

Western Kentucky University
School of Nursing
NURS 521
Statistics in Health Care
Summer 2019

Course Description: Fundamental statistical concepts and techniques addressed include levels of measurement, measurement reliability and validity, and common statistical techniques. The emphasis will be on statistics used in health care research to improve clinical outcomes.

Course Objectives: Upon completion of this course, the student will be able to:

1. Demonstrate understanding and application of descriptive/inferential statistics in health care research.
2. Interpret statistical results and identify clinical outcomes.
3. Critique current health care research for appropriate statistical application.

Course Number: NURS 521

Course Title: Statistics in Health Care

Course Credit: 3 hours

Prerequisite(s): None

Location and Hours: online

Faculty: Dr. Eve Main

Office: Medical Center Health Sciences Complex

e-mail: eve.main@wku.edu

MSN Program Outcomes	Course Objectives
Demonstrate proficiency in the utilization of research and quality improvement, including problem identification, awareness of outcomes, evaluation, and dissemination of research.	<ul style="list-style-type: none"> • Demonstrate understanding and application of descriptive/inferential statistics in health care research. • Critique current health care research for appropriate statistical application.
Integrate theory and research from nursing and related disciplines as a foundation for advanced practice.	<ul style="list-style-type: none"> • Demonstrate understanding and application of descriptive/inferential statistics in health care research. • Interpret statistical results and identify clinical outcomes.
Integrate theoretical knowledge of health promotion and maintenance and illness/disease prevention to achieve optimal health.	<ul style="list-style-type: none"> • Interpret statistical results and identify clinical outcomes.

DNP Program Outcomes	Course Objectives
Critically appraise theoretical concepts and knowledge from nursing and other disciplines and integrate this evidence in developing, implementing, and evaluating best practices for improved health outcomes.	<ul style="list-style-type: none"> • Demonstrate understanding and application of descriptive/inferential statistics in health care research. • Interpret statistical results and identify clinical outcomes. • Critique current health care research for appropriate statistical application.
Develop, integrate, and evaluate evidence-based health care innovations while considering cultural, economic, ethical, legal, political, and technological issues across diverse health systems and models.	<ul style="list-style-type: none"> • Interpret statistical results and identify clinical outcomes. • Critique current health care research for appropriate statistical application.
Analyze and apply advanced nursing practice concepts of clinical prevention and health promotion to improve health outcomes in relevant populations.	<ul style="list-style-type: none"> • Interpret statistical results and identify clinical outcomes. • Critique current health care research for appropriate statistical application.

Required Textbook:

Grove, S. K. & Ciper, D. J. (2017). *Statistics for Nursing Research, 2nd Edition*. St. Louis, MO: Saunders Elsevier. ISBN: 9780323358811

Instructional Methods: This course will be taught using a variety of instructional teaching methods. Students will have assigned readings and activities; discussions, critiques, and/or other online methods.

WKU Campus Closure:

In the event of WKU campus closure(s), please check with course faculty through Blackboard for alternate assignments and information. Hybrid courses will continue in the online format. Online courses will continue as scheduled.

Course Outline:

- I. Preliminary Analyses of Data
 - a. Level of Measurement
 - b. Descriptive Statistics
 - c. Percentages, Percentile, Histograms, and Line Graphs
- II. Probability and Nonprobability Sampling Methods
- III. Understanding the Sampling Section
 - a. Sample criteria
 - b. Sample size
 - c. Refusal rate
 - d. Mortality rate
- IV. Validity and Reliability
- V. Statistical Techniques to Compare Groups
 - a. Non-parametric Statistics
 - b. *t*-tests
 - c. Analysis of Variance
- VI. Statistical Techniques to Explore Relationships Among Variables
 - a. Pearson's Product-Moment Correlation Coefficient
 - b. Partial and Multiple Correlations
 - c. Simple Linear Regression
 - d. Multiple Linear Regression

Course Evaluation:

Application Assignments (12 @ 10 pts each)	120 pts
Midterm Examination	100 pts
Final Examination	<u>100 pts</u>
Total possible pts	320 pts

Grading Scale:

A =	90-100
B =	80 - 89
C =	70 - 79
D =	60 - 69
F =	0 - 60

Communication:

Handouts, assignments, and examinations will be posted on the course section for the class. Email messages will be sent to individuals and groups of students via Blackboard. It is the student responsibility to check their WKU email

account once every 24 hours for emails and notifications, as well as making sure that their email inbox is not full. Grades will be posted at Grade Center on the course Blackboard Site.

Course Policies:

Academic policies found in the SON Graduate Handbook, the DNP Handbook and the WKU Graduate Catalog will be followed in this course.

- APA 6th edition format is required for written assignments
- Student is responsible for keeping a copy of written assignments submitted to faculty for grading
- Student is to submit all papers electronically in the assignment link provided in Blackboard unless instructed otherwise. Students are required to meet pre-established deadlines for assignments unless **PRIOR** arrangements have been made with faculty.

Technical Support

The phone number for technical support is 270-745-7000. Since this course is web-based, there may be an occasion(s) in which students cannot avoid technical difficulties. If you are have technical difficulties that interfere with the submission of a timely assignment, you must notify the course instructor via email prior to the deadline.

Student Accessibility Resource Center

In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Office for Student Disability Services in the first floor of the Downing Student Union, Room 1074. The phone number is 270.745.5004 and the email address is sarc@wku.edu.

Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

Discrimination and Harassment Policy

Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121.

Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are “Responsible Employees” of the University and **MUST** report what you share to WKU’s Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU’s Counseling and Testing Center at 270-745-3159.

Counseling & Testing Center: provides counseling for students face-to-face <http://www.wku.edu/heretohelp/> but also the Outreach Services offers a “Here to Help” web form where you can ask questions online and have them answered. They also have a 24 hour Help Line for emergencies at 270-843-4357.

The Health Sciences Librarian for CHHS is Dr. Carol Watwood 270-745-3912 or carol.watwood@wku.edu

Class Attendance / Participation: Active participation in the class is expected.

Faculty reserves the right to make changes in the syllabus including adding or subtracting assignments or changing due dates if, in the opinion of the instructor, changes will improve the course or enhance student learning. An updated syllabus will be reviewed with the class and posted on the class blackboard site in such an event.