



Undergraduate Course Syllabus

NUR 340/IHP 340: Statistics for Healthcare Professional

Online

Term: 13EW5

Duration: 8 weeks

Credits: 3 credits

Prerequisites: Admission to the RN-BSN program, ADN, or diploma from an accredited school of nursing.

Instructor Availability and Response Time

As your instructor, I will be active in Blackboard at least five days each week; this is where most of our class interaction will happen. If there are times when I need to be away from the course room for more than 24 hours, I will send an announcement letting you know which faculty member will be covering the course room in my absence. Communication, when in the Blackboard environment, benefits the entire class. Emails sent directly to me should be reserved for concerns of a personal/sensitive nature. I will respond to questions—either via the Discussion Board or via email—within 24 hours. Please consider using the course questions and answers for general course questions. Refer to the **My Instructor** tab in Blackboard for instructor contact information and office hours.

Course Description

This course explores the basic statistical concepts of inference, variability, and statistical significance. Statistical methods used to describe data, quantify relationships and to test for differences between means will be studied. Parametric statistics will be the main focus but some common nonparametric tests will be introduced. The course will focus on the interpretation of published research findings.

AACN Essentials

This course meets the AACN Essentials of Baccalaureate Education for Professional Nursing Practice: Essential I: Liberal Education for Baccalaureate Generalist Nursing Practice; this course is offered as an elective and for students who have not had this content in their pre-licensure program.

Course Objectives

Upon completion of this course, students will be able to:

1. Identify the need for inferential statistics in research
2. Understand the statistical tools used to describe data
3. Identify measures of association and describe their utility and their limitations
4. Identify tests to determine mean differences and describe their utility and their limitations
5. Interpret published research findings

Program Outcomes

This course will provide foundational skills that will facilitate meeting Program Objective #3 in the undergraduate nursing program: Incorporate evidence-based practice interventions (e.g., information

systems, patient care technologies) as appropriate for managing the acute and chronic care of patients promoting health across the lifespan.

Required Materials

A textbook is not required for this course; however, students are responsible for reading the materials provided in each module.

Methods of Evaluation

Assignments	Total Points
Quizzes (6 quizzes, 10 points each)	60 points
Midterm Exam (20 points)	20 points
Final Exam (20 points)	20 points
Total Course Points: 100 points	

Grading Guides

The nursing faculty within the online RN-BS program believes that every student comes to learning environment with their own unique perspective of nursing and the world at large. The faculty believes that education is a vehicle to achieve personal transformation. To achieve transformation, students must engage with the educational content, consider diverse opinions, and through engagement and collaboration create new understanding—transformation. A brief description of the course assignments can be found below.

Weekly Assignment Schedule

The Learning Modules area in Blackboard contains one module folder for each week of the course. All assignments are due by 11:59 p.m. EST on Sunday evening. Please be mindful that faculty have one week from submission date to evaluate your submissions.

Description of Assignments

The Online RN-BSN Program has been designed to build upon prior life and work experiences. As adult learners, we often have heard of some of the terms and concepts that we will discuss this term. As we grow and develop, we have certain assumptions about concepts, though at times those assumptions are not founded on evidence.

Quizzes

This course has quizzes that are multiple-choice type questions. The quizzes from the first three weeks are based on the lectures and readings. In Module Four, a new format is introduced where all the quiz questions are based on a research article, covering the content discussed in that week. This method was chosen as interpreting articles is a skill you will need to have to be an informed consumer of research. You will have two practice quizzes that will allow you to get used to the format. It is recommended that you print out the articles, as you will need to access the article during the quiz. There will be specific guidelines in the modules of where to focus your attention.

Midterm Exam

This exam is multiple-choice. All questions on the exam must be completed individually, NOT jointly with other students. The exam will be submitted in the same manner that you used for the quizzes. There is

no time limit to take the exam once you open the link (other than submitting the exam prior to the deadline).

All exam questions will be based on an article by Eckert, 2012. Therefore, all references to particular tables or sections in the exam refer to this article. In this article, the author wanted to determine the relationship between health-related quality of life and physical activity in type 2 diabetics. You will focus on the following sections and tables:

- Introduction: Read this to understand the background of this article.
- Methods: Skim most of this, but pay particular attention to the Design section and the Statistical Analysis section.
- Results: Read carefully the Sample Characteristics section and the Correlations and Multiple Regressions section.
- Table 3: This is a correlation matrix (the same variables listed down the left side are listed across the top in the same order). The 1–6 across the top are the same variables as the first six columns (Age through DD). Note that abbreviations are defined and p-values are indicated in the footnote.
- Table 4: This is a series of multiple regression models that were performed, three regressions for each of 5 y variables. That which is being predicted (the y) is written in bold, and the x variables are listed below. B is the unstandardized beta, whereas β is the standardized beta (standardization accounts for the differing units of measure of x, β 's can be directly compared for their "weight" in the equation). The "F for change in R²" is related to the p-value; an F is calculated first before you get the p value. Just judge significance by what is starred; see footnote.

Final Exam

This final exam is multiple-choice. This exam requires that you refer to the four articles that are posted in Module Eight. It is recommended that you print out these articles. Even though you will have the questions and the resources well before the final exam is due, you are expected to work independently and to not discuss the exam with other students.

University Grading System

UC-COCE Undergraduate Grading System:		
Grade	Numerical Equivalent	Points
A	93-100	4.00
A-	90-92	3.67
B+	87-89	3.33
B	83-86	3.00
B-	80-82	2.67
C+	77-79	2.33
C	73-76	2.00
C-	70-72	1.67
D+	67-69	1.33

D	60-66	1.00
F	0-69	0.00
I	Incomplete	
IF	Incomplete/Failure*	
IP	In Progress (past end of term)	
W	Withdrawn	

*Incomplete and Incomplete/Failure: Any student requesting an “I” grade should see the Nursing Handbook.

Topical Outline

Module One:

Inferential statistics and the research process; sample versus population; statistical significance

Module Two:

Measures of central tendency and measures of variability

Module Three:

Quantifying associations using the correlation and simple regression

Module Four:

Quantifying associations using multiple regression

Module Five:

Midterm exam

Module Six:

Experimental research

Module Seven:

Statistical tests to determine differences between means

Module Eight:

Nonparametric statistics; final exam

In addition to the readings that are listed, there may be additional required resources within each module in Blackboard.

Module	Title	Readings	Course Objective	Evaluation
One	Introduction and Significance	Statistics Introduction	1, 5	Quiz
Two	Central Tendency and Variability	Basic Tools to Describe Data Central Tendency and Variability Equations Central Tendency and Variability Calculation Example	2, 3, 4	Quiz
Three	Correlation and Regression	Measures of Association Simple Regression Multiple Regression Correlation Sample Problem Correlation Calculation Example Regression Calculation Example Nordstrand et al. (2011)	2, 3, 4	Quiz
Four	Multiple Regression	Hancox et al. (2004) Montgomery et al. (2004) Cotter et al. (2010)	2, 3, 4	Practice Quizzes Quiz
Five	Midterm Exam	Eckert (2012)	1, 5	Midterm Exam
Six	Experimental Research	Experimental Research Tests for Differences Between Means Dale et al. (2000) Ahamed et al. (2007)	1, 2, 3, 5	Practice Quiz Quiz
Seven	Mean Differences	Faigenbaum (2002) Dao et al. (2010) Independent T-Test Calculation Example Dependent T-Test Calculation Example Critical Values of T	1, 2, 4, 5	Practice Quiz Quiz
Eight	Nonparametric Statistics and	Nonparametric Statistics	1, 5	Final Exam

	Final Exam	Zellner et al. (2007) Montgomery et al. (2004) Dale et al. (2000) Faigenbaum et al. (2002)		
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Bibliography

- Ahamed, A., MacDonald, H., Reed, K., Naylor, P., Liu-Ambrose, T., & McKay, H. (2007). School-based physical activity does not compromise children's academic performance. *Medicine & Science in Sports & Exercise*, 39(2), 371-376. doi: 10.1249/01.mss.0000241654.45500.8e Available from <http://www.medscape.com/viewarticle/551807>
- Cotter, K. A. & Lachman, M. E. (2010). No strain, no gain: Psychosocial predictors of physical activity across the adult lifespan. *Journal of Physical Activity and Health*, 7(5), 584-594. [Available from NIH Public Access]. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2972196/>
- Dale, D., Corbin, C. B., & Dale, K. (2000). Restricting opportunities to be active during school time: Do children compensate by increasing physical activity levels after school? *Research Quarterly for Exercise and Sport*, 71(3), 240-248. Pubmed 10999261
- Dao, T. K., Youssef, N. A., Gopaldas, R. R., Chu, D., Bakaeen, F., Wear, E., & Menefee, D. (2010). Autonomic cardiovascular dysregulation as a potential mechanism underlying depression and coronary artery bypass grafting surgery outcomes. *Journal of Cardiothoracic Surgery*, 5(36). <http://www.cardiothoracicsurgery.org/content/5/1/36>
- Eckert, K. (2012). Impact of physical activity and bodyweight on health-related quality of life in persons with type 2 diabetes. *Diabetes, Metabolic Syndrome, and Obesity: Targets and Therapy*, 5, 303-311. [Dove Press]. doi: 10.2147/DMSO.S34835 Available from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3430085/>
- Faigenbaum, A. D., Milliken, L. A., Loud, R. L., Burak, B. T., Doherty, C. L., & Westcott, W. L. (2002). Comparison of 1 and 2 days per week of strength training in children. *Research Quarterly for Exercise and Sport*, 73(4), 416-424. Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2465144/>
- Hancox, R. J., Milne, B. J., & Poulton, R. (2004). Association between child and adolescent television viewing and adult health: A longitudinal birth cohort study. *Lancet*, 364, 257-62. Available at <http://www.commercialalert.org/tvhancox.pdf>
- Montgomery, C., Reilly, J. J., Jackson, D. M., Kelly, L. A., Slater, C., Paton, J. Y., & Grant, S. (2004). Relation between physical activity and energy expenditure in a representative sample of young children. *American Journal of Clinical Nutrition*, 80, 591-596. Retrieved from <http://ajcn.nutrition.org/content/80/3/591.full.pdf>
- Nordstand, N., Gjevestad, E., Dinh, K. N., Hofso, D., Roislien, J., Salrvedt, E., Os, I., & Hjelmessaeth, J. (2011). The relationship between various measures of obesity and arterial stiffness in morbidly obese patients. *BMC Cardiovascular Disorders*, 11(7). <http://www.biomedcentral.com/1471-2261/11/7>
- ShapeFit. (2012). The Harris-Benedict formula. From Basal metabolic rate – Learn how to calculate & find your BMR. Retrieved from. <http://www.shapefit.com/basal-metabolic-rate.html>
- Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2005). *Research Methods in Physical Activity* (5th ed.). Champaign, IL: Human Kinetics.

Zellner, K., Boerst, C. J., & Tabb, W. (2007). Statistics used in current nursing research. Journal of Nursing Education, 46(2), 55-59. Retrieved from <http://dpt-stats-in-pt.wiki.uml.edu/file/view/Zellner+et+al+2007.pdf>

Attendance Policy

Failure to participate during the first week of the course (12:00 a.m. Monday through 11:59 p.m. Sunday) will result in automatic withdrawal. Participation must include posting activity within the discussion forum in addition to any other assignment requirement listed in the syllabus. Students who do not participate during the first week forfeit their rights to be reinstated into the course.

While online education classes are asynchronous, they are not correspondence- or self-paced. Students are expected to participate in their Blackboard course at least two separate days per week throughout the term.

Extended absences, defined as failure to post into the Blackboard classroom for more than five days, must be coordinated with the instructor. Students who fail to coordinate any such absence with the instructor, or who fail to withdraw from the course in accordance with the COCE official drop and withdrawal policy, will receive the grade that corresponds to the points earned up to the day participation stopped.

Southern New Hampshire University Policies

More information about SNHU nursing policies can be found at http://www.snhu.edu/files/pdfs/NSG_Student_Handbook.pdf

Academic Honesty Policy: Southern New Hampshire University requires all students to adhere to high standards of integrity in their academic work. Activities such as plagiarism and cheating are not condoned by the university. Students involved in such activities are subject to serious disciplinary action. Plagiarism is defined as the use, whether by paraphrase or direct quotation, of the published or unpublished work of another without full and clear acknowledgment. Cheating includes the giving or receiving of unauthorized assistance on quizzes, examinations, or written assignments from any source not approved by the instructor. Understand that in taking this course, your assignments may be submitted to Turnitin.com or other plagiarism-detection services and reviewed for textual similarity suggestive of plagiarism. All submitted papers are subsequently included as source material in the Turnitin.com database for the purpose of detecting plagiarism in other submitted work. Please review the Turnitin.com Usage Policy should you have any questions. For more about academic dishonesty, please refer to the undergraduate or graduate catalogs.

ADA/504 Compliance Statement: Southern New Hampshire University is committed to and concerned with meeting the needs of students challenged by physical, sensory, psychiatric and/or learning disabilities with regard to the Americans with Disabilities Act (ADA) and Section 504 of the 1973 Rehabilitation Act. At the beginning of each term, or as soon as you become aware of a disability, we encourage you to contact the Office of Disability Services to discuss accommodations for which you may be qualified.

For questions concerning support services, documentation guidelines, or general disability issues:

Office of Disability Services, Exeter Hall, Suite 59
Hyla Jaffe, Director
603.668.2211 ext.2386
h.jaffe@snhu.edu

For questions concerning disability-related compliance matters, grievance, or legal issues:

Ms. Jet Goldberg, ADA/504 Compliance Officer
Director of Wellness Center
603-645-9679
j.goldberg@snhu.edu

Technical Support: Support for technology and Blackboard software issues can be found at <http://www.snhu.edu/techsupport> or by dialing SNHU 24/7 Live Support at 1-877-708-2909.

Academic Assistance: Online students enrolled in undergraduate courses in the areas of math, writing, accounting, and statistics will have access to Smarthinking online tutoring:
<https://my.snhu.edu/offices/COCE/Tutoring/Pages/default.aspx>.

Library Resources Statement: In addition to the intellectual resources available onsite and online, <https://my.snhu.edu/Academics/Library/Pages/default.aspx>, Shapiro Library makes available group and one-on-one instruction in information literacy, enabling students to define and articulate what knowledge-based resources are relevant to their research interests. Library staff are available to assist students in effectively and efficiently accessing information from credible sources, to compare new knowledge with prior beliefs, and to consider the related ethical, legal, and socioeconomic issues that are inherent in scholarly investigation.

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SNHU College of Online and Continuing Education Withdrawal Policy

<https://www.snhu.edu/648.asp>

SNHU College of Online and Continuing Education Guide to Student Success

<https://my.snhu.edu/Resources/StudentHandbooks/Pages/default.aspx>

Blackboard Course Tools/Areas Overview

Your course will be delivered through Blackboard. Below are the most often used Blackboard tools and areas.

Tool/Area	Description	You Should...
Announcements	This area is used to post day-to-day course details such as the status of or directions for assignments and discussions.	Check the announcements on a regular basis, at least several times each week.
Course Information	The course syllabus, assignment guidelines and rubrics, technical support, Student Handbook, and advising information can be found here.	Check this area at the start of the class. It is recommended that the syllabus be downloaded for future reference.

Learning Modules	This area contains course content, including lectures, readings, resources, and assignments. This area may also contain a checklist summary of assignments for the module.	Check this area at the start of each module and throughout the module week to review course materials.
Discussion Board	This is one of the primary areas for discussion and collaboration in the class.	Participate and contribute on a regular basis. Refer to the Attendance Policy section for information.
Research/Writing	SNHU library and research information can be found here.	Check this area for links and information on different library-related resources.
My Instructor	Instructor information is located in this area.	Check this area to find out about your instructor's background and contact information.
My Grades	Assignment grades are located in this area.	Check this area to find out your grades for your course assignments.
Communication	The primary communication tool areas for the course are discussion forums and small group areas.	Limit the use of email for comments and questions of a personal or sensitive nature. All course-related questions should be posted on the discussion boards.