

EDUC 705, Basic Statistical Methods in Education (3 credits, letter grades)

Section 79, Summer 2016

I. Description

Fundamentals of statistical analysis that apply to education and other fields according to student needs; critical ratios and the test for paired, pooled, and unpooled samples; straight line and curvilinear regression for simple and multiple correlation of variables; introduction to the use of probability, simple and two-way analysis, chi square, and other nonparametric statistics. Prerequisites: 383/583 or 751; consent of the instructor.

Standards: Wisconsin Teacher #9 & #10, Wisconsin Administrator & Pupil Services #7.

Dates: 6/20 to 8/2/2016

D2L Site: <http://www.uwsp.edu/d2l/Pages/default.aspx>

Instructor: Dr. Henry St. Maurice **Office:** 464 CPS Building

Office Hours: by appointment

Phone: 920-318-0037

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II. Objectives

In this course participants will use basic statistical tools to analyze educational practices. The course is in six parts. Written work will consist of five quizzes, one project, and a discussion forum.

III. Outline

Part 1: Introductions, overviews, & basic concepts. (Syllabus; Ravid Chapters 1 & 2)

Part 2: What are descriptive statistics? (Ravid Chapters 3, 4, 5, & 6)

Part 3: What is measuring relationships? (Ravid Chapters 7 & 8)

Part 4: What is comparing group means? (Ravid Chapters 9, 10 & 11)

Part 5: What are reliability and validity? (Ravid Chapters 12, 13 & 14)

Part 6: What is a research proposal? (Ravid Chapters 15, 16 & 17)

IV. Assignments

Quizzes: One each for Parts 1, 2, 3, 4, & 5.

Discussion Board: At least five posts or comments of about 150 words each. Please do not post quiz responses. Posts must adhere to [UWSP Policy on use of technology resources](#).

Final Project: Six presentation slides and notes on a topic to be selected.

Required slides:

- Topic;
- Question;
- Population & Sample;
- Method;
- Instrumentation;
- Data Analysis.

V. Assessment

Five quizzes @ 5 points	25 points possible
Five posts @ 1 point	5 points possible
One final project @ 10 points	10 points possible
Total	40 points possible

38 to 40 points = A

36 to 37 points = A-

34 to 35 points = B+

30 to 33 points = B

28 to 30 points = C+

26 to 27 points = C

24 to 25 points = C -

22 to 23 points = D

0 to 22 points = F

VI. Bibliography

Required Text (available from UWSP Bookstore or online sites):

Ravid, R. (2015). [*Practical statistics for educators*](#) (5th ed.). Lanham, MD: Rowman & Littlefield. ISBN 978-1-4422-4286-9

Supplemental Materials:

[*Excel for Dummies*](#).

Gonick, L. & Smith, W. (1993) [*The cartoon guide to statistics*](#). New York, NY: HarperCollins.

Kahn, S. (2014). *Probability & statistics*. <https://www.khanacademy.org/math/probability>

Recommended Materials:

Silver, N. (2012). [*The signal and the noise: Why so many predictions fail-but some don't*](#).
New York, NY: Penguin.

Tufte, E. (2010). *Beautiful evidence*. http://www.youtube.com/watch?v=Th_1azZA2OY
<http://www.edwardtufte.com/tufte/>

VII. RUBRICS

	PROFICIENT	ACCEPTABLE	UNACCEPTABLE
Project	Vivid description of topic; More than six slides; >500 words of notes; Detailed statistical method; Correct format & style;	Description of topic; Six slides; 500 words of notes; Statistical method; Consistent format & style;	No description of topic; Fewer than six slides; <500 words of notes; No statistical method; Inconsistent format & style.
Posts	Clearly expressed opinion; More than 150 words each; Respectful tone;	Opinion expressed; Approx. 150 words each; Moderate tone;	No opinion expressed; Fewer than 150 words each; Disrespectful or immoderate.

VII. UWSP Community Bill of Rights and Responsibilities

UWSP values a safe, honest, respectful, and inviting learning environment. In order to ensure that each student has the opportunity to succeed, a set of expectations have been developed for all students and instructors. This set of expectations is known as the Rights and Responsibilities document, and it is intended to help establish a positive living and learning environment at UWSP. For more information go to

<http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilites.aspx>

The Rights and Responsibilities document also includes the policies regarding academic misconduct, which can be found in Chapter 14. A direct link can be found at

<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>

VIII. Americans with Disabilities Act

The Americans with Disabilities Act (ADA) is a federal law requiring educational institutions to provide reasonable accommodations for students with disabilities. For more information about UWSP's policies, check here:

<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/ADA/rightsADAPolicyinfo.pdf>

If you have a disability and require classroom and/or exam accommodations, please register with the Disability Services Office and then contact me at the beginning of the course. I am happy to help in any way I can. For more information, please visit the Disability Services Office, located on the sixth floor of the Learning Resource Center (a.k.a. the library). You can also find more information here: <http://www4.uwsp.edu/special/disability/>

IX. WISCONSIN TEACHER STANDARDS (Wis. Admin Rules PI-34.02)

1. The teacher understands the central concepts, tools of inquiry, and structures of the disciplines he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for pupils
2. The teacher understands how children with broad ranges of ability learn and provides instruction that supports their intellectual, social, and personal development.
3. The teacher understands how pupils differ in their approaches to learning and the barriers that impede learning and can adapt instruction to meet the diverse needs of pupils, including those with disabilities and exceptionalities.
4. The teacher understands and uses a variety of instructional strategies, including the use of technology to encourage children's development of critical thinking, problem solving, and performance skills.
5. The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.
6. The teacher uses effective verbal and nonverbal communication techniques as well as instructional media and technology to foster active inquiry, collaboration, and supportive interaction in the classroom.
7. The teacher organizes and plans systematic instruction based upon knowledge of subject matter, pupils, the community, and curriculum goals.
8. The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the pupil.
9. The teacher is a reflective practitioner who continually evaluates the effect of his or her choices and actions on pupils, parents, professionals in the learning community and others and who actively seeks out opportunities to grow professionally.
10. The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support pupil learning and well being and who acts with integrity, fairness and in an ethical manner.

X. WISCONSIN ADMINISTRATOR STANDARDS (Wis. Admin Rules PI-34.03)

1. The administrator has an understanding of and demonstrates competence in the teacher standards under s. PI 34.02.
2. The administrator leads by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared by the school community.
3. The administrator manages by advocating, nurturing and sustaining a school culture and instructional program conducive to pupil learning and staff professional growth.
4. The administrator ensures management of the organization, operations, finances, and resources for a safe, efficient, and effective learning environment.
5. The administrator models collaborating with families and community members, responding to diverse community interests and needs, and mobilizing community resources.
6. The administrator acts with integrity, fairness, and in an ethical manner.
7. The administrator understands, responds to, and interacts with the larger political, social, economic, legal, and cultural context that affects schooling.

WISCONSIN PUPIL SERVICES STANDARDS (Wis. Admin Rules PI-34.04)

1. (The pupil services professional understands the teacher standards under s. PI 34.02
2. The pupil services professional understands the complexities of learning and knowledge of comprehensive, coordinated practice strategies that support pupil learning, health, safety and development.
3. The pupil services professional has the ability to use research, research methods and knowledge about issues and trends to improve practice in schools and classrooms.
4. The pupil services professional understands and represents professional ethics and social behaviors appropriate for school and community.
5. The pupil services professional understands the organization, development, management and content of collaborative and mutually supportive pupil services programs within educational settings.
6. The pupil services professional is able to address comprehensively the wide range of social, emotional, behavioral and physical issues and circumstances which may limit pupils' abilities to achieve positive learning outcomes through development, implementation and evaluation of system-wide interventions and strategies.
7. The pupil services professional interacts successfully with pupils, parents, professional educators, employers, and community support systems such as juvenile justice, public health, human services and adult education.