

EASTERN MICHIGAN UNIVERSITY

Eastern Michigan University
EDPS 621: Statistical Applications in Educational Research
Fall, 2007

Instructor: Dr. Kyung-Hee Kim
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Office: 313I-A Porter
Office hours: Mondays & Wednesdays: 8:00 am -9:30 am
Mondays: 12:30 pm – 4:30 pm on the Main Campus
Wednesdays: 12: 30 pm – 2:30 pm on the Main Campus
3:30 pm – 4:30 pm on the Livonia Campus
By Appointment
Class: 5:00-6:50 on Mondays (Main) or Wednesdays (Livonia)
Classroom: Porter 205E (Bonisteel computer lap) on Main Campus on Mondays or EMU Livonia (38777 West Six Mile, #400; Livonia, MI 48152; 734-542-4368) on Wednesdays

Course Description:

Emphasizes the role of descriptive statistics in social science research; computation of central tendency, variability, relationship and prediction indices; use of statistical software to analyze and display data; and construction/interpretation of quantitative research results.

Required Text:

Minium, E.W., Clarke, R.C, & Coladarci, T. (1999). *Elements of statistical reasoning*. New York, NY: John Wiley & Sons, Inc.
Green, S.B. & Salkind, N.J. (2003). *Using SPSS for Windows and Macintosh: Analyzing and understanding data*, 5th ed. Upper Saddle River, NJ: Pearson Education, Inc.
Available at all campus bookstores

Recommended Text:

American Psychological Association (2001). *Publication manual of the American Psychological Association*, 5th ed. or 6th ed. Washington, DC: Author.
Available at all campus bookstores

Required Equipment:

A calculator with a square root and squaring function. Note, this does not need to be an expensive calculator; a basic calculator with these functions will suffice!

We will use SPSS (Statistical Software for the Social Sciences) for most of the data analysis. You may choose to purchase this software or use one of the campus labs. However, many former students found it highly beneficial to purchase the software to complete course requirements.

Purpose/Rationale

The course is designed as an introduction to behavioral science statistics for graduate students in education and will focus on the application of statistical procedures within the research context. By the end of class students should understand basic descriptive statistics and their research application. Specifically, how to organize data, proficiently use SPSS, interpret results, and write a research report. You will be asked to organize, describe, analyze, and interpret data while selecting appropriate statistical techniques to answer research questions. The course is not a terminal statistics course. The course aims to develop educators who are committed to their ongoing professional growth and are aware of research studies relating to issues in our culturally diverse society.

Outcomes/Objectives

The course objectives for the students (per course catalogue) are:

- (1) identify problem areas, populations and samples of research studies
- (2) describe types of research methodologies
- (3) explain basic research and statistical terms and concepts
- (4) draw graphs for small data sets
- (5) recognize how data can be summarized by use of descriptive statistics
- (6) select appropriate formulae to calculate descriptive-data indices
- (7) compute descriptive statistics
- (8) interpret the meaning of statistical analyses
- (9) compare and contrast measures of central tendency, variability, and correlation
- (10) use statistical computer packages to analyze data
- (11) interpret statistical components of research articles concerning issues in our diverse society
- (12) focus on the uses and misuses of research reporting
- (13) evaluate the results sections of research articles

Requirements:

A total of 100 points may be earned through the Data Analysis Project (30 points), Two Tests (50 points), Homework (10 points), and Movement Toward Professionalism (10 points). Each assessment is described in more detail below.

1) Data Analysis Project (30 points):

You will write a formal research paper to demonstrate your skills and understanding of basic statistical topics covered in this course. Students may use data provided in class or their own data, provided the data are pre-approved (by me). Specific directions and criteria will be handed out in class.

2) Two Tests (50 points: Test 1--20 points; Test 2--30 points)

Please do not talk about your homework or tests grades in class, if you have any questions about your grades you should e-mail me and set up an appointment. I consider an overemphasis on grades and discussions about grades (e.g., complaints) in class both unproductive and unprofessional (Hint: See professionalism grade).

3) Homework (10 points)

There will be 10 weekly homework sheets. Each homework assignment is worth 1 point.

4) Movement Toward Professionalism (10 points):

This is a subjective portion of your final grade. I will grade this in my sole discretion depending upon your class participation, timeliness and professionalism. An approximate scale is:

- 0 points for excessive tardiness and/or essential lack of participation (including not completing assignments) and/or ill behavior (including chewing gum, eating loudly, yawning loudly, sleeping, complaining about grades, disruptive behavior (e.g., chatting), or being rude) in class (whether or not I correct you)
- 10 points for perfect attendance, consistent timeliness and responsibility, and consistent positive and constructive behavior in class.
- A “Professionalism” grade of 10 points will be reserved for students who meet achieve 10 points and who, in my judgment, stand out as strongly engaged in classroom activities (e.g., completing assignments; volunteering; frequent constructive verbal contributions; strong engagement in group activities, etc.)

Please note: I strongly discourage being disrespectful and/or rude to your classmates or the professor and this type of behavior will result in a 0 for your “Professionalism” grade. I consider cell phones and pagers ringing during class disrespectful and types of disruptions will be a negative toward professionalism.

I expect that most students will earn an A, a B, or a C in this class. **However, this class is totally different from any other required graduate classes at EMU, many of you will struggle with this class and it is easy to get a low grade in this class. I have had many students complain that they were a 4.0 student before this class and are struggling in this class. Please also consider that I believe that specific complaint is unprofessional.** If you have any questions or concerns, please contact me earlier in this semester.

General Course Expectations

Grading Policy

- A = All required work is complete and on time. Quality is above what is required. Student has demonstrated an integrated understanding of the subject matter and gone beyond basic requirements.
- B = All required work is complete; quality shows a basic understanding of material and writing has few mechanical errors.
- C = All work is complete; quality is lacking.
- D- (62 percentage points) = Work is incomplete (or has missing part(s)); quality is lacking.

The following scale will be used in this course

A (93-100%)	B (83-86%)	C (73-76%)	D (63-66%)
A- (90-92%)	B- (80-82%)	C- (70-72%)	D- (60-62%)
B+ (87-89%)	C+ (77-79%)	D+ (67-69%)	E (59% & below)

Late Work Policy

Late work will **NOT be accepted**. An assignment is late if it is not turned in at the very beginning of the class it is due.

Academic Honesty

University rules concerning plagiarism will be followed. You are expected to complete your own work and give appropriate credit when referencing work from other people.

Attendance Policy

- It is important for you to be in class both to learn and to help others learn. Arriving late and/or leaving early interrupts the flow of the class and is unprofessional.
- It is important that **you sign in every class session** as this will be my attendance role. I will set out a sign in sheet before class begins. If you come in after I start class it is **your responsibility to sign in** immediately after class (or during a break without disturbing the lesson) so you are not marked absent for the class.
- If you miss class, it is your responsibility to determine what you missed during class and submit the appropriate work timely. I consider it unprofessional to expect me to review class material that you missed with you, please do not ask.
- Absences **will lower your grade** in the class. **Each absence beyond one will lower your final grade by five percentage points.** Each time you are late or leave earlier I will count as ½ an absence. I consider that leaving early can be more disruptive than arriving late. Thus, if you are planning to leave early, you must notify me in advance. Otherwise, your leaving early will be counted as **one absence**.
- You are allowed to attend Monday class, Wednesday Class, or Both. However, you must notify me **by e-mail** in advance.

Professional Writing

Papers and tests should have few, if any, grammatical, spelling, or other mechanical errors. If you are not a strong writer, be sure to use the spelling and grammar checks on your computer, or a proofreader. There are NO excuses for not using these aids. Assignments with many errors will receive a grade of C or lower since this is unacceptable writing for teachers. Note: I will not correct all of your grammar/spelling errors—at most I will point out errors through one or more examples in your paper. It is **your responsibility to read and correct** the entire paper prior to submittal.

APA Formatting

- Papers should be typed, double-spaced, 12-point font, Times New Roman, 1" margins, and have no spaces between sections.
- Your paper must start with a numbered cover page that includes (in order) Project/study title, Course number & title, Your name, Your Program, Eastern Michigan University, Date of submission, and the semester (Fall 2007).
- All pages should have a page number with your last name on the top right corner.
- Papers **not followed the APA Style** will receive a grade **no higher than B**.

Course Incompletes

Incompletes will be given only: a) in extenuating circumstances; and b) after a student-initiated discussion with the instructor **prior to** the end of the semester. Generally, a student must have completed the majority of course work and have an average grade of "B" or better in order to be even considered for an incomplete.

- In this course, you must have **83% (B) or better** on the test 1 to qualify for an "I" grade.

- You must also present an acceptable reason (and accompanying documentation) for an extension, the date when your paper will be submitted, and your student ID number.

The instructor will provide the student and the department head with a rationale for the "I" grade and will specify the work required to remove the incomplete. An "I" grade must be removed within 12 months from the end of the semester or session in which it was issued or within 18 months from the beginning of the semester of registration for correspondence courses. These limits may be extended only under unusual circumstances upon the written recommendation of the instructor and with the approval of the dean of graduate studies and research. The initiative for conversion of an "I" to a letter grade rests with the student. If not converted, the "I" becomes a permanent part of the student's academic record. Permanent "I" grades may be removed only by repeating the course under the policy on repeating courses

Students with Disabilities

Pursuant to the Americans with Disabilities Act (ADA) of 1990, students with qualified disabilities will not be the objects of illegal discrimination in this class. If you have a documented disability, please contact me immediately so that I can provide appropriate accommodations to the learning environment.

Course Calendar
(Subject to change if necessary)

		Topic	Reading	Assignment Due
Week 1	Sep. 5 (Wed); Sep. 10 (Mon)	Introduction Introduction to SPSS	Ch.1*	Information card (10% of Prof.) /Pre-Assessment (10% of Prof.) /Reflection of Reading (1st H.)
Week 2	Sep. 12 (Wed); Sep. 17 (Mon)	Frequency Distributions SPSS	Ch. 2* Unit 1	Review Worksheet (2nd H.) Frequency Worksheet (3rd H.)
Week 3	Sep. 19 (Wed); Sep. 24 (Mon)	Graphic Representation SPSS	Ch.3* Unit 2	Graphic Worksheet (4th H.)
Week 4	Sep. 26 (Wed); Oct. 1 (Mon)	Central Tendency SPSS	Ch. 4* Unit 3	Central Tendency Worksheet (5th H.)
Week 5	Oct. 3 (Wed); Oct. 8 (Mon)	Variability SPSS	Ch. 5* Unit 4	Variability Worksheet (7th H.)
Week 6	Oct. 10 (Wed); Oct. 15 (Mon)	Normal Distributions SPSS	Ch. 6* Unit 5	Normal Distributions Worksheet (8th H.)
Week 7	Oct. 17 (Wed); Oct. 22 (Mon)	Test	Ch. 1-Ch. 6 Unit 1-Unit 5	Test 1
Week 8	Oct. 24 (Wed); Oct. 29 (Mon)	Preparing/ Evaluate Research SPSS	Research Article	Research Article Evaluation (6th H.)
Week 9	Oct. 31 (Wed); Nov. 5 (Mon)	Correlation SPSS	Ch.7* Lesson 30 & 31	Correlation Worksheet (9th H.)
Week 10	Nov. 7 (Wed); Nov. 12 (Mon)	Correlation SPSS	Ch.7* Lesson 30 & 31	
Week 11	Nov. 14 (Wed); Nov. 19 (Mon)	No Class		DAP Work Week
Week 12	Nov. 26 (Mon); Nov. 28 (Wed)	Regression SPSS	Ch. 8* Lesson 32 & 33	Regression Worksheet (10th H.)
Week 13	Dec. 3 (Mon); Dec. 5 (Wed)	Regression SPSS	Ch. 8* Lesson 32 & 33	
Week 14	Dec. 10 (Mon); Dec. 12 (Wed)	DAP Presentations		Data Analysis Project
Week 15	Dec. 17 (Mon)	Test	Ch. 7-8* Lesson 30-33	Test 2

* Chapter denotes reading from Minium, E.W., Clarke, R.C., & Coladarci, T. (1999). *Elements of statistical reasoning*, 5th ed. New York, NY: John Wiley & Sons, Inc.

Unit or Lesson refers to Green, S.B. & Salkind, N.J. (2003). *Using SPSS for Windows and Macintosh: Analyzing and understanding data*, 4th ed. Upper Saddle River, NJ: Pearson Education, Inc.