evans: 3, 4, 8	
2	1/19	Descriptive statistics: Frequencies and Quantiles	Pallant: 6, 7 Evans: 2, 5	HW 1
3	1/26	Bivariate descriptives: Covariance and correlation	Pallant: 10 Evans: 5, 6	HW 2
4	2/2	Probability, sampling distribution, and confidence intervals	Evans: 7, 8, 9	HW 3
5	2/9	Comparing groups: Quantitative and Categorical differences	Pallant: 16, 17 Evans: 10, 14	HW 4; Lab 1
6	2/16	Comparing groups: between subjects ANOVA	Pallant: 18, 19 Evans: 11	HW 5
7	2/23	Comparing groups: within subjects ANOVA (Adam Farero)	Evans: 12	HW 6; Lab 2
8	3/2	Comparing groups: mixed designs and ANCOVA	Pallant: 20 Evans: 12	Mid-Term
9	3/9	SPRING BREAK		
10	3/16	Comparing groups: Interactions in ANOVA	Pallant: 20 Evans: 12	HW 7
11	3/23	Exploring relationships: Correlation and partial correlation	Pallant: 11, 12 Evans: 16	HW 8; Lab 3
12	3/30	Exploring relationships: Linear regression	Evans: 17	HW 9
13	4/6	Exploring relationships: Interpreting regression coefficients	Evans: 17	HW 10;
14	4/13	Exploring relationships: Multiple regression	Pallant: 13 Evans: 17	HW 11; Lab 4
15	4/20	Exploring relationships: Interactions in regression	Pallant: 13	HW 12
16	4/27	Exploring relationships: Logistic regression	Pallant: 14	HW 13; Lab 5
17	5/4	FINALS WEEK		Final

**These are tentative dates, subject to change, the Instructor reserves the right to make changes to the syllabus and schedule as necessary. Students will be notified in advance of any change.*