UNIVERSITY OF FLORIDA

COLLEGE OF NURSING

COURSE SYLLABUS

Spring/2021

COURSE NUMBER NGR 6845

COURSE TITLE Applied Statistical Analysis II

CREDITS 3

# PLACEMENT PhD Program

PREREQUISITE NGR 6840 Applied Statistical Analysis I

# FACULTY Michael Weaver RN PhD FAAN

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# COURSE DESCRIPTION The purpose of this course is to provide the student with an opportunity to analyze and apply advanced multivariate statistical procedures. Emphasis is on the utilization and interpretation of advanced multivariate procedures. An additional emphasis will be on critiquing data analysis in current research articles. The focus is on understanding and applying advanced multivariate statistical procedures.

COURSE OBJECTIVES Upon completion of this course, the student will be able to:

1. Apply advanced multivariate procedures for statistical analysis, data reduction, and modeling to selected research questions.
2. Develop an advanced appropriate statistical design and analysis plan for selected questions.
3. Utilize selected computer programs (SPSS and at least one other) to analyze data.
4. Critique data analysis and interpretation of results in current research articles.

COURSE SCHEDULE

Section Day Time Room

11AH Tuesday 8:30-11:30am G112

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

* + - You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
    - This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
    - Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
    - Follow your instructor’s guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
    - If you are experiencing COVID-19 symptoms ([Click here for guidance from the CDC on symptoms of coronavirus](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html)), please use the UF Health screening system and follow the instructions on whether you are able to attend class. [Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms](https://coronavirus.ufhealth.org/screen-test-protect/covid-19-exposure-and-symptoms-who-do-i-call-if/).
      * Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

E-Learning in Canvas is the course management system that you will use for this course. E-Learning in Canvas is accessed by using your Gatorlink account name and password at <http://elearning.ufl.edu/>. There are several tutorials and student help links on the E-Learning login site. If you have technical questions call the UF Computer Help Desk at 352-392-HELP or send email to [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

It is important that you regularly check your Gatorlink account email for College and University wide information and the course E-Learning site for announcements and notifications. Course websites are generally made available on the Friday before the first day of classes.

TOPICAL OUTLINE

1. Logistic regression
2. Path analysis with causal modeling
3. Factor analysis
4. Repeated measures
5. Multi-dependent variable analysis (MANOVA)
6. Data reduction (reliability analysis; principle components analysis/factor analysis)

# TEACHING METHODS

Lectures, readings, computer exercises, and class discussion.

# LEARNING ACTIVITIES

1. Data analysis with statistical packages for statistical techniques
2. Interpretation of findings from analysis
3. Critique of data analysis and interpretation of results in articles reporting research findings

CLASS ATTENDANCE AND MAKEUP POLICY

Collaborative learning is an essential component of this course; therefore, engagement is expected with each activity and assignment. Advanced notice of absence is expected. In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., professional conferences **with advanced notice**), military obligation, severe weather conditions, religious holidays, and participation in official university activities. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) are excused. Makeup assignments for excused absences will be negotiated with the instructor. **If at all possible**, the course instructor must be notified in advance if an exam is missed due to an extenuating circumstance. If no notice is given or without prior approval of an absence for a reason listed above, a grade of zero will be assigned. Students may not opt out of any exams.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

# EVALUATION METHODS/COURSE GRADE CALCULATION

• Exercises: (each module is 5%) 35%

• 3 Exams (15%, 25%, 20%) 60%

• Bare Bones Research Proposal: 5%

100%

MAKE UP POLICY

If late submission is unavoidable, notify the professor **prior to** the scheduled due date/time. **A grade penalty of 10 percentage points per day will be assigned for late assignments unless prior approval is obtained**. **No work will be accepted 2 days after the due date**. Exams will not be accepted late, and make-up exams are not available.

GRADING SCALE/QUALITY POINTS

A 95-100 (4.0) C 74-79\* (2.0)

A- 93-94 (3.67) C- 72-73 (1.67)

B+ 91- 92 (3.33) D+ 70-71 (1.33)

B 84-90 (3.0) D 64-69 (1.0)

B- 82-83 (2.67) D- 62-63 (0.67)

C+ 80-81 (2.33) E 61 or below (0.0)

\* 74 is the minimal passing grade

For more information on grades and grading policies, please refer to University’s grading policies: <https://catalog.ufl.edu/graduate/regulations/>.

COURSE EVALUATION

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

ACCOMMODATIONS DUE TO DISABILITY

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://disability.ufl.edu/> ) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

PROFESSIONAL BEHAVIOR

The College of Nursing expects all Nursing students to be professional in their interactions with patients, colleagues, faculty, and staff and to exhibit caring and compassionate attitudes. These and other qualities will be evaluated during patient contacts and in other relevant settings by both faculty and peers. Behavior of a Nursing student reflects on the student's individual’s ability to become a competent professional Nurse. Attitudes or behaviors inconsistent with compassionate care; refusal by, or inability of, the student to participate constructively in learning or patient care; derogatory attitudes or inappropriate behaviors directed at patients, peers, faculty or staff; misuse of written or electronic patient records (e.g., accession of patient information without valid reason); substance abuse; failure to disclose pertinent information on a criminal background check; or other unprofessional conduct can be grounds for disciplinary measures including dismissal.

***As students in the health professions at UF Health, you are expected to promote safety and a culture of care and concern for each other and for patients. Across our academic health center’s missions of research, teaching and patient care, nursing students must lead by example and take individual responsibility for modeling healthy habits and behaviors to minimize the spread of COVID-19. Failure to comply with the established public health measures, both on and off campus, is considered a serious breach of professional conduct***

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT

Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> . Students are required to provide their own privacy screen for all examination’s administered to student laptops. No wireless keyboards or wireless mouse/tracking device will be permitted during examinations.

University and College of Nursing Policies

Please see the College of Nursing website for student policies (<http://students.nursing.ufl.edu/currently-enrolled/student-policies-and-handbooks/>) and a full explanation of each of the university policies – (<http://students.nursing.ufl.edu/currently-enrolled/course-syllabi/course-policies>)

UF Grading Policy

Religious Holidays

Counseling and Mental Health Services

Student Handbook

Faculty Evaluations

Student Use of Social Media

# REQUIRED TEXTBOOKS

\* Pituch K & Stevens J (2016). Applied multivariate statistics for the social sciences. Analyses with SAS and IBM’s SPSS (6th ed.). New York: Routledge.

Required Software

\* The course will use SAS and MPLUS software packages; however, students are welcome to use other packages if they prefer. While questions about SAS and MPLUS (and some SPSS) can generally be answered off the top of my head, I cannot guarantee help with other packages.

SAS, MPLUS, and other statistical software packages are accessible for free using UF APPS: <http://info.apps.ufl.edu/> . There is a free (but limited in the size of models handled) Student version of MPLUS available for download from <http://www.statmodel.com>. Information about obtaining SAS and other statistical software for installation on your computer is available here: <http://helpdesk.ufl.edu/software-services/>

WEEKLY CLASS SCHEDULE

|  |  |  |
| --- | --- | --- |
| DATE | TOPIC/EVALUATION | ASSIGNMENTS/READING |
|  |  |  |
| Wk 1  01/12 | Module 1: Introduction, Data screening and management, Matrix Algebra | MEDIASITE Recording: Using SAS  Text Chs. 1 & 2 |
| Wk 2  01/19 | Module 2: MANOVA | MEDIASITE Recording for Module 2 & Text Chs. 4, 5, 6, 7, & 12 |
| Wk 3  01/26 | Module 2: MANOVA – continued  Exam 1 (through material on 2-group MANOVA) |  |
| Wk 4  02/02 | Module 3: Multivariate Multiple Regression & Canonical Correlation | Text Chs. 3 & 15 |
| Wk 5  02/09 | Module 3: Multivariate Multiple Regression & Canonical Correlation - Continued |  |
| Wk 6  02/16 | Module 4: Multivariate General Linear Model / MANCOVA | Text Ch. 8 |
| Wk 7  02/23 | Module 4: Multivariate General Linear Model / MANCOVA - continued |  |
| Wk 8  03/02 | Module 5: Classification and Description (Discriminant Analysis & Logistic Regression);  Exam 2 | Text Chs. 10 & 11 |
| Wk 9  03/09 | Module 5: Classification and Description (Discriminant Analysis & Logistic Regression) - continued |  |
| Wk 10  03/16 | Module 6: Principal Components Analysis & Exploratory Factor Analysis | MEDIASITE Recording:  Using MPLUS  Text Ch. 9 |
| Wk 11  03/23 | Module 6: Exploratory Factor Analysis - continued |  |
| Wk 12  03/30 | Module 7: Structural Equation Models | Text Ch. 16 |
| Wk 13  04/06 | Module 7: Structural Equation Models - Continued |  |
| Wk 14  04/13 | Module 7: Structural Equation Models - Continued |  |
| Wk 15  04/20 | Review & Wrap-up – Last class  Exam 3; Barebones Research Proposal Due |  |

Approved: Academic Affairs Committee: 10/97; 07/03; 06/06; 10/08

Faculty: 12/97; 07/03; 06/06; 11/08

UF Curriculum: 06/99