PH861: HEALTH BEHAVIOR MEASUREMENT, 3 UNITS

SPRING 2017

COURSE INFORMATION

Class Days and Times: Wednesdays 1pm-3:40pm
Class Location: PSFA 413
Instructor: Jerel P. Calzo, PhD, MPH
E-Mail: jcalzo@sdsu.edu
Office Location: Hepner Hall 114-G
Office Hours: Wednesdays, 10am-12pm, or by appointment.

COURSE OVERVIEW

Having excellent measures of behavior related to health and health risk is fundamental to public health. What are the components of an excellent measure? Why are there often so many ways to measure the same construct? Ultimately, how do you select which measures to use when designing a study or evaluating a program?

This course is designed to equip public health students in the measurement of health behavior, as well as disease risks, biological correlates, and broader social and environmental determinants that interact with behavior. The framework for the course is the Socioecological Model, which addresses these various levels of measurement. Students will develop knowledge and abilities in questionnaires and their development, behavioral observation, biological assessment, and community and broader assessment. This course provides an overview rather than a detailed investigation of any one technique or variable area. However, brief homework assignments and ongoing work for the self-directed final project will encourage students to explore issues of measurement in their substantive area of interest.

At the end of this course, students will be able to:

- Define key concepts related to the scientific and applied use of health behavior measures
- Given a specific research method and health related category, select or develop an appropriate behavioral measure
- Select a dependent variable of choice and develop a comprehensive assessment strategy for that variable spanning a range of socioecological levels
- Define reliability and select appropriate reliability coefficients
- Define and describe the application of validity; describe the relationship between reliability and validity
- Describe the purpose and circumstances for testing reliability and validity of measurement instruments
- Describe common measurement errors and how to adjust for those errors
- Compare and contrast different methods for survey development
- Explain and apply methods for item writing and scaling
- Develop, conduct, and analyze direct observation of behavior
- Define basic aspects of biobehavioral assessment

For those enrolled in the HB JDP, PH861 will address all of the below core competencies with a special emphasis on # 2 and # 3:

**Competency #1:** Demonstrate a sound grasp of the major influential theories and models of health behavior change.
Competency #2: Demonstrate knowledge of best practices for measuring health behaviors and related risk factors, and use psychometric principle to develop new reliable and valid measurement instruments.

Competency #3: Use qualitative research methods to address health behavior research questions and to plan interventions

**Competency #4:** Design effective interventions to motivate a change in population health behavior.

**Competency #5:** Demonstrate a sound grasp of sophisticated designs that test the effectiveness of theoretically based interventions in health behavior.

**Competency #6:** Demonstrate a sound grasp of the evidence of the effectiveness of policy interventions, particularly those focused on environmental incentives, in promoting healthy behavior.

**Competency #7:** Demonstrate a basic understanding of the biological basis of health behaviors.

**Competency #8:** Demonstrate skills in writing research proposals that would be competitive at the National Institutes of Health and comparable funding organizations.

**ENROLLMENT INFORMATION**

- Prerequisites: Enrollment in PhD program, or instructor permission.

**COURSE STRUCTURE**

This course is conducted as a seminar. Initial meetings will be instructor-led to impart core material about the major concepts of behavior measurement. Student-led discussions in subsequent meetings will focus on exploring key issues in measurement in the students’ substantive areas of interest. Discussions with guest lecturers in the remainder of semester will allow the students to develop breadth in the array of measures used to address various domains of health promotion efforts.

**COURSE MATERIALS**

There are three primary sources of reading material for the course: (1) the Di Iorio textbook (abbreviated MHB in the syllabus); (2) the National Cancer Institute Division of Cancer Control & Population Sciences Behavioral Research Program resources page (abbreviated NCI web); and (3) readings posted to the course BlackBoard.

1. Di Iorio’s *Measurement* text is the only required textbook. Used copies are readily available on Amazon. Please inform the instructor within the first week if you have trouble obtaining a copy of the textbook.


3. Required articles and chapters (available via BlackBoard) are assigned to reinforce the content of the individual lectures.

**TECHNICAL SUPPORT FOR BLACKBOARD**

Student support for Blackboard is provided by the Library Computing Hub, located on the 2nd floor of Love Library. They can be reached at 619-594-3189 or hub@mail.sdsu.edu

**COURSE ASSESSMENT AND GRADING**

- Three discussion questions for the readings, posted by midnight (11:59pm) on Tuesday before class (15 pts)
- Active participation in class (attendance, paired and group activities, speaking up during discussion) (30 pts)
- Midterm presentation on measurement issues related to Final Project (10 pts)
- Final Project: Presentation (10 pts) and Paper (35 pts)

**Grades:**

- 99-100 pts = A+
- 93-98 pts = A
- 90-92 pts = A−
- 88-89 pts = B+
- 83-87 pts = B
- 80-82 pts = B−
- etc.

**Excused Absence Make-up Policies:** As a small seminar, active participation and attendance are critical to everyone’s learning and success in the course. If you must miss a class for any reason (e.g., illness, attending a conference), please contact me as soon as possible to discuss alternatives for any exercise you miss or how to receive materials that cannot be obtained via Blackboard or a classmate. According to the University Policy File, students should notify instructors of affected courses of planned absences for religious observances by the end of the second week of classes.

**CLASSROOM CONDUCT**

Students will be expected to be active participants in the learning process. When students contribute thoughtful comments and questions to class discussions or presentations, the learning experience is enriched for all. Students should also listen attentively to the speakers and to each other. This course will cover a variety of topics, some of which may elicit strong feelings or opinions. Students are expected to articulate their comments and questions in a respectful manner and understand that others may have different perspectives.

**ACADEMIC HONESTY**

_Students are expected to maintain the highest standards of academic honesty and respect. According to SDSU’s Center for Student Rights and Responsibilities, students may be expelled, suspended, or put on probation for academic dishonesty._ In addition to a University review of the incident(s), the Graduate School of Public Health may also take disciplinary action which, depending on the severity of the incident, could result in one or all of the following sanctions: a grade of "F" on the assignment in question, dropping of one letter grade from your final grade in the class, or, for multiple or severe incidents, a grade of "F" in the class. You may receive an incomplete in a class, which will be removed once the investigation of the incident has been completed.

Cheating shall be defined as the act of obtaining or attempting to obtain credit for academic work by the use of dishonest, deceptive, or fraudulent means. Examples of cheating include, but are not limited to (a) copying, in part or in whole, from another’s test or other examination; (b) discussing answers or ideas relating to the answers on a test or other examination without the permission of the instructor; (c) obtaining copies of a test, an examination, or other course material without the permission of the instructor; (d) using notes, cheat sheets, or other devices considered inappropriate under the prescribed testing condition; (e) collaborating with another or others in work to be presented without the permission of the instructor; (f) falsifying records, laboratory work, or other course data; (g) submitting work previously presented in another course, if contrary to the rules of the course; (h) altering or interfering with the grading procedures; (i) plagiarizing, as defined; and (j) knowingly and intentionally assisting another student in any of the above.
Plagiarism shall be defined as the act of incorporating ideas, words, or specific substance of another, whether purchased, borrowed, or otherwise obtained, and submitting same to the University as one’s own work to fulfill academic requirements without giving credit to the appropriate source. Plagiarism shall include but not be limited to (a) submitting work, either in part or in whole, completed by another; (b) omitting footnotes for ideas, statements, facts, or conclusions that belong to another; (c) omitting quotation marks when quoting directly from another, whether it be a paragraph, sentence, or part thereof; (d) close and lengthy paraphrasing of the writings of another; (e) submitting another person’s artistic works, such as musical compositions, photographs, paintings, drawings, or sculptures; and (f) submitting as one’s own work papers purchased from research companies.

Examples of Plagiarism include but are not limited to:
- Using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work)
- Copying and pasting work from an online or offline source directly and calling it your own
- Using information you find from an online or offline source without giving the author credit
- Replacing words or phrases from another source and inserting your own words or phrases
- Submitting a piece of work you did for one class to another class

If you have questions on what is plagiarism, please consult the policy.

TURNITIN

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. You may submit your papers in such a way that no identifying information about you is included. Another option is that you may request, in writing, that your papers not be submitted to www.turnitin.com. However, if you choose this option you will be required to provide documentation to substantiate that the papers are your original work and do not include any plagiarized material.

COPYRIGHT POLICY

SDSU respects the intellectual property of others and we ask our faculty & students to do the same. It is best to assume that any material (e.g., graphic, html coding, text, video, or sound) on the Web is copyrighted unless specific permission is given to copy it under a Creative Commons License. More information about the use of copy written material in education as part of the TEACH Act and Copyright Fair Use Guidelines. Whenever possible, you should attribute the original author of any work used under these provisions.

COURSE POLICIES

Interacting with me
I’ll try to respond within 24 hours to e-mails sent to me from within Blackboard or to jcalzo@sdsu.edu. In general, I do not check e-mail after 6pm or over the weekend. For questions that require in-depth clarification, please visit my office hours (Wednesdays, 10am-12pm). If you cannot attend my office hours, you can make an appointment to meet with me at IBACH (9245 Sky Park Court, Suite 100). We can also make an appointment to meet via web conference or phone (619-594-2390). I enjoy meeting with students, so please reach out!

Student services
A complete list of all academic support services is available on the Academic Success section of the SDSU Student Affairs website. For help with improving your writing ability, the staff at the SDSU Writing Center is available in
person and online. Counseling and Psychological Services offers confidential counseling services by licensed psychologists, counselors, and social workers. More info can be found at their website or by contacting (619) 594-5220. You can also Live Chat with a counselor http://go.sdsu.edu/student_affairs/cps/therapist-consultation.aspx between 4:00pm and 10:00pm, or call San Diego Access and Crisis 24-hour Hotline at (888) 724-7240.

Classroom disruptions
As emerging leaders in research and public health practice, it’s important to cultivate professional conduct in every setting, including the classroom. Please turn off and put away all phones and mobile devices during class. Every class will include a break, which is the perfect time to text, check e-mail, and place phone calls. In addition, laptops and tablets may be used during class for notetaking purposes only. Please don’t distract your classmates or insult the guest speakers by checking e-mail or Facebook, browsing the Internet, engaging in online shopping, etc. Thank you!

Classroom recordings
Students must obtain permission before recording a class lecture or discussion. Students who record without prior permission may be reported for misconduct.

Students with Disabilities
If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. You can also learn more about the services provided by visiting the Student Disability Services website. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

Deferred Action for Childhood Arrivals (DACA)
All students with questions or concerns regarding DACA are encouraged to see the College of Health and Human Services Assistant Dean for Student Affairs, Jessica Robinson (jmrobinson@sdsu.edu).

Nondiscrimination Policy
- SDSU complies with the requirements of Title VI and Title VII of the Civil Rights Act of 1964, as well as other applicable federal and state laws prohibiting discrimination. No person shall, on the basis of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any program of the California State University
- SDSU does not discriminate on the basis of disability in admission or access to, or treatment or employment in, its programs and activities. Students should direct inquiries concerning San Diego State University’s compliance with all relevant disability laws to the Director of Student Disability Services (SDS), Calpulli Center, Room 3101, SDSU, San Diego, CA 92128 or call 619-594-6473 (TDD: 619-594-2929).
- SDSU does not discriminate on the basis of sex, gender, or sexual orientation in the educational programs or activities it conducts. More detail on SDSU’s Nondiscrimination Policy can be found in the SDSU General Catalog, University Policies. Students should direct FERPA, Title IX, Discrimination, Harassment or any other protected categories inquiries and concerns to the office of Employee Relations and Compliance, phone number is 619-594-6464 and their website is http://oerc.sdsu.edu/

Concerns regarding classroom activity, grades, or other student affair matters
Though students have the option of contacting the San Diego State University Ombudsman or the Assistant Dean for Student Affairs at any time regarding classroom activity, grades, or other student affairs matters students are encouraged to meet with their professor first to discuss the situation. If the issue is not resolved at this level, the student should contact their undergraduate advisor. If the problem is not resolved at this level, contact should be made to their department director and finally their Assistant Dean for Student Affairs.
## PART 1: MAJOR CONCEPTS IN BEHAVIORAL MEASUREMENT

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Preparatory Assignment</th>
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<tbody>
<tr>
<td>1/18/17</td>
<td>Why do we care about measurement?</td>
<td>• Readings</td>
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<td>• Introduction to the course</td>
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<td>o Scope of course, overview of final project</td>
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<td>o Student interests</td>
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<td>• Theoretical background</td>
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<td>1/25/17</td>
<td>How do you choose among so many options?</td>
<td>• Readings + 3 discussion questions</td>
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<td>• Major concepts of measurement</td>
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<td>• Types of measures and methods: self-report, scales, observations,</td>
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<td>biobehavioral, electronic</td>
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<td>• Surveys and scale development</td>
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<td>o Item writing and scaling</td>
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<td>o Item Response Theory</td>
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<td>o Cognitive interviewing</td>
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<td>2/1/17</td>
<td>What is a good measure?</td>
<td>• Readings + 3 discussion questions</td>
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<td>• Reliability, validity, and test characteristics</td>
<td>• Homework: Research Outcome and Measure Selection Exercise</td>
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<td>• Measurement error</td>
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<td>2/8/17</td>
<td>Qualitative Methods: Why don’t you just ask them?</td>
<td>• Readings + 3 discussion questions</td>
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<td>• Identification of measurement issues and constructive approaches to</td>
<td>• Homework: Research Question and Brief Interview Protocol</td>
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<td>address those issues</td>
<td>Exercise</td>
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<td>• Review of topics from Part 1 of the course (time permitting)</td>
<td>• NOTE: Deadline to approve final paper topic (must be done in person)</td>
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<td>2/15/17</td>
<td>Measurement through Direct Observation: Is what you see what you get?</td>
<td>• Readings + 3 discussion questions</td>
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<td>Guest Speaker: Dr. John Elder</td>
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## PART 2: APPLYING MEASUREMENT CONCEPTS TO STUDENTS’ AREAS OF INTEREST

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<tr>
<th>Date</th>
<th>Activity</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>2/22/17</td>
<td>What are the gold standard measures in your area of interest?</td>
<td>Prepare for own midterm presentations and incorporate peer feedback based on in-class presentations and discussion.</td>
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<td>Content:</td>
<td>• Student presentations and discussion</td>
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<td>3/1/17</td>
<td>What are the gold standard measures in your area of interest? (Continued)</td>
<td>Prepare for own midterm presentations and incorporate peer feedback based on in-class presentations and discussion.</td>
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<td>Content:</td>
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Readings

To facilitate discussion, please complete reading prior to class. I will notify students a minimum of one week in advance if there are any changes to the reading assignments. With the exception of the class meetings on 1/18, 2/22, 3/1, and 5/3, please write three discussion questions that synthesize your reactions to the readings for the week. Please post discussion questions to the course Blackboard before midnight (i.e., 11:59pm) on Tuesday prior to class that week.

1/18/17: Introduction to behavioral measurement and theoretical background

1. MHB: CHAPTER 1 (Introduction to Measurement)

1/25/17: Major concepts of measurement, types of measures and methods, survey development

1. MHB: CHAPTER 2 (Types of Measures)
2. MHB: CHAPTER 4 (Survey Development)
3. MHB: CHAPTER 6 (Theory and Measurement)
4. MHB: CHAPTER 7 (Item Writing and Scaling)
Choose one of the following:


OR


Between 1/25 and 2/8, begin reading all categories of constructs on the NCI webpage to familiarize yourself with major theoretical constructs employed in health behavior research and how they are typically measured. If you do not have an ongoing research or field project to build upon, this website can be useful for identifying a topic area for your final project.

2/1/17: Reliability, validity, measurement errors

1. MHB: CHAPTER 3 (Measurement Error)
2. MHB: CHAPTER 9 (Fundamentals of Reliability)
3. MHB: CHAPTER 10 (Reliability Assessment and Item Analysis)
4. MHB: CHAPTER 11 (Validity)

Students have the option of reviewing MHB Chapter 8 for a refresher on correlation analysis and SPSS as a primer for Chapters 9-11.

2/8/17: Qualitative methods in measurement approaches


2/15/17: Measurement through direct observation (Dr. John Elder)


2/22/17: NONE (Midterm presentations)

3/1/17: NONE (Midterm presentations)

3/8/17: Physical activity (Dr. Noe Crespo)


3/15/17: EHR, disease registries, and claims data (Dr. Caroline Thompson)


3/22/17: Geospatial analysis and measuring neighborhood effects (Dr. Joseph Gibbons)


3/29/17: NONE (SPRING BREAK)

4/5/17: Nutrition and dietary behavior assessment (Dr. Michelle Zive)


4/12/17: Biomarkers in alcohol, tobacco, and other drugs (Dr. Susan Woodruff)


4/19/17: Gender-based violence (Dr. Liz Reed)


4/26/17: Gender and sexuality (Dr. Heather Corliss)


5/3/17: NONE (Final presentations)

**HOMEWORK ASSIGNMENTS**

Homework assignments must be posted to BlackBoard by midnight (11:59pm) on Tuesday prior to the class in which they are due.

**Research Outcome and Measure Selection Exercise (500 words), Due 11:59pm 1/31/17**

For this assignment, write a well-worded research question with a clearly defined outcome. This can be a research question you are deeply interested in (e.g., in relation to the final project), or something completely made up for this assignment. Identify one existing published measure to assess the outcome defined in your question and describe the evidence that supports why it is the best measure to address your research question.

**Research Question and Brief Qualitative Assessment Protocol Exercise, Due 11:59pm 2/7/17**

For this assignment, write a well-worded qualitative research question (maximum of two sentences). This should be stated in the form of a question. You may have to reconsider the wording of your question a number of times before you finalize a succinct yet informative overall study question that can best be answered using qualitative assessment. Then, devise a protocol or describe a strategy to gather data on the outcome specified in the research question. If you are drafting interview questions, write no more than 5 example questions.
**FINAL PROJECT**

**Overview:** The final project is an opportunity for you to explore and apply course concepts to your own research and work in the field. Although you are encouraged to utilize works in progress as a basis for your final project (e.g., dissertation and thesis projects), I am asking you to write your term paper in the format of a brief grant application focused on measurement development in the context of a public health research study or program. For example, a project could focus on adapting eating disorders questionnaires for boys and men, or developing ecological momentary assessment methods for behaviors typically studied via self-report questionnaires.

Given your public health topic, select **two key variables**. Variables can be exposures, outcomes, moderators, or mediators. For each key variable, first describe and critique **one existing measure** for assessing the key variable. Then, propose and describe the process through which you would develop **one new measure** to assess each key variable.

**Timeline:** The final project consists of three stages:

**Stage 1: Approval of Final Project Topic (anytime before Wednesday, 2/8)**
Meet with me in person during office hours, class break, or after class to discuss and approve your final project topic. I prefer discussing final project topics in person because ideas tend to be iterative and it is easier to clarify any additional questions up front.

**Stage 2: Midterm Presentation (2/22 or 3/1)**
You will have 15 minutes to discuss the existing, “gold-standard” measures related to your chosen topic of interest. You will also have 15 minutes to expose us to a chosen measure (so that we can discuss the participant experience), and 15 minutes to workshop your idea for your final project. See description below.

**Stage 3: Final Presentation (5/3) and Term Paper (5/5)**
The purpose of the final presentation is to receive additional editorial feedback before submitting your term paper at the end of the week. Students will have up to 10 minutes to discuss the two key variables they have chosen and the novel measurement approaches they have proposed. See instructions for the term paper below.

**Midterm Presentation (Sign up for 2/22 or 3/1):** Preparing your 15-minute midterm presentation will get you started on your final presentation and term paper. The goal of your midterm presentation is to provide a mini-review of the best (and worst) measures currently in the field related to your topic of interest. In curating which measures to share, try featuring measures that vary in terms of theoretical approach, methodology, interpretation, etc. Is there a measure that seems to pop up in every study? Are there measures more prone to threats to reliability or validity? Perhaps measurement errors? To bring measurement issues to life, you will also have up to 15 minutes to administer one of the measures to your classmates so that we can discuss the participant experience. Finally, you will also have 15 minutes to discuss your proposed methods for measurement development for your term paper.

**Term Paper (Due 5/5; Format: Single space, Arial 11, 1-inch margins, References in JAMA citation style):** In lieu of a final exam, you will submit a final term paper. Term paper length may vary depending on the methodological approaches you propose. Term papers will consist of two parts.

**Part 1, Specific Aims (1 page):** The one-page specific aims section will cover the following:
- Background of the public health issue and its significance
- Brief description identifying issues/limitations related to measurement
- Aims (must specify the key variables, and briefly describe the measurement development approaches to address the issues/limitations related to previous measurement)

**Part 2, Background and Method:** A background and method section will follow the aims page. This section must describe the key variables of interest, the existing measures you have chosen (and your critique of the measures), a detailed description of the methods for developing new measurement approaches, and strengths and limitations of the proposed approaches. The paper must feature the primary themes of the course, including:

- Operationalization
- Reliability
- Integrated socioecological models
- Sampling
- Validity
- Proposed pilot testing and data analysis