

NGR 7XXX: Measurement and Instrument Development

Semester Year

Delivery Method: Synchronous Online

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

Credit Hours and Prerequisites

Credit Hours: 3

Prerequisites: EDF 5400 Descriptive/Inferential Statistics Applications

Co-Requisite:

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

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

Course Description

Selecting, developing and using valid and reliable measures are integral components of sound research and evaluation. This course will present theory and methods to develop and validate measurement instruments used in nursing research and evaluation.

Course Objectives

By the end of this course, students should be able to:

1. Synthesize the underlying constructs that comprise measurement.
2. Contrast the role of measurement in nursing research versus evaluation.
3. Define sources of variation in measurement.
4. Apply common techniques to minimize measurement error.
5. Troubleshoot principles and issues involved in developing and using instruments.
6. Use item writing and format choice processes in the development of measures.
7. Apply psychometric techniques to assess reliability and validity of scales.
8. Evaluate existing instruments for reliability and validity.
9. Synthesize information from scale assessment to determine appropriateness for use.

Course Materials

Required Textbook:

Waltz, C. F., Strickland, O. L. & Lenz, E. R. (2016) Measurement in nursing and health research. 5th ed. Springer Publishing

Recommended Texts: NA

Other Required Reading:

Jones, T. L. (2016). Outcome Measurement in Nursing: Imperatives, Ideals, History, and Challenges. *Online Journal of Issues in Nursing*, 21(2).

- Stump, G. S., Husman, J., & Brem, S. K. (2012). The nursing student self-efficacy scale: development using item response theory. *Nursing research, 61*(3), 149-158.
- Polit, D. F. (2015). Assessing measurement in health: Beyond reliability and validity. *International journal of nursing studies, 52*(11), 1746-1753.
- Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: a primer. *Frontiers in public health, 6*, 149.
- Schaufeli, W. B., Desart, S., & De Witte, H. (2020). Burnout Assessment Tool (BAT)—development, validity, and reliability. *International journal of environmental research and public health, 17*(24), 9495.
- Flinkman, M., Leino-Kilpi, H., Numminen, O., Jeon, Y., Kuokkanen, L., & Meretoja, R. (2017). Nurse Competence Scale: a systematic and psychometric review. *Journal of Advanced Nursing, 73*(5), 1035-1050.
- Pugh, J. D., Gelder, L., Williams, A. M., Twigg, D. E., Wilkinson, A. M., & Blazeovich, A. J. (2015). Validity and reliability of an online extended version of the Nordic Musculoskeletal Questionnaire (NMQ-E2) to measure nurses' fitness. *Journal of clinical nursing, 24*(23-24), 3550-3563.
- Leighton, K., Kardong-Edgren, S., Schneidereith, T., & Foisy-Doll, C. (2021). Using social media and snowball sampling as an alternative recruitment strategy for research. *Clinical simulation in nursing, 55*, 37-42.
- Voutilainen, A., Pitkääho, T., Kvist, T., & Vehviläinen-Julkunen, K. (2016). How to ask about patient satisfaction? The visual analogue scale is less vulnerable to confounding factors and ceiling effect than a symmetric Likert scale. *Journal of advanced nursing, 72*(4), 946-957.
- International Test Commission. (2005). ITC guidelines for translating and adapting tests. URL: http://www.intestcom.org/files/guideline_test_adaptation.pdf
- Lopez-Garcia, M., Rubio, L., Gomez-Garcia, R., Sanchez-Sanchez, F., Miyashita, M., Medina-Abellan, M. D., & Perez-Carceles, M. D. (2022). Palliative care knowledge test for nurses and physicians: validation and cross-cultural adaptation. *BMJ Supportive & Palliative Care, 12*(3), 324-331.
- Felix, L., Keating, P., & McCambridge, J. (2015). Can obtaining informed consent alter self-reported drinking behaviour? A methodological experiment. *BMC medical research methodology, 15*, 1-7.

Websites: <https://www.cosmin.nl> COSMIN (COnsensus-based Standards for the selection of health Measurement Instruments)

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, quizzes, and exams are expected to be products of individual students per the FSU Academic Honor Policy Links to an external site. Unless it is a group assignment, students should not discuss any of the questions with each other before or during the actual assignments, activities, quizzes, or exams 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:

Course organization:

The class will combine synchronous (4 sessions) and asynchronous (~12 sessions) online sessions. We will have two 3-hour synchronous online (Zoom) sessions at the beginning of the semester and two synchronous sessions at the end of the semester.

A typical synchronous session will include an overview lecture and discussion, student presentations and individual work/lab sessions.

Asynchronous weeks will involve review of the prerecorded lecture, online student presentations and participation in the online discussions, and completion of lab assignments.

Weekly lectures. A 40-50-min lecture will include the overview of key concepts. Students are expected to be prepared for the class and read all assigned readings.

Student presentations: On select weeks students will present manuscripts related to measurement in the nursing field via a pre-recorded 10-min video presentation and lead an online discussion of the paper. Students will also present their final papers at the end of the semester.

Lab assignments: On select weeks students will work on lab assignments in class using either provided training datasets or, on student's choice, using their own or publicly available datasets. Students are advised to use SPSS or SAS software.

Office hours: the course instructor and TA will be available for online office hours throughout the semester. Office hours schedule will be determined at the beginning of the semester.

Course Calendar

Commented [UI1]: If it does not work for the students, can change to the combination of synchronous and asynchronous weeks.

Commented [JW2R1]: Umed-Typically we do an 80/20 split which means that there are 4 synchronous meetings with the remainder asynchronous throughout the term.

Commented [UI3R1]: I revised the course content for 2 sync sessions at the beginning and 2 at the end - will it work? If all sync sessions need to be at the start of the semester, I will revise accordingly

Commented [UI4]: What software they will have access to and training on? I'd prefer SAS, STATA or Mplus

Commented [JW5R4]: For their other courses they use SPSS. To me, SAS resembles SPSS in many ways. You can use SAS if you like.

Week	Date	Lectures and Practices	Homework Assigned
1		Class overview. Introduction to Measurement (synchronous session)	
2		Operationalizing nursing concepts (synchronous session)	
3		Measurement theories and frameworks	
4		Strategies for designing measurement tools and procedures	
5		Measurement reliability. Lab 1	
6		Validity of measures. Lab 2	
7		Exploratory factor analysis. Lab 3	Lab 1 due
8		Confirmatory factor analysis. Lab 4	
9		Standardized approaches to measurement	Lab 2 due
10		Measurement via the digital world	Lab 3 due
11		Instrumentation and data collection.	Lab 4 due
12		Selection and use of existing instruments. Adapting and translating instruments.	
13		Ethical issues in measurement	
14		Guest lecture	Final papers due
15-16		Final presentations (synchronous sessions)	Student presentations of the final papers

Calendar Subject to Change

Grading Policy

Course Grades are determined by the following assignments:

I. Homework (20% total):

- 1) Instrument development (develop a sample scale based on a qualitative paper) – 10%
- 2) Cognitive interview (conduct a cognitive interview with 3 individuals for the developed scale) -10%

II. Lab assignments (40% total)

- 1) Reliability analysis 10%
- 2) Validity analysis 10%
- 3) Exploratory factor analysis 10%

4) **Confirmatory factor analysis 10%**

III. Proposal (30% total)

1) A study proposal to develop or adapt a measurement instrument (Intro – 2 pages, methods – 4 pages double-spaced) - 25%

Students may choose as alternative paper assignment and present methods and results of the psychometric assessment of an instrument used in the student's research)

2) Presentation of the proposal – 5%

IV. Journal club (5% total)

Online presentation and discussion of a manuscript describing application of a measurement instrument in the field of nursing.

V. Class participation (5% total)

Final grades will be based on:

Grading Scheme

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

No changes to the content below

Commented [UI6]: Maybe this should be optional or extra credit.

Commented [JW7R6]: Hm. It seems important to me, but they would have already done the cfa. This will be your choice.

Commented [UI8R6]: Will keep it and see how it works

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.

Text Communication:

- Text is not the preferred method of communication; however, in certain circumstances it is appropriate. Such as:
- Emergencies (illness, car accident, etc.) in which you need to reach us immediately (NOT a missed assignment)
- Dropped from a Zoom meeting due to internet connectivity issues, computer problems, etc.
- Before you text think, does my faculty member need to know this RIGHT NOW?

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 Tests:

- Dates are clearly posted for all tests.
- If a student is ill or has a serious problem that prevents him/her from completing the test on the assigned day and time it is given, the student must contact your professor as soon as possible to discuss an alternate plan.
- The faculty of NUR 4445 reserve the right to administer the missed examination in a format different from that given to the cohort (including, but not limited to, oral examination, short answer, and essay).
- Make-up exams will only be given with excused absences in accordance with the university attendance policy

Policy for Missed Homework/Quizzes:

- Due dates are clearly posted for all assignments and quizzes.
- Students who miss the due date for a graded assignment/quiz 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; and,
- (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.