

NGR XXXX: Quantitative Research Methods

Semester Year

Online

Faculty Contact Information: (Do not include in the file syllabus)

Credit Hours and Prerequisites

Credit Hours: 3

Prerequisites: NGR 6115

Co-Requisite: None

Meeting Time: (Do not include in the file syllabus)

Meeting Location: (Do not include in the file syllabus)

Course Description

This course focuses on quantitative research methods used in nursing and health research in general. This course is intended to enhance knowledge and skills required to develop a quantitative research proposal and prepare independent quantitative investigators to generate, translate and communicate new nursing knowledge. It conveys opportunities for emerging nurse scientists and other healthcare professional doctoral students to plan for the steps necessary for scientific inquiry using quantitative research methods. Identification of challenges in the design, conduct, analysis and reporting of quantitative research and ways to overcome them will be addressed. In line with the *American Association of Colleges of Nursing's* vision on pathways to excellence, this course will contribute to the development of independence in scientific or scholarly pursuits by preparing future nurse scientists and leaders within institutions of higher education and outside of academia.

Course Objectives

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

1. Analyze current trends in nursing research and debate on the relationship between theory, research, and clinical practice in the context of his/her doctoral studies
2. Analyze, critique, and interpret current evidence relevant for the research question
3. Evaluate the strengths and weaknesses of quantitative research designs according to their purpose and estimate challenges for the design, conduct and analysis of quantitative research, including threats to validity, strategies, and how they relate to interpretation of results
4. Formulate a research question and articulate its linkage with quantitative methodology
5. Select appropriate data collection methods, including complying with validity and reliability of data collection instruments, and plan for accurate data analyses methods
6. Propose and create a quantitative research proposal
7. Assess barriers and facilitators for translating quantitative research evidence into practice and policy, and propose strategies

Course Materials

Required Textbook:

Polit, D.F., & Beck, C.T. (2020). *Nursing research: Generating and assessing evidence for nursing practice* (11th ed.). Philadelphia, PA: Lippincott, Williams, and Wilkins. ISBN/ISSN: 9781975110642

Recommended Text:

American Psychological Association. (2020). *Publication Manual of the American Psychological Association*, (7th ed.). Washington, DC: American Psychological Association. ISBN: 978-1-4338-3216-1

Other Required Reading:

TBD and updated regularly. Will include articles for weekly topics and article critiques.

Effect sizes: <https://www.frontiersin.org/articles/10.3389/fpsyg.2013.00863/full>

Suggested Websites:

Cochrane Collaboration : <https://www.cochrane.org/>

CONSORT : <https://www.consort-statement.org/>

National Institutes of Health: <https://www.nih.gov/>

National Institutes of Nursing Research: <https://www.ninr.nih.gov/>

NIH Office of Human Subjects: <https://irbo.nih.gov/confluence/>

NIH information for participants: <https://www.nih.gov/health-information/nih-clinical-research-trials-you>

NIH Reporter: <https://reporter.nih.gov/>

Standard in Research, Ethics, Compliance, and Safety Training: <https://about.citiprogram.org/>

A glossary of certain terms used in research: <http://www.nlm.nih.gov/nichsr/hta101/ta101014.html>

Sample size calculator: <http://www.raosoft.com/samplesize.html>

Overview of some statistical tests: <http://www.bmj.com/collections/statsbk/index.dtl>

Effect size calculator: <https://www.socscistatistics.com/effectsize/default3.aspx>

Overview of research methods in psychology: <https://www.simplypsychology.org/research-methods.html>

Overview of statistics in psychology: <https://www.simplypsychology.org/statistics.html>

Questionnaire design. Pew Research Center: <https://www.pewresearch.org/our-methods/u-s-surveys/writing-survey-questions/>

Survey Research, Harvard University: <https://psr.iq.harvard.edu/book/questionnaire-design-tip-sheet>

Questionnaire design and levels of measurement. Research Methods Knowledge Base. Survey Research.

William M.K. Trochim: www.socialresearchmethods.net/kb/surey.php

Database of international clinical studies: <https://clinicaltrials.gov/>

Student Responsibilities

- Students should log on to Canvas at least every other day to check for course updates.
- Students are expected to keep up with the class, engage with the course material, and submit assignments by the due dates.
- Assignments are expected to be products of individual students per the FSU Academic Honor Policy Links to an external site. Students should not discuss any of the questions with each other before or during the actual assignments or activities without instructor approval.
- To receive maximum points for questions, students need to follow the instructions carefully, follow word limits as instructed, and use spell and grammar checking.
- To be successful in this course, students need to complete all required assignments and tests.

Course Content:

Instructional strategies may include reading guides, lecture/discussion, audiovisuals, interactive case studies, and critical reasoning exercises.

Module 1: Foundations of nursing research

Module 2: Conceptualization of a research study

Module 3: Quantitative designs for nursing research

Module 4: Measurement and data collection

Module 5: Analysis of research data

Module 6: Communicating research

Module 7: Utilizing research results

Course Calendar

Week	Date	Topic/Content
Week 1		Introduction to nursing research
		Past, current, and future trends, key concepts, and steps of inquiry
Week 2		Theories, research, and practice
		Research problems, research questions and hypotheses
Week 3		Literature review
		Appraisal and synthesis, systematic review, and meta-analysis
Week 4		Ethics in nursing research
		Recruitment, informed consent, retention, and safety monitoring
Week 5		Quantitative research designs—Part 1
		Descriptive, correlational
Week 6		Quantitative research designs—Part 2
		Experiment, quasi experiment, and causality
Week 7		Rigor, reproducibility, and generalizability in quantitative research
		Sampling, protocol adherence, randomization, blinding
Week 8		Data collection
		Procedures, measurement, validity, and reliability
Week 9		Development of questionnaires and surveys
		Principles and process
Week 10		Data analysis and interpretation—Part 1
		Common analyses
Week 11		Data analysis and interpretation—Part 2
		Effects sizes and clinical significance
Week 12		Intervention research
		Principles, steps, challenges, and strategies
Week 13		Reporting research findings
		Scholarly articles, peer-review process, and authorship
Week 14		Writing proposals
		General recommendations
Week 15		Translating nursing research into policy and practice
		Barriers and facilitators
Week 16		Debrief and course evaluation

Calendar Subject to Change

Grading Policy

Course Grades are determined by:

Assignment:	Percentage/points of grade
Proposal part 1: title; introduction; literature review; statement of purpose; theoretical framework; research question; and study hypothesis	25%
Final proposal: research design; data collection tools and procedures; sampling strategy; ethics; statistical analyses; and contribution, potential pitfalls and strategies and conclusion (includes revised part 1)	40%
Article critiques (online participation)	15%
Presentation of research proposal	20%

Grading Scheme

Grade	Range
A	90 -100%
B	80-89.9%
C	70-79.9%
D	60-69.9
F	<60

Course requirements

All assignments should follow APA guidelines (7th edition).

1. Research proposal

The Research Proposal is the main assignment for this course and integrates what you have learned about quantitative research methods. The goals of this assignment are for you to a) analyze the quantitative research process; b) plan for project development; and c) prepare for your doctoral research project.

This assignment is divided in two parts. The first part focuses on background and study objectives and should include: title; introduction; literature review; statement of purpose; theoretical framework; research question; and study hypothesis. It should be no more than 7 pages (double spaced) excluding title page and references. At least 15 studies are expected in your literature review. The final proposal will include the revised first part based on feedback you receive and the following sections: research design; data collection tools and procedures; sampling strategy; ethics; statistical analyses; and contribution, potential pitfalls and strategies, and conclusion. The final proposal should be no more than 15 pages (double spaced), excluding title page and references. See rubrics below.

Research proposal (part 1) rubric:

Section	Content	Possible Points	Draft grade
Introduction	<ul style="list-style-type: none">Introduces the topic, creates interest, provides necessary background information.Clearly articulates what is the problem, what we know about it and why it should be addressed.Uses relevant and recent citations to	15	

	<ul style="list-style-type: none"> support problem statement Provides definitions of concepts when relevant. Uses statistics to underline the scope of the problem. The relevance for nursing is justified. Includes a clear purpose statement that logically flows. 		
Literature review	<ul style="list-style-type: none"> Integrates the most significant findings from the literature to present what is well understood, what is less understood, and what questions remain. Review of the literature describes the outcome variables as it relates to the topic of interest. Literature review reflects conceptualization of the clinical problem and outcome variables from appropriate sources. 	30	
Theoretical framework	<ul style="list-style-type: none"> Present the model/theory (single or fusion of multiple) selected to guide your doctoral project including its origins and precepts. Explain how the model and its propositions apply to your doctoral project. The model should help describe the clinical problem, the intervention approach (if applicable), the outcome variables and the relationships among variables. 	15	
Research questions/ study hypotheses	<ul style="list-style-type: none"> Outlines precisely various aspects of the study, including the population and variables to be studied and the problem the study addresses Narrows down a broad topic of interest into a specific area of study Logically flows based on the literature review conclusions Highlights the focus of the study: descriptive, comparative, relationships 	15	
Conclusion	<ul style="list-style-type: none"> Briefly summarizes the paper. Does not introduce new ideas. Does not use citations in this section. 	5	
Writing skills	<ul style="list-style-type: none"> Writing is scientific, clear, and succinct. Logical sequencing of ideas with smooth and clear transitions between paragraphs. All paragraphs are less than one page in length. A summary is provided after each major section (literature review, framework, methods) No errors in spelling, grammar (subject-verb agreement, use of commas, etc.) or word usage. 	10	
APA Format	<ul style="list-style-type: none"> Adherence to APA format (title page, abstract, levels of headings, citations in text, references) Direct quotations from sources are used minimally and appropriately cited 7 pages +/- 10% 	10	

	<ul style="list-style-type: none"> Reference list is in APA format. 		
TOTAL		100	

Final research proposal rubric:

Section	Content	Possible Points	Final Grade
Introduction	<ul style="list-style-type: none"> Introduces the topic, creates interest, provides necessary background information. Clearly articulates what is the problem, what we know about it and why it should be addressed. Uses relevant and recent citations to support problem statement Provides definitions of concepts when relevant. Uses statistics to underline the scope of the problem. The relevance for nursing is justified. Includes a clear purpose statement that logically flows. 	15	
Literature review	<ul style="list-style-type: none"> Integrates the most significant findings from the literature to present what is well understood, what is less understood, and what questions remain. Review of the literature describes the outcome variables as it relates to the topic of interest. Literature review reflects conceptualization of the clinical problem and outcome variables from appropriate sources. 	40	
Theoretical framework	<ul style="list-style-type: none"> Presents the model/theory (single or fusion of multiple) selected to guide your doctoral project including its origins and precepts. Explains how the model and its propositions apply to your doctoral project. The model should help describe the clinical problem, the intervention approach (if applicable), the outcome variables and the relationships among variables. Includes a figure 	20	
Research questions/ study hypotheses	<ul style="list-style-type: none"> Outlines precisely various aspects of the study, including the population and variables to be studied and the problem the study addresses Narrows down a broad topic of interest into a specific area of study Logically flows based on the literature review conclusions Highlights the focus of the study: descriptive, comparative, relationships 	15	

Methods	<ul style="list-style-type: none"> • Research design is explicitly presented and justified, in line with questions/hypotheses • Sampling is described and in line with design • Data collection tools are relevant, valid, and reliable, and procedures are described • Ethical considerations are included and pertinent • Statistical analyses are presented and address the questions/hypotheses • Contribution, potential pitfalls, and strategies are discussed and reflect a critical analysis of significance, potential biases, barriers, and facilitators 	50	
Conclusion	<ul style="list-style-type: none"> • Briefly summarizes the paper. • Does not introduce new ideas. • Does not use citations in this section. 	5	
Writing skills	<ul style="list-style-type: none"> • Writing is scientific, clear, and succinct. • Logical sequencing of ideas with smooth transitions between paragraphs. • All paragraphs are less than one page in length. • A summary is provided after each major section (literature review, framework, methods) • No errors in spelling, grammar (subject-verb agreement, use of commas, etc.) or word usage. 	20	
APA Format	<ul style="list-style-type: none"> • Adherence to APA format (title page, abstract, levels of headings, citations in text, references) • Direct quotations from sources are used minimally and appropriately cited • 15 pages +/- 10% • Reference list is in APA format. 	20	
Draft to final paper	<ul style="list-style-type: none"> • Demonstrates ability to revise paper using comments from instructor on the first draft. 	15	
TOTAL		200	

2. Research proposal presentation

An important part of scholarship is communicating evidence and your research. You will present your research proposal based on the sections of the paper. The presentation should be no more than 15 minutes. Presentations will take place during a synchronous meeting. More details will be provided on the course Canvas site.

Criteria	1= completely disagree; 5=completely agree				
1. The student clearly recognizes and defines a relevant phenomenon and research problem.	1	2	3	4	5
2. The student provides a focused, concise, and accurate review of the literature.	1	2	3	4	5
3. The student proposes a clear aim and research questions or hypotheses.	1	2	3	4	5

4. The student determines the sample and appropriate design to investigate the question or hypothesis.	1	2	3	4	5
5. The student discusses proposed data collection methods and type of analysis.	1	2	3	4	5
6. The student debates on potential barriers and facilitators to the study.	1	2	3	4	5
7. The student analyzes and clearly outlines the study's contribution to nursing knowledge.	1	2	3	4	5
8. The presentation is clear and logical and reflects a doctoral level of critical thinking.	1	2	3	4	5
9. The student argues and responds clearly to questions.	1	2	3	4	5
10. The presentation is supported by relevant and current sources (APA format).	1	2	3	4	5

3. Critical appraisal of studies

Participation in discussion is an important part of this course. A graduate nursing student should be able to demonstrate evidence of reflective thought and critical analysis while discussing a topic and the ability to support a position based on evidence from the literature. In addition, the ability to engage in discussion with respectful consideration of others' opinions is expected. Be sure reference citations are consistent with APA format. Most of the time, students will critique studies. Studies will be selected based on a specific topic related to quantitative studies (e.g., experimental design, sampling, data collection, ethical issues). Students will use the Johns Hopkins tool (Appendix E) that is provided on Canvas and presented in their textbook when applicable.

The Discussion Board Grading Rubric below details the criteria that will be used to grade DB postings and responses the assigned week (postings after the assigned deadline will not be accepted). Postings to the discussion board are graded using the scoring rubric outlined below. Your final grade for participation in the discussion forum will reflect the average of the grades for your participation in each of the discussion forums.

	Exceptional	Good	Needs Improvement	Inadequate
	A (3)	B (2)	C (1)	D (0.5)
Timeliness of Responses	Postings are made in a timely fashion, giving other students ample opportunity to respond.	Postings are made within the assigned time, giving others limited opportunity to respond.	Postings are made within the assigned time but lacks opportunity for others to respond.	Postings are not made within the assigned time, if at all, keeping other students from reading and responding.
Assigned discussion questions	Questions are completely answered with considerable detail; readings and other resource materials are used to support comments.	Questions are completely answered; some reference to readings and other resource materials is included in comments.	Questions are partially answered; little if any reference is made to readings or other resources.	Assigned discussion questions are partially answered; readings and resources are not mentioned
Critical Thinking	Responses to assigned discussion questions reflect critical thinking and pose new possibilities or opinions not	Responses to assigned discussion questions reflect critical thinking and makes connections to previous course content and real-life	Makes connections to previous or current content or to real-life situations but the connections are unclear, not firmly established, or are not obvious.	Contributes no novel ideas, connections, new ideas or real-world applications; limits responses to "I agree with

	previously voiced.	situations		..." statements.
Response to peers	Response includes critique and analysis of the point mentioned and how own opinion supports or questions the point mentioned.	Response includes analysis of point mentioned and why you agree or disagree.	Provides opinions; responses are rudimentary and superficial, lacking any degree of analysis or critique.	No responses are made to address another student's posting.
Grammar and Style	Proper grammar, spelling, and APA citations are used.	Proper grammar, spelling are used; contains minor error in APA citations.	Occasional error in APA citations, grammar, or spelling.	Lacks proper grammar or APA citations; contains multiple misspelled words.

Technology Requirements

Course content is accessible through Canvas. Students will need to be able to view videos, write and upload assignments, post to discussion boards, and take assessments. Students should have access to high-speed internet and updated software. Mobile devices may be used to view course content, upload assignments, and take assessments as determined by the instructor. To view the most current technology requirements, visit the FSU Canvas support site.

Canvas Support

Need help with Canvas? Contact FSU Canvas Support:

Email: canvas@fsu.edu

Phone: (850) 644-8004

Website: support.canvas.fsu.edu

Hours: 8am to 5pm, Monday – Friday

Course Policies:

COMMUNICATIONS/NETIQUETTE

*****Most information related to this course will be communicated via Canvas announcements. Please check course site routinely.*****

For Zoom Lectures/Meetings:

- Make sure that your camera is turned on and that your face is in full view of the camera
- Do not lay in or sit on your bed. Please sit at a table or desk.
- Do not sit in full view of bathroom/mirrors.
- Remind roommates and family camera is on.
- Shirt and pants are NOT optional. Dress like you are having a face-to-face class.
- Turn off the TV/music if in the same room.
- Have treats/snacks for dogs/children

- Log in 5 min early.
- Have charger in same room.
- Pencil drums and pen clicking are distracting
- Mute yourself if you are not talking
- If using headphones, make sure they work prior to the call
- Please eat and cook breakfast before the call

For Discussions:

- Please use polite, respectful behavior when posting your responses to prompts in the Discussion Boards.
- Be mindful of how you express your emotions and humor and be sensitive to cultural and ability differences of your online peers.
- Keep postings to the point, and make sure your comments are relevant to the topic of discussion.
- Avoid messages such as, "Wow," "Way to go," or "Ditto" and aim for comments that validate other members' ideas through careful explanation of why.
- When replying, give a short description in the subject line of what you are replying to, and use correct punctuation and spelling throughout your post.

For Email Communication:

- The official method of communication for this course is our FSU e-mail accounts.
- To stay informed and aware, students are required to set up and maintain the account and check it *AT LEAST* three times per week.
- If you choose to have your official FSU account forwarded to another e-mail account, you are still held responsible for all information distributed by the University to your FSU account.
- For email, please respond to your instructor's and peers' messages within a 24-hour period.
- Use a brief description in the subject line that outlines the topic of discussion.
- Avoid using slang or profane words.
- Use your instructor's correct title he or she prefers for communication.
- Avoid using emoticons, such as smiley faces, and maintain a professional demeanor.
- Sign your email messages using your full name.
- **AVOID USING ALL CAPS.** This makes the message visually difficult to read and is perceived by the reader as "shouting."
- Use correct spelling, grammar, and punctuation, just as you would for any communication.
- Ask yourself whether you would be comfortable if someone other than the intended receiver were to read your message. Remember, email is not a completely secure form of communication.
- Refrain from "flaming," which is expressing a strongly held opinion without tact or regard for others. Don't assume that recipients will know the intent of the message (e.g., "just kidding"). It reads differently when it's in print (electronic or not).
- Report any inappropriate communication considered to be of a serious nature to your instructor, as it may be a violation of University policy.
- Treat others with respect by making messages clear and succinct.

Class Participation, Lateness, and Absence Policy:

- Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities.
- These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse.

- Consideration will also be given to students whose dependent children experience serious illness.
- There are no points associated with attendance in lecture; however, it is an inherent expectation that you will attend class and be an active participant. A random number sequence will be displayed 2-3 times every lecture and students are responsible for individually and privately replying with the displayed number each time.

Policy for Missed Assignments:

- Due dates are clearly posted for all assignments.
- Students who miss the due date for a graded assignment and do not have an approved university attendance absence will receive a grade of zero.
- Students with incomplete assignments at the end of the course will be given the earned final grade. It is the student's responsibility to complete the work within parameters set by their approved university excuse.

Policy on Responding to Students:

- Email responses typically within 24 to 48 hours.
- Graded assignments typically returned within 2 weeks after due date.

College of Nursing Policies

Professional Critical Behavior Policy:

The College of Nursing strictly adheres to the Florida State University Academic Honor Code as stated and as delineated in the FSU General Bulletin. In addition, the following apply in the College of Nursing: The CON Academic Honesty Policy (S-10), the Substance Abuse Policy (S-5) and the Mandatory Clinical Behaviors Policy (U-15). Each policy can be found on the Canvas site for the College of Nursing's Undergraduate Program under Student Policies and within the 2016-2017 Undergraduate Student Handbook.

Academic Penalties:

In the FSU College of Nursing, students violating the Academic Honor Policy in any assignment, test, etc. will receive a minimum penalty of a grade of zero (0) for the assignment in question. The violation will be reported to the Dean and the University Judicial Officer, and the student may receive an "F" for the course at the option of the instructor.

All College of Nursing Student Policies:

<https://nursing.fsu.edu/programs/student-policies>

University Policies

University Attendance Policy:

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Academic Honor Policy

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy). The Florida State University Academic Honor Policy can be found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>

Americans with Disabilities Act

Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of the course while empowering the student to meet integral requirements of the course.

To receive academic accommodations, a student:

- (1) must register with and provide documentation to the Office of Accessibility Services (OAS);
- (2) must provide a letter from OAS to the instructor indicating the need for accommodation and what type;
- (3) should communicate with the instructor, as needed, to discuss recommended accommodations. A request for a meeting may be initiated by the student or the instructor.

Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from the Office of Accessibility Services has been provided.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the

Office of Accessibility Services
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
oas@fsu.edu
<https://dsst.fsu.edu/oas>

Confidential campus resources

Various centers and programs are available to assist students with navigating stressors that might impact academic success. These include the following:

Victim Advocate Program	University Counseling Center,	University Health Services
University Center A,	Askew Student Life Center,	Health and Wellness Center,
Room 4100, (850) 644-7161,	2ndFloor,	(850) 644-6230
Available 24/7/365,	942 Learning Way	https://uhs.fsu.edu/
Office Hours: M-F 8-5	(850) 644-8255	
https://dsst.fsu.edu/vap	https://counseling.fsu.edu/	

Free Tutoring from FSU

On-campus tutoring and writing assistance is available for many courses at Florida State University. For more information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options - see <http://ace.fsu.edu/tutoring> or contact tutor@fsu.edu. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.