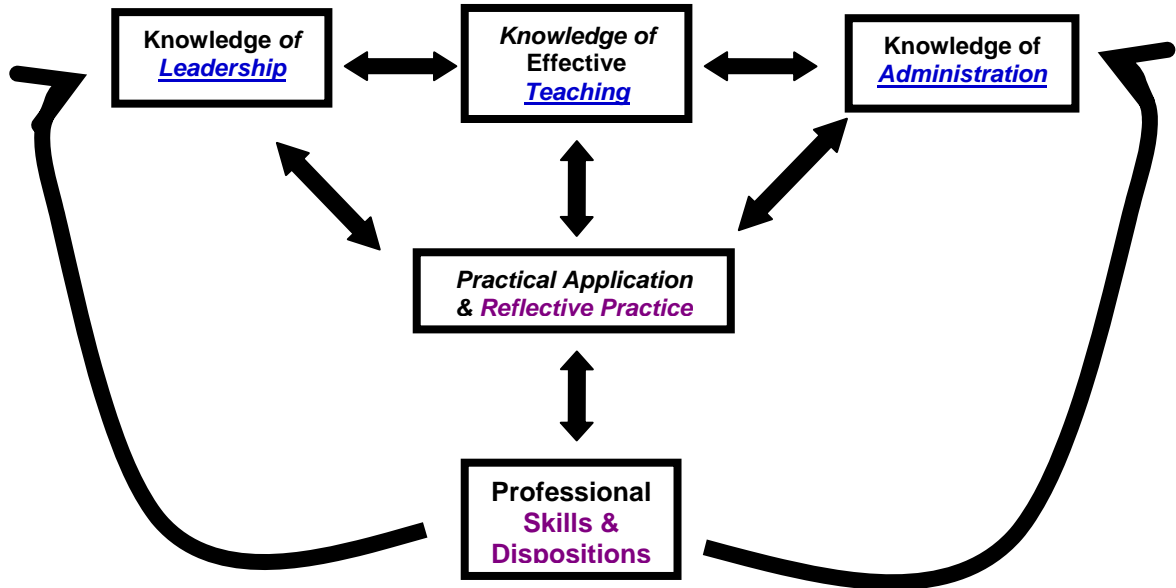


**QUANTITATIVE METHODS
IN EDUCATIONAL LEADERSHIP
DEPARTMENT OF EDUCATIONAL LEADERSHIP
Western Illinois University**



**EDL 701 – QUANTITATIVE METHODS IN EDUCATIONAL LEADERSHIP
DEPARTMENT OF EDUCATIONAL LEADERSHIP
WESTERN ILLINOIS UNIVERSITY**

Instructor: Bridget Z. Sheng, Ph.D.

Office: 81 Horrabin Hall

Office Hours: Tuesdays and Thursdays from 10am-12pm, 1pm-4:30pm. It is possible to meet on Friday evenings from 5pm to 7pm or for one or two hours after class on Saturdays but appointments need be made for these times.

Telephone: 298-2725 (work)
298-1070 (general EDL office)

E-Mail: zb-sheng@wiu.edu

Bookstore: (800) 338-6369 (To order books from WIU bookstore - charged to your credit card and shipped to you UPS.)

REQUIRED TEXT:

Urduan, T. C. (2005). *Statistics in Plain English* (2nd ed.). NJ: Lawrence Erlbaum.

RECOMMENDED SOFTWARE:

SPSS Inc. (2007). *SPSS 16.0 Student Version for Windows*. NJ: Prentice Hall.

Most of you probably can't come to campus often to use SPSS in the computer labs, so I strongly recommend you to purchase a copy of SPSS 16.0 Student Version for Windows to use at home. The student version is available at prenticehall.com, JourneyEd.com, CampusTech.com, and other online bookstores. It comes with a four-year license code. The student version currently does not have a Mac version. It is limited to 50 variables and 1500 cases but should be able to accomplish the analyses for the course.

You may purchase SPSS Graduate Pack for a higher price. The graduate pack is similar to a full version and can run on both Windows and Mac systems.

COURSE DESCRIPTION:

This course will build upon students' prior experience in analysis, interpretation, and application of research data. The course addresses descriptive statistics, statistical inference, hypothesis testing, correlation, regression, and analysis of variance using SPSS.

COURSE GOAL:

In this course we will examine some basic concepts of statistics and measurement, including the use of various statistical techniques for the analysis of data. Part of your learning will include the ability to apply the knowledge of basic statistical techniques to comprehend, conduct and evaluate quantitative research.

Each student will:

1. Demonstrate an understanding of concepts of basic statistics, comprehend written material which includes basic statistics, and discuss statistical concepts and applications of statistics with colleagues.
2. Learn to select and apply appropriate basic statistical procedures in specific situations, identify the proper statistical procedures to use for given purposes in given situations, and calculate and interpret the identified statistical procedures.
3. Become prepared for conducting educational research. Become more educated "consumers" of statistics.

TECHNIQUES OF INSTRUCTION:

1. Lecture/discussion.

2. Paper and pencil activities.
3. Structured group activities.

SOURCE MATERIALS:

1. Text
2. Handouts
3. Online sites

COURSE REQUIREMENTS AND ASSESSMENT:

Requirements: You are required to complete five assignments. Although some computation is unavoidable, the emphasis of the assignments will be on the application and interpretation of statistics. Each assignment is due one week after it was given.

Assessment: Grades will be based on the average of the five assignments, each assignment being equally weighted.

Grading:

90- 100	A	A = Superior Graduate Work
80- 89	B	B = Good Graduate Work
70 - 79	C	C = Unacceptable Work at the Graduate Level
60 - 69	D	
00 – 59	F	

Computing: Some hand calculations with a pocket calculator will be necessary for the course. Essential functions for the calculator include add, subtract, multiply, divide, and square root. You do NOT need to purchase a more advanced calculator with advanced statistical functions. SPSS will be used for conducting analyses in the course.

WesternOnline: Class notes and assignments will be posted on WesternOnline.

I am participating in the COEHS faculty innovators program. As part of the program requirement, I need complete a research project that illustrates some levels of integration of new technology (ies) in the teaching of my course and be able to document the efficacy of the new technology (ies) utilized in enhancing teaching or learning. This semester, I will record some sessions of my courses and you will be asked to complete

surveys and answer questions relating to this project. Your cooperation will be highly appreciated.

KNOWLEDGE BASE:

- Creswell, J. W. (2007). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). NJ: Prentice Hall.
- Fielding, A. (2006). *Discovering statistics using SPSS* (2nd ed.). Thousand Oaks, CA: Sage.
- Gay, L. R. & Airasian, P. (2000). *Educational Research: Competencies for analysis and application* (6th ed.). NJ: Prentice Hall.
- Hays, W. L. (1981). *Statistics*. NY: Holt, Rinehart and Winston..
- Huck S. W. (2008). *Reading statistics and research*. Boston, MA: Allyn and Bacon.
- Kritsonis, W.A., Griffith, K.G., Bahrim, C., Marshall, R.L., Herrington, D., Hughes, T.A. & Brown, V.E. (2008). *Practical applications of educational research and basic statistics*. Houston, TX. National Forum Journals.
- Myers, J. L. & Well, A. D. (1995). *Research design and statistical analysis*. NJ: Lawrence Erlbaum.
- Pallant, J. (2007). *SPSS survival manual* (3rd ed.). NY: McGraw Hill.
- Rice, J. A. (2006). *Mathematical Statistics and Data Analysis* (3rd ed.). Belmont, CA: Duxbury.
- Runyon, R. P., Coleman, K. A. & Pittenger, D. J. (2000). *Fundamentals of Behavioral Statistics* (9th ed.). Boston: McGraw-Hill.
- Trochim, W. M. K. & Donnelly, J.P. (2007). *The research methods knowledge base* (3rd ed.). Mason, OH: Thomson.
- Waigant, A. (2001). *Statistics primer*. Dubuque, IA: Kendall/Hunt.

You may find the following books and websites come in handy when conducting your dissertation research or other research projects:

- American Psychological Association. (2001). *Publication manual of the American Psychological Association* (5th ed.). Washington DC: Author.
- American Psychological Association. (2005). *Concise rules of APA style*. Washington DC: Author.
- Nicol, A. A. M. & Pexman, P. M. (1999). *Presenting your findings: A practical guide for creating tables*. Washington DC: American Psychological Association.
- Nicol, A. A. M. & Pexman, P. M. (2003). *Displaying your findings: A practical guide for creating figures, posters, and presentations*. Washington DC: American Psychological Association.

WIU Library Education database

http://www.wiu.edu/library/databases/index_2007.sphp?subjid=11&showonesubj=1

Eric database

<http://www.eric.ed.gov/>

Dissertation database

<http://proquest.umi.com/pqdweb?RQT=302&cfc=1>

To add the WIU Library Research Toolbar to your Firefox web browser

<http://www.wiu.edu/library/units/infosys/toolbar>

SPSS web resources

<http://www.stat.tamu.edu/spss.php>

Some online Stats courses

<http://business.clayton.edu/arjomand/book/sbk00.htm>

<http://davidmlane.com/hyperstat/index.html>

Attendance Policy

A student who is absent for more than 50% of a scheduled day of a weekend academy class will be assigned a grade of Incomplete (I) by the instructor and must make up the appropriate day in its entirety the next time the course is offered in order to change the "incomplete" to a letter grade.

EDL Incomplete Policy

Incomplete (I) is given under extreme extenuating circumstances. Although students are expected to complete the course requirements before the end of the term, in some instances it is recognized that students may not be able to do so because of factors beyond their control. In such instances, and upon written petition to the instructor, a temporary grade of "INCOMPLETE" may be given to permit the student more time to complete the course requirements. In the event that a faculty member initiates a grade of "I", a letter will be sent to the student from the faculty member explaining the reason for the "I" and outlining what must be done to remove this grade. This letter will be placed in the Graduate Student's File. A student must satisfy the course requirements during the next semester that the course is taught or (s)he will be awarded a grade based upon the work completed.

The normal grade for the first semester of EDL 555 and EDL 655 is INCOMPLETE because the internship is viewed as a single entity rather than as two separate semesters.

WIU Academic Dishonesty Policy

Western Illinois University is dedicated to the discovery and communication of knowledge. The University can best function and accomplish its objectives in an atmosphere where high ethical standards prevail. For this reason, and to insure that the academic work of all students will be fairly evaluated, the University strongly condemns academic dishonesty. The most prevalent forms of academic dishonesty are cheating and plagiarism. Dishonesty of any kind with respect to examinations, course assignments, alteration of records, or illegal possession of examinations shall be considered cheating. It is the responsibility of the student to not only abstain from cheating, but also to avoid making it possible for others to cheat. Any student who knowingly helps another student cheat is as guilty of cheating as the student he or she assists.

The submission of the work of someone else as one's own constitutes plagiarism. Academic honesty requires that ideas or materials taken from another course for use as a course paper or project be fully acknowledged. Plagiarism is a very serious offense in whatever form it may appear, be it submission of an entire article falsely represented as the student's own, the inclusion within a piece of the student's writing of an idea for which the student does not provide sufficient documentation, or the inclusion of a documented idea not sufficiently assimilated into the student's language and style.

WIU Disability Support Services Policy

In accordance with University policy and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. For the instructor to provide the proper accommodation(s) you must obtain documentation of the need for an accommodation through Disability Support Services and provide it to the instructor. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he/she is not legally permitted to inquire about such particular needs of students. Students who may require special assistance in emergency evacuations (i.e. fire, tornado, etc.) should contact the instructor as to the most appropriate procedures to follow in such an emergency. Contact Disability Support Services at 298-2512 for additional services.

COURSE OUTLINE (Guideline)

DATE	TOPICS	CHAPTER
First Weekend Sept. 13	Introduction Basic Concepts	1, 2, 3
	Graphical and Numerical Presentation of Data	
	Assignment #1	
Second Weekend Sept. 27	The Normal Distribution Standard Scores	4 5
	Correlation	8
	Assignment #2	
Third Weekend Oct. 11	Regression Statistical Inference Sampling Distribution	13 6,7
	Hypothesis Testing	9
	Assignment #3	
Fourth Weekend Oct. 25	t tests Analysis of Variance	9 10
	Assignment #4	
Fifth Weekend Nov. 8	Analysis of Variance Categorical data	11, 12 14
	Assignment #5	