

FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—COURSE CHANGE REQUEST¹

UGPC APPROVAL _____
 UFS APPROVAL _____
 SCNS SUBMITTAL _____
 CONFIRMED _____
 BANNER POSTED _____
 CATALOG _____

DEPARTMENT: NURSING	COLLEGE: CHRISTINE E. LYNN COLLEGE OF NURSING
COURSE PREFIX AND NUMBER: NGR 7846	CURRENT COURSE TITLE: ESSENTIAL STATISTICAL METHODS FOR NURSING SCIENCE
CHANGE(S) ARE TO BE EFFECTIVE (LIST TERM): SPRING, 2015	_____ TERMINATE COURSE (LIST FINAL ACTIVE TERM):
CHANGE TITLE TO:	CHANGE PREREQUISITES/MINIMUM GRADES TO*:
CHANGE PREFIX FROM: TO:	OLD: 6000-LEVEL STATISTICS CLASS, PERMISSION FROM THE DEPARTMENT NEW: 6000-LEVEL STATISTICS CLASS AND PERMISSION FROM THE DEPARTMENT
CHANGE COURSE NO. FROM: TO:	
CHANGE CREDITS ² FROM: TO:	
CHANGE GRADING FROM: TO:	CHANGE COREQUISITES TO*:
CHANGE DESCRIPTION TO:	CHANGE REGISTRATION CONTROLS TO:
Attach syllabus for ANY changes to current course information.	
Should the requested change(s) cause this course to overlap any other FAU courses, please list them here.	Please consult and list departments that might be affected by the change(s) and attach comments. ³

Faculty contact, email and complete phone number:
 Joy Longo, jlongo5@fau.edu, 561-297-2457

Approved by: Department Chair: <u>Chusue Williams</u> College Curriculum Chair: <u>Jerry</u> College Dean: <u>Karen Edwards</u> UGPC Chair: <u>[Signature]</u> Graduate College Dean: <u>[Signature]</u> UFS President: _____ Provost: _____	Date: <u>8-19-2014</u> <u>8/19/14</u> <u>8-19-2014</u> <u>2/5/14</u> <u>9/4/14</u>	1. Syllabus must be attached; see guidelines for requirements: www.fau.edu/provost/files/course_syllabus.2011.pdf 2. Review Provost Memorandum: Definition of a Credit Hour www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf 3. Consent from affected departments (attach if necessary)
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Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

**FLORIDA ATLANTIC UNIVERSITY
CHRISTINE E. LYNN COLLEGE OF NURSING**

Fall 2014

COURSE NUMBER: NGR 7846

COURSE TITLE: Essential Statistical Methods for Nursing Science

COURSE FORMAT: Hybrid

CREDIT HOURS: 3 credits

COURSE SCHEDULE: Class meets Thursday from 6:00 pm to 8:50 pm
NU 209

PLACEMENT IN CURRICULUM: Fall semester of the first year

PREREQUISITE/S: 6000 Level Statistics class and permission from the department

FACULTY: David Newman Ph.D.
Assistant Professor, Statistician
Christine E Lynn College of Nursing Room 215 E
Office (561) 297-2670 Cell (330) 607-3799
dnewma14@fau.edu

OFFICE HOURS: Tuesday & Thursday from 1-4 PM and by appointment

COURSE DESCRIPTION: An interdisciplinary course focusing on advanced statistical concepts and research strategies for knowledge development in the discipline of nursing and health sciences. Advanced biostatistical analyses such as hierarchical linear modeling, logistic regression, survival analysis, repeated measures ANOVA, MANOVA, MANCOVA and structural equation modeling will be included.

COURSE OBJECTIVES: The course subjective based on Roach's work¹ serve as themes to organize the course objectives.

Upon completion of this course, the student will demonstrate evidence of:

Becoming Competent

1. Select appropriate statistical techniques congruent with research for advanced nursing practice.
2. Critically evaluate quantitative research articles for appropriate use of study design, methods, statistical analysis and conclusions.

Becoming Compassionate

3. Design a research study that integrates patient uniqueness with appropriate innovative statistical methods.

Demonstrating Comportment

4. Demonstrate caring behaviors in collaborative work on data-based projects with other students.
5. Describe interprofessional collaboration required to accomplish research studies.

Becoming Confident

6. Demonstrate essential statistical expertise, including use of t-tests, correlations, ANOVA, Multiple Linear Regression, Logistic Regression, and advanced multivariate techniques such as MANOVA, HLM and SEM.

Affirming Commitment

7. Facilitate the development and completion of research using the appropriate study design and statistical techniques.

¹Roach, M. S. (2002). *Caring, The human mode of being: A blueprint for the health professions* (2nd rev. ed). Ottawa, ON: CHA Press.

TEACHING/ LEARNING STRATEGIES:

Lecture/discussion
Application of class materials
Problem solving situations
Examples of critiques
Example research proposals
Example tests
Videotaped material
Internet assignments

Specific behavioral objectives given to students and tied directly to course goals and test items
Blackboard discussion

GRADING AND EVALUATION METHODS:

3 SPSS Assignments = 30 points of course grade (6%)

There will be three SPSS assignments covering the areas of writing advanced regression models, PCA, MANOVA, HLM, Logistic Regression, and Survival Analysis (Cox Regression)

2 Tests = 200 points of course grade (40%)

The two tests will focus on practical application of the material covered during the class.

Collaborative Group Project = 30 points of course grade (6%)

The collaborative group project is a simulated research project where students select a group based on similar interests. They then write a small purpose, problem and methods section, create a simulated data set, run the analysis, and write-up the results and conclusions. The goal is to align the purpose problem, research questions, and research design with the correct statistical models. Check the project rubric for the section to include in the project. There is no review of the literature except of justification of statistical techniques.

Presentation of Project = 200 points of course grade (40%)

All groups will give a presentation of their collaborative projects in a 15 minute conference format (probably PowerPoint). Question sessions from students and the professor will follow directly after the presentation.

Critique of Quantitative Study = 25 points of course grade(5%)

A critique of a quantitative research study will be completed. Each student has to find an appropriate peer reviewed journal article and report on the purpose, methods, statistical technique, design, and whether or not all aspects were aligned. Students will complete the Journal Critique Sheet in its entirety, score it, and report on the article's potential for acceptance as if the student were a reviewer.

Instructor & Group participation score = 15 points of course grade(3%)

Learning is a collaborative and interactive activity. Therefore, come to class prepared to participate. You are a vital aspect of the learning environment and students learn for other student's questions, comments and experiences. BE PREPARED TO SHARE

TOTAL = 500 Points (100%)

GRADING SCALE: A grade below C is not passing in the Nursing PhD Program.

93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
0-59	F

REQUIRED TEXTS:

Fields, A. (2009). *Discovering statistics using SPSS (4rd ed.)*. Thousands Oak, California Sage Publications ISBN: 978-1-4462-4918-5

Munro, B. H. (2004). *Statistical methods for health care research (5th ed)*. Philadelphia, PA: Lippincott Williams & Wilkins. ISBN: 9780781748407

RECOMMENDED TEXTS

Newman, I., Newman, C., Brown, R. & McNeeley, S. (2006). *Conceptual statistics for beginners (3rd Ed.)*. Lanham, MD: University Press of America, Inc. ISBN: 9780761833451

Techniques of Research. Newman. Video tape study guide (Will be up on Black Board)

TOPICAL OUTLINE

- Key principles of advanced statistics
- ANOVA and ANCOVA review
- Repeated Measures ANOVA and Regression review
- Advanced Regression and the General linear model
- Exploratory factor analysis: Principle Components Analysis (PCA)
- Logistic regression and Discriminant function analysis
- MANOVA
- Confirmatory factor analysis
- Path analysis and Structural equation modeling
- Introduction to Hierarchical linear modeling (HLM)
- HLM- Repeated measures and Growth Models
- HLM and Special Topics
- Nonparametric statistics

BIBLIOGRAPHY

See required and optional text requirements

also:

- Ary, D., Jacobs, L.C. & Razavieh, A. (2002). *Introduction to research in education*, 6th ed. Belmont, CA: Wadsworth/Thompson Learning. ISBN: 9780205510009
- Campbell, D.T. & Stanley, J. (1966). *Experimental and quasi experimental designs for research*. Boston, MA: Houghton Mifflin. ISBN: 0395307872
- Kerlinger, F.N. (1986). *Foundations of behavioral research*. 3rd ed, New York, NY: Holt, Rinehart and Winston. ISBN: 030854628
- McNeil, K., Newman, I., & Kelly, F.J. (1996). *Testing the research hypothesis Using The general linear model*: Carbondale, IL: Southern Illinois University Press. ISBN: 9780809320196
- Miller, D.K. (2001). *Measurement by the physical educator: Why and how* (4th Edition). Boston, MA: WCB/ McGraw-Hill. ISBN: 9780072489217
- Newman, I. & Benz, C.R. (1998). *Qualitative-quantitative research methods: Exploring the interactive continuum*: Carbondale, IL: Southern Illinois University Press. ISBN: 9780809321506
- Newman, I. , Benz, C., Weis, D., & McNeil, K. (1997) *Theses and Dissertation: A Guide to Writing in the Social and Physical Sciences*. Lanham, MD: University Press of America. ISBN: 9780761808152
- Newman, I., & Newman, C., Brown, R., McNeely, S. (2005). *Conceptual statistics for beginners*. (3rd Edition). Lanham, MD: University Press of America. ISBN: 9780761833451
- Pedhazur, E.J and Schmelkin, L.P. (1991) *Measurement design and analysis: An Integrated approach*. Hillsdale, NJ: Lawrence Erlbaum Associates Inc. Publishers. ISBN: 9780805810639
- Raudenbush, S. W. & Bryk, A.S., (2002) *Hierarchical Linear Models: Application and data analysis methods* (2nd ed.). Newbury Park, CA: Sage. ISBN: 9780761919049
- Wiersma, W., Jurs, S. (2009). *Research methods in education: An introduction*. 9th ed. Needham Heights, MA: Pearson. ISBN: 9780205581924

COURSE POLICIES AND GUIDELINES

1. **Attendance:**

Absence from class: Although situations occasionally cause one to miss class, greater than 4 absences will result in the lowering of one letter grade unless already cleared with the professor.

Habitual lateness will not be tolerated since it is distracting to other students and will also result in the lowering of a letter grade unless cleared with the professor.

Responsibility for missed content rest with the student

2. **Exams, Quizzes**

Presence for Scheduled Examinations is required unless cleared with the professor.

Makeup exams are possible if there are prior arrangements with the professor. If you receive less than an 80% on any exam you are required to take a makeup exam. Anyone is allowed to take a makeup exam at any time regardless of their grade, but the last grade is the one that is recorded

3. **Assignments:**

All assignments are to be submitted by the due date on the Course Schedule.

4. Use of Electronic and Personal Communication Devices in the classroom can be disruptive. Therefore, please turn them to silent. Thank You

All course requirements and objectives must be met in order to earn a passing grade.

COLLEGE OF NURSING AND UNIVERSITY POLICIES:

Policies below may be found in:

a). The faculty reserves the right to make changes in course content and requirements.

b). The Christine E. Lynn College of Nursing Graduate Handbook located at:
<http://nursing.fau.edu/index.php?main=3&nav=457>

c). Florida Atlantic University's Academic Policies and Regulations
<http://www.fau.edu/academic/registrar/catalogRevs/academics.php>
and <http://www.fau.edu/regulations>

CODE OF ACADEMIC INTEGRITY

The University policy regarding academic integrity is enforced in this course. Students at Florida Atlantic University are expected to maintain the highest ethical standards. Dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see:

http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

The College of Nursing regards adherence to the Code of Academic Integrity as a professional competency and an expectation of all students. **ANY** act of dishonesty that violates the code of academic integrity and misrepresents your efforts or ability is grounds for immediate failure of the course.

DISABILITY STATEMENT:

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton – SU 133 (561-297-3880), in Davie – MOD 1 (954-236-1222), in Jupiter – SR 117 (561-799-8585) or at the Treasure Coast – CO 128 (772-873-3305), and follow all OSD procedures.

INCOMPLETE POLICY:

The Incomplete Grade Policy is enforced. A student who registers for a course but fails to complete the course requirements, without dropping the course, will normally receive a grade of “F” from the course instructor. A student who is passing a course but has not completed all the required work because of exceptional circumstances may, with the approval of the instructor, temporarily receive a grade of “I” (incomplete). This must be changed to a grade other than “I” within a specified time frame, not to exceed one calendar year from the end of the semester during which the course was taken.

ATTENDANCE POLICY:

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of nonattendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-approved activities. Examples of University approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities.

It is the student's responsibility to give the instructor notice prior to any anticipated absence and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

RELIGIOUS ACCOMMODATION

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance, and the scheduling of examinations and work assignments. Students who wish to be excused from coursework, class activities, or examinations must notify the instructor in advance of their intention to participate in religious observation and request an excused absence. The instructor will provide a reasonable opportunity to make up such excused absences. Any student who feels aggrieved regarding religious accommodations may present a grievance to the director of Equal Opportunity Programs. Any such grievances will follow Florida Atlantic University's established grievance procedure regarding alleged discrimination.

USE OF STUDENT COURSE MATERIAL

The Christine E. Lynn College of Nursing may use students' course-related materials for legitimate institutional purposes, such as accreditation, university review process, or state board of nursing review process, etc. In such cases, materials will be used within the college and university.

COURSE SCHEDULE:

Introduction- Explain projects, Internet, Critique, Project, Grading)

Session #1 Aug 29th

- Pretest and questionnaire
- Introduction to Stats
- Review Statistics Munro Ch 1-7
- Chapters 1-5 9, 10 (15) (Field)
- Develop questionnaire
- SPSS
- Selection of Research topic and start developing Chapter 1
 - Intro
 - Purpose
 - Problem
 - Research Questions
 - Delimitations
 - Operational Definitions
 - Summary

Session #2 Sep 12th

- Chapters 8-9 (Munro)
- Chapters 11-13 (Field)
- SPSS
- Work on Chapter 1

Session #3 Sep 19

- Chapters 9-10 (Munro)
- Chapters 11-13, 16 (Field)
- SPSS
- Work on Chapter 1
- SPSS Assignment 1

Session #4 Sep 26

- Group work Chapter 1 and Start work on Chapter 3

Session #5 Oct 3

- Chapters 11,14 (Munro)
- Chapters 7 & 8 (Field)
- SPSS
- Research Critique 1
- Work on Chapter 3
 - Intro
 - Research Design
 - Derivations of General Research Hypotheses and Specifics
 - Research Hypotheses
 - General Research hypotheses
 - Specific Research hypotheses
 - Participants
 - Sampling Procedures
 - Instruments
 - Variable Lists
 - Data Collection
 - Statistical Treatment
 - Summary

Session #6 Oct 10

- Chapters 14 (Munro) + McNeil, Newman and Kelly 2006
- Chapters 8 & 10 (Field)
- SPSS
- SPSS Assignment 2
- Work on Chapter 3

Session #7 Oct 17

- Chapters 14 12-13 (Munro)
- Chapters 8 (Field)
- SPSS
- Work on Chapter 3

Session #8 Oct 24

- Chapters 15 (Munro) PCA
- Chapters (16) & 17 (Field) EFA/ PCA & MANOVA SPSS
- Work on Chapter 4

- Demographics
- Descriptive Results
- Results
 - Tables
- Summary

Session #9 Oct 31

- Chapters 16-17 (Munro) Introduction to Path Analysis and SEM
- SPSS
- Work on Chapter 4

Session #10 Nov 7

- Chapters 16-17 (Munro) SEM Continued
- SPSS
- Work on Chapter 4
- Research Critique 2

Session #11 Nov 14

- Intro to HLM (Raundenbush)
- Chapter 19 (Field)
- SPSS and HLM 7.0
- Work on Chapter 5
 - Summary of the Study
 - Conclusions
 - Limitations
 - Implications
 - Suggestions for Future Research
 - Summary

Session #12 Nov 21

- HLM Repeated Measures/ Growth Models (Raundenbush)
- SPSS and HLM 7.0
- In-class HLM Project (SPSS Assignment 3)
- Work on Chapter 5

Session #13 Nov 28 Thanksgiving

- HLM/ Other Special Topics (Raundenbush)
- SPSS and HLM 7.0
- Review Project and Work on Chapter presentation

Session #14 Dec 5 Presentations



CHRISTINE E. LYNN COLLEGE OF NURSING

STATEMENT OF PHILOSOPHY

Nursing is a discipline of knowledge and professional practice grounded in caring. Nursing makes a unique contribution to society by nurturing the wholeness of persons and environment in caring. Caring in nursing is an intentional mutual human process in which the nurse artistically responds with authentic presence to calls from persons to enhance well-being. Nursing occurs in nursing situations: co-created lived experiences in which the caring between nurses and persons enhance well-being. Nursing is both science and art. Nursing science is the evolving body of distinctive nursing knowledge developed through systematic inquiry and research. The art of nursing is the creative use of nursing knowledge in practice. Knowledge development and practice in nursing require the complex integration of multiple patterns of knowing. Nurses collaborate and lead interprofessional research and practice to support the health and well-being of persons inextricably connected within a diverse global society.

Persons as participant in the co-created nursing situation, refers to individual, families or communities. Person is unique and irreducible, dynamically interconnected with others and the environment in caring relationships. The nature of being human is to be caring. Humans choose values that give meaning to living and enhance wellbeing. Well-being is creating and living the meaning of life. Persons are nurtured in their wholeness and well-being through caring relationships.

Beliefs about learning and environments that foster learning are grounded in our view of person, the nature of nursing and nursing knowledge and the mission of the University. Learning involves the lifelong creation of understanding through the integration of knowledge within a context of value and meaning. A supportive environment for learning is a caring environment. A caring environment is one in which all aspects of the person are respected, nurtured and celebrated. The learning environment supports faculty-student relationships that honor and value the contributions of all and the shared learning and growth.

The above fundamental beliefs concerning Nursing, Person and Learning express our values and guides the actions of Faculty as they pursue the missions of teaching, research/scholarship and service shared by the Christine E. Lynn College of Nursing and Florida Atlantic University.

'revised April, 2012.