

COURSE SYLLABUS

Site: Moodle 3.2 Academic Year 2018-2019

Course: PUBH 6806 Principles of Public Health Research (sec 320)

Updated: Monday, August 06, 2018

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Course and Instructor Information

PubH 6806

Principles of Public Health

Research

Credits: 2

Instructor information:

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Office Hours	Post questions on Course Q&A discussion forum -Or- Find an open time on my Google Calendar and send an invite for a meeting, call, or Skype. My calendar is updated, so open times are usually fair game . (Email is okay, too, if you don't want to grab a spot yourself).

TA contact information:

Teaching Assistant	
Email; Twitter	
Office Hours	By appointment

I. Course Description

Students in this class have different backgrounds, goals, and plans. Some will go on to **conduct research themselves**. Others will not be researchers, but instead will need to **critically evaluate scientific evidence** from a policy or practice point of view. Both of these require knowledge of good research design, and its common flaws and limitations. **Both also require knowledge of how research can either illuminate, or perpetuate, disparities in health and health care.**

Therefore, this introductory course in research methodology delves into the fundamentals of research design and methods in a critical way for students at the Master's level. It serves as a careful introduction to quantitative and qualitative methods and other approaches. The aim is to give students a broad background and an understanding of the threats to solid research evidence so they can be **thoughtful producers, and/or critical and skeptical consumers, of research.**

We will discuss strengths and weaknesses of each design or method, and students will have hands-on practice experience multiple designs. The emphasis is on reasoned skepticism and critical review of research designs, methods, and findings which they may produce themselves and/or encounter and apply in a practice- or policy-relevant position.

I. Course Prerequisites

Students should be public health majors, graduate or professional school students, or have instructor consent.

II. Course Goals and Objectives

Upon successful completion of this course, students will be able to (1) act as informed and careful consumers of research who are able to critically review scientific research studies in public health, and (2) design a research project with the supervision of an advisor, and with an eye toward the choices involved in study design and methods.

To reach these two broader goals, we will work to achieve the following more detailed learning objectives (organized according to their approximate order in course content):

1. Explore how and why careful conception and design are important in public health research.
2. Learn how to identify and evaluate the components of research articles, and how to perform a search and review of the literature using Library and online resources.
3. Understand research evidence in context and its role in society.
4. Identify how variables fit together in research designs according to their roles (independent versus dependent).
5. Compare experimental, quasi-experimental, and observational research designs in terms of causality, resources, ethics, and constraints on methodological choices.
6. Compare the strengths, weaknesses, and uses of qualitative, quantitative, and mixed methods approaches and techniques of data collection and analysis.
7. Work our way downward from a population of interest to a research sample, including identifying the population, choosing probability or non-probability sampling, and learning how random assignment or random sampling affects research conclusions.
8. Distinguish and describe variables by measurement scale, validity, and reliability, and learn how these concepts translate into choosing or designing measures.
9. Understand the difference between conventional research and community based participatory research; contemplate the role of community in research and the production of knowledge.
10. Understand the ethical issues involved in conducting research throughout all phases of the research process.
11. Understand ways to write up and disseminate research and the potential difficulties in doing so.

III. Methods of Instruction and Work Expectations

A variety of methods are used to meet the course objectives: viewing lectures, completing readings, individual assignments including a final project, and participation via discussion forums and/or Twitter tweets.

Each week will have a list of readings and assignments. Students are expected to stay up to date with these and to actively participate on forums or Twitter each week. This is not a work-at-your-own-pace course. Points will be deducted from late assignments.

Electronic Communication Guidelines and Expectations (for meetings, see above)

Please post general questions or clarifications about weekly readings, assignments, or lectures, or about course policy, in the Course Announcements/Q&A forum at the top of the course home page. This way, we will see and respond to it, and everyone can see the answer. Any such questions received via email will be redirected to the forum anyway. Discussion forum posts are meant for participation and discussion regarding the week's actual topic and content.

We will do our best to keep a policy of responding within 24 hours to questions asked during the regular week. Instructor/TA monitoring of the General Course Announcements/Q&A forum and each week's discussion forum will adhere to the following schedule as best as possible:

- Mon-Fri: At least once in the morning and once in the early afternoon.
- **Any time between Friday 4pm-Monday 9:30 am: We do not guarantee a response before Monday morning. Please plan accordingly, as assignments are due by noon on Monday.**

We will forewarn you/announce if we anticipate disruptions to the communication schedule as posted.

IV. Course Text and Readings

Recommended Text:

The recommended text is for students with unsure or limited background in research methods and/or those who want to make sure they do not miss any of concepts or understandings from course material. Readings for this recommended text will be listed in the syllabus:

Designing and Conducting Research in Health and Human Performance. 2011. Tracy D. Matthews, Kimberly T. Kostelis. San Francisco, CA: John Wiley & Sons, Jossey-Bass. Available in U of MN bookstore (hereafter Matthews)

Required readings are listed below in the order assigned:

To access articles via E-Reserves:

Go to the library reserves main page via the direct link to Course Reserves. There, use your University of Minnesota x500 and personal password to login and view course readings. Any readings listed that are NOT in course reserves will be saved as PDFs in that week's materials (e.g., Schutt, #13).

1. Garrard, Judith. Chapter 1. Introduction. (pp 3-27) in Health Sciences Literature Review Made Easy: the Matrix Method. Jones Bartlett Learning, 3rd edition, 2011
2. Barry, A. E. & Goodson, P. "Use (and Misuse) of the Responsible Drinking Message in Public Health and Alcohol Advertising: A Review." *Health Education & Behavior* 37 (2): 288-303, 2010.
3. Shippee, Nathan D., et al. "Effectiveness in Regular Practice of Collaborative Care for Depression Among Adolescents: A Retrospective Cohort Study." *Psychiatric Services* 69(5):536-41, 2018.
4. Rockwood, T.H., Church, J.M., Fleshman, J.W., Kane, R.L., et al., "Fecal Incontinence Quality of Life Scale" *Dis Colon Rectum* 43:9-17, 2000
5. Call, K.T., Davern, M., Boudreaux, M., Johnson, P.J., Nelson, J. "Bias in telephone surveys that do not sample cell phones: Uses and limits of post-stratification methods." *Medical Care* 49(4):355-364, 2011.
6. Forte, D.C., Virnig, B.A., Kane, R.L., et al., "Geographic variation in device use for intertrochanteric hip fractures." *The Journal of Bone and Joint Surgery*, 90:691- 9, 2008.
7. Shippee, T.P. "But I am not moving: Transitions in a continuing care retirement community." *The Gerontologist* 49:418-427, 2009.
8. Barry, C.L., Jarlenski, M., Grob, R., Schlesinger, M., Gollust, S.E. "News media framing of childhood obesity in the United States from 2000 to 2009." *Pediatrics* 128:132-145, 2011.
9. Thomas, D.R. "General inductive approach for analyzing qualitative evaluation data." *American Journal of Evaluation* 27(2): 237-246, 2006.
10. Gamble, F.N. "Under the shadow of Tuskegee: African Americans and health care." *American Journal of Public Health* 87(11): 1773-1778, 1997.
11. Wittink, M.N. Barg, F.K. and Gallo, J.J. "Unwritten rules of talking to doctors about depression: Integrating qualitative and quantitative methods" *Annals of Family Medicine*, 4(4):302-209, 2006.
12. Horowitz C.R, Robinson M., & Seifer S. "Community-based participatory research from the margin to the mainstream: Are researchers prepared?" *Circulation* 119:2633-2642, 2009.
13. Schutt R.K. Investigating the social world: The process and practice of research" 6th Edition. Appendix C, pp. C1-C3. Pine Forge Press. 2008.
14. Cohen, D., Speak, S., Scribner, R., Kissinger, P., Mason, K., & Wildgen, J. "Broken Windows" and the risk of gonorrhea. *American Journal of Public Health*, 90(2), 230-236, 2001.

V. Course Outline and Weekly Schedule

The dates refer to the start of the week when we will study each topic. Readings should be done before viewing the lecture. This schedule may change as the semester unfolds in which case I will notify you ahead of time. ****Assignments are due at NOON on MONDAYS. We used to require Sunday evening, but wanted to allow more time, hence Monday. If Monday is busy for you, please plan ahead and submit by Sunday evening.**

Week__	Date____	Lecture Topics and Guest Lecturers	Readings (see Library reserves for articles, which are <u>required</u>) Note: Text readings are only <u>recommended</u>	Assignments due for next week (e.g., Assignment 1 is due 9/10)
1	Sept. 4 (note: Monday the 3 rd is Labor Day)	<p>Overview of research methods (Dr. Nathan Shippee)</p> <p>All library resource tutorials and links:</p> <ul style="list-style-type: none"> • Introduction to the Bio-Medical Library • Citation and reference software library link • Introduction to PubMed • Introduction to Google scholar - 	<p>No articles</p> <p>Text: Chapters 1 & 2</p>	<p>(1) Introduce yourself assignment</p> <p>(Other discussion forum post/Tweets optional)***see below</p>
2	Sept. 10	<p>Getting started on your research</p> <ul style="list-style-type: none"> • From topic to research questions <p>Guest lecturer: Dr. Garrard</p> <ul style="list-style-type: none"> • Required Lecture: Reviewing the research literature: Matrix Method • Optional Lecture: The Matrix Method: Step by Step Guide 	<ul style="list-style-type: none"> • Garrard (2011) • Barry & Goodson (2010) • View Cochrane library website: http://www.cochrane.org/cochrane-reviews <p>Text: Chapters 3 & 4</p>	<p>(2) Topic area description</p> <p>-</p> <p>(Answer Discussion Forum questions)</p>

3	Sept. 17	<p>Understanding research evidence in context</p> <p>-</p> <p>Understanding scientific research evidence in society</p> <p>-</p> <p>Systematic reviews</p>		<p>(3) Topic paper -</p> <p>-</p> <p>(Discussion forum post/ Tweet)</p>
4	Sept. 24	<p>Experimental designs</p> <ul style="list-style-type: none"> · Causality · Experimental and quasi-experimental designs · Random assignment vs. random sampling <p>Understanding variables, hypotheses, and significance (conceptually)</p>	<ul style="list-style-type: none"> · Shippee et al. (2018) · Threats to validity glossary adaptation <p>Text: Chapter 5</p>	<p>(4) Threats to validity exercise</p> <p>-</p> <p>(Discussion forum post/ Tweet)</p>
5	Oct 1	<p>Survey Design</p> <ul style="list-style-type: none"> · Survey research · Questionnaire design · Measurement and representation · 	<p>No articles.</p> <p>Text: Chapter 5</p>	<p>-(Discussion forum post/ Tweet)</p>
6	Oct. 8	<p>Measurement</p> <p><i>Guest Lecturer: Dr. Rockwood</i></p>	<ul style="list-style-type: none"> · Rockwood, et al. (2000) 	<p>(5) Survey</p> <p>-(Discussion forum post/ Tweet)</p>
7	Oct. 15	<p>Sampling</p> <ul style="list-style-type: none"> · Sample size & statistical power · Probability and non- probability sampling · Sample coverage 	<ul style="list-style-type: none"> · Call et al., (2011) <p>Text: Chapter 9</p>	<p>(Answer Discussion Forum questions)</p>

8	Oct. 22	<p>Secondary data analysis & Analysis of quantitative data</p> <p>-</p> <p><i>Guest lecturer: Dr. Virnig</i></p> <ul style="list-style-type: none"> • Pros and cons of administrative data • Data quality issues • Hypothesis testing 	<ul style="list-style-type: none"> • Forte, Virnig et al., 2008 <p>Text: Chapters 11,12</p>	<p>(6) Secondary Data analysis assignment</p> <p>-</p> <p>(Discussion forum post/ Tweet)</p>
9	Oct. 29	<p>Qualitative research</p> <p>-</p> <p><i>Guest lecturer: Dr. Tetyana Shippee</i></p> <ul style="list-style-type: none"> • Types of qualitative research • Coding 	<ul style="list-style-type: none"> • Shippee (2009) • Barry et al., (2011) <p>Text: Chapter 6</p>	<p>-(Discussion forum post/ Tweet)</p>
10	Nov. 5	<p>Analysis of qualitative data</p> <p>-</p> <p><i>Guest lecturer: Dr. Gollust</i></p> <p>-</p> <p>Content analysis methods:</p> <ul style="list-style-type: none"> • Defining content analysis • Applications of content analysis in health research • Developing instruments to code text 	<ul style="list-style-type: none"> • Thomas (2006) <p>Text: Chapter 13; Skim Chapter 15</p>	<p>(7) Qualitative Assignment --</p> <p>-</p> <p>(Discussion forum post/ Tweet)</p>
11	Nov. 12	<p>Mixed methods research</p> <p>-</p> <p><i>-Guest lecturer: Dr. Tetyana Shippee</i></p> <ul style="list-style-type: none"> • Why use mixed methods • Design types • Implementation issues 	<p>Wittink et al. (2006)</p> <p>Text: Chapter 7</p>	<p>(Discussion forum post/ Tweet)</p>

12	Nov. 19	Community-based participatory research (CBPR) - <i>Guest lecturer: Dr. Call</i>	· Horowitz et al., (2009)	(Discussion forum post/ Tweet)
13	Nov. 26	Ethical challenges · Ethics are dynamic, evolving · Ethical challenges throughout research process · Potential limits of IRBs	· Gamble (1997) · Schutt -Appendix C · Cohen et al. (2001) Text: Chapter 8	(8) Critique of an article (Cohen et al. 2001) - - (Discussion forum post/ Tweet)
14	Dec. 3	Writing and presenting research (dissemination)	Text: Chapters 14,15	(Discussion forum post/ Tweet)
15	Dec. 10	<i>Final project, forum post, and self-evaluation due by noon Dec 14</i>		(9) Final project - -Participation self-evaluation
			<i>There is no final exam in this course. Final project grades will be reported to students shortly before final grades are due.</i>	

****Assignments are due at NOON on MONDAYS**

*****Discussion forum post/Tweet is not required every week but is encouraged to get full points for participation and to ensure your own engagement in the course.**

VI. Evaluation and Grading

1. Overview and grade point breakdown

Meeting the course objectives means that instructors, TAs, and students must stay up-to-date with readings and assignments. Lectures may or may not mention the readings, but they **will not repeat** content from readings; both are needed for learning. Assignments are meant to illustrate and reinforce the language, concepts, and process laid out in the lectures and required readings.

Grades are calculated on a "total points" method. The total number of points possible in this course is 400. Regular assignments count for 63.75% of the grade, the final project is worth 28.75%, and participation comprises 7.5%.

The breakdown of points is listed below.

Assignments	Points	%
1. Introduce yourself & Twitter	4	1%
2. Description of topic area	5	1.25%
3. Topic paper/Lit review	60	15%
4. Threats to Validity Exercise (matching quiz)	21	5.25%
5. Survey	40	10%
6. Secondary data analysis	40	10%
7. Qualitative Assignment	40	10%
8. Critique of article	45	11.25%
9. Final project	115	28.75%
10. Participation	30	7.5%
Total	400	100.00%

2. Course assignments and student work

a. Assignments

The assignments are designed to provide practical learning experiences applied to students' topics of interest. All assignments must be submitted via Moodle (in Microsoft Word, quiz answers, forum posts, etc. as noted for each assignment).

The schedule for all assignments and due dates are detailed above. **All late assignments will have 2 points deducted for each day.**

b. Final project

The final project is a research proposal in the form of a PowerPoint presentation slide deck. This project is to build on work you began with your topic paper and incorporate your knowledge of research methods acquired throughout the semester. This is an individual assignment; you can ask classmates to review and comment, but it is to be your product alone. See the assignment packet for details.

c. Participation

Participation is worth 30 points total (see distribution below). Given the online nature of the class, participation will be based on your engagement in the discussion forum and, if you choose, the optional use of Twitter.

We do **NOT** require a post or tweet every week from everyone, but remember that since this is an online course, such activities are some of the only ways you have of participating in class. Thus, to ensure everyone is engaged and to be sure you can get full points, we provide reminders for you to make a discussion forum post or Tweet (or both) if you can. **You should be engaging with the discussion boards and/or Twitter most weeks.**

Posts or tweets should have substance: they should include a thoughtful comment on lecture material, intellectually provocative question, answer to a question, or link with brief commentary for everyone to think about (links may be to scientific articles in the news, actual articles, reports, or presentations, or other content, but be sure you are getting reputable sources). The goal is that such links will be oriented toward the given week's content and reading(s).

Those students wishing to obtain full points in this section would be expected to post thoughtfully very often, and to show further active engagement and outstanding knowledge of readings.

d. Extra credit

You can turn in up to 3 extra credit papers, with a maximum of 5 points each, for a total of 15 points extra credit possible. Extra credit papers will entail learning more about the research of our guest speakers. For each extra credit paper, you will need to produce a 1.5-page write-up (double-spaced), **due the Monday after each guest lecturer is listed in the syllabus**. Each extra credit paper is to consist of two components:

1. A summary of one of the guest speaker's recent articles (beyond any articles assigned for class) (1 pg.).
2. Discussion of how the article complements guest speaker's presentation (1/2 pg.).

3. *University of Minnesota Uniform Grading and Transcript Policy*

A link to the policy can be found at onestop.umn.edu.

Letter grades and associated points are awarded in this course as follows below, and will appear on the student's official transcript. The S grade does not carry points but the credits will count toward completion of the student's degree program if permitted by the college or program.

Grade Points	Description
A = 95-100	Represents achievement that is outstanding relative to the level necessary to meet course requirements.
A- = 90-94	
B+ = 87-89	
B = 83-86	Represents achievement that is significantly above the level necessary to meet course requirements.
B- = 80-82	
C+ = 77-79	
C = 73-76	Represents achievement that meets the course requirements in every respect.
C- = 70-72	
D+ = 65-69	
D = 55-64	Represents achievement that is worthy of credit even though it fails to meet fully the course requirements.
F < 55	Represents failure and signifies that the work was completed but not at a level of achievement worthy of credit.
S/N option must complete all assignments to a C- level (70%):	
S	Achievement that is satisfactory which is equivalent to a C- or better (achievement is at the discretion of the instructor but may be no lower than a C-).
N	Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.

4. Other evaluation and grade information

Course Evaluation

Beginning in fall 2008, the SPH collects student course evaluations electronically using a software system called CoursEval: www.sph.umn.edu/courseval. The system will send email notifications to students when they can access and complete their course evaluations. Students who complete their course evaluations promptly will be able to access their final grades just as soon as the faculty member renders the grade in SPHGrades: www.sph.umn.edu/grades. All students will have access to their final grades through OneStop two weeks after the last day of the semester regardless of whether they completed their course evaluation or not. Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered.

Incomplete Contracts

A grade of incomplete "I" shall be assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., documented illness or hospitalization, death in family, etc.), the student was prevented from completing the work of the course on time. The assignment of an "I" requires that a contract be initiated and completed by the student before the last official day of class, and signed by both the student and instructor. If an incomplete is deemed appropriate by the instructor, the student in consultation with the instructor, will specify the time and manner in which the student will complete course requirements. Extension for completion of the work will not exceed one year (or earlier if designated by the student's college). For more information and to initiate an incomplete contract, students should go to SPHGrades at: www.sph.umn.edu/grades.

VII. Other Course Information and Policies

University Credit Hour Definition

In defining standards for semester conversion

(<http://www.fpd.finop.umn.edu/groups/senate/documents/policy/semestercon.html>, Section 4A.), the University Senate affirmed the standard (first adopted by the University Senate on February 16, 1922, and reaffirmed subsequently) that one semester credit is to represent, for the average University of Minnesota undergraduate student, three hours of academic work per week (including lectures, laboratories, recitations, discussion groups, field work, study, and so on), averaged over the term, in order to complete the work of the course. Enrollment for 15 credits in a semester would thus require approximately 45 hours of work per week, on average, over the course of the semester for a typical undergraduate student. All grades for academic work are based on the quality of the work submitted, not on hours of effort. It is expected that the academic work required of graduate and professional students will exceed three hours per credit per week (or 45 hours per credit over the course of the semester).

Grade Option Change (if applicable)

For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. Grade option change deadlines for other terms (i.e. summer and half-semester courses) can be found at onestop.umn.edu.

Course Withdrawal

Students should refer to the Refund and Drop/Add Deadlines for the particular term at onestop.umn.edu for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Student Services Center at sph-ssc@umn.edu for further information.

Student Conduct, Scholastic Dishonesty and Sexual Harassment Policies

Students are responsible for knowing the University of Minnesota, Board of Regents' policy on Student Conduct and Sexual Harassment found at www.umn.edu/regents/polindex.html.

Students are responsible for maintaining scholastic honesty in their work at all times. Students engaged in scholastic dishonesty will be penalized, and offenses will be reported to the SPH Associate Dean for Academic Affairs who may file a report with the University's Academic Integrity Officer.

The University's Student Conduct Code defines scholastic dishonesty as "plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a

University academic record; or fabricating or falsifying of data, research procedures, or data analysis.”

Plagiarism is an important element of this policy. It is defined as the presentation of another's writing or ideas as your own. Serious, intentional plagiarism will result in a grade of "F" or "N" for the entire course. For more information on this policy and for a helpful discussion of preventing plagiarism, please consult University policies and procedures regarding academic integrity:

<http://writing.umn.edu/tww/plagiarism/>.

Students are urged to be careful that they properly attribute and cite others' work in their own writing. For guidelines for correctly citing sources, go to <http://tutorial.lib.umn.edu/> and click on “Citing Sources”.

In addition, original work is expected in this course. Unless the instructor has specified otherwise, all assignments, papers, reports, etc. should be the work of the individual student. It is unacceptable to hand in assignments for this course for which you receive credit in another course unless by prior agreement with the instructor. Building on a line of work begun in another course or leading to a thesis, dissertation, or final project is acceptable.

Disability Statement

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have a documented disability (e.g., physical, learning, psychiatric, vision, hearing, or systemic) that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities are encouraged to contact Disability Services to have a confidential discussion of their individual needs for accommodations. Disability Services is located in Suite 180 McNamara Alumni Center, 200 Oak Street. Staff can be reached by calling 612/626-1333 (voice or TTY).

Mental Health Services

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via www.mentalhealth.umn.edu.