

Data Skills On-line: Methods for Public Health Practice PUBH 450 (1 credit)

Course Syllabus & Schedule (Draft 12.4.13*)

Course Description

This course will focus on training public health professions to apply basic analytic and technical skills to their day-to-day job responsibilities. Examples of these responsibilities are quantitative data collection and analysis, working with population-based data, and monitoring progress on specific program activities. We encourage students to apply data skills to their own current public health careers and interests.

The course will be structured in nine modules. Modules will engage students in active learning through the use of case studies, basic data descriptions and analysis, on-line discussions, and/or quizzes. Modules will have a self-paced learning component. Students will have the opportunity to apply data skills in a final project.

*Subject to change per instructions from Undergraduate Curriculum on Final Exam Date and approval from Department Chair.

Course Objectives

Course objectives focus on increasing basic data skills and literacy in the context of state and local health department goals and activities.

By the end of the course, the student will be able to:

- 1) Characterize different types of public health data
- 2) Create a questionnaire
- 3) Collect and analyze data with current technology/software
- 4) Demonstrate basic knowledge of national, state, and local secondary public health data
- 5) Create tables and figures to display public health data
- 6) Assess advantages and disadvantages of using primary and secondary data
- 7) Interpret statistical significance within the context of published research

Dates for Modules	# weeks	Start Date (Mondays)	End Date (Sundays)
Module 1 Introduction and Icebreaker	1	January 27 th	February 2 nd
Module 2 Characterize types of public health data	3	February 3 rd	February 23
Module 3 Creating a questionnaire	1	February 24 th	March 2nd
Module 4 Collecting and analyzing data	2	March 3 rd	March 16 th
Module 5 Secondary Public Health Data Sources	2	March 17 th	March 30 st
Module 6 Assess Advantages Secondary Data	1	March 31st	April 6 th
Module 7 Creating figures and tables	1	April 7 th	April 13 th
Module 8 Interpreting Statistical Significance	1	April 14 th	April 20 st
Module 9. Final Course Project	2	April 14 th	April 29 th (Tuesday)
Final Exam Presentation		May 2 nd 5pm	

Course Instructor

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Course Resources

All necessary course information and links are provided on the Sakai website.

Assignments and Grading

Assignments will be grading using the graduate grading system (H="High Pass, clear excellence", P="Pass, entirely satisfactory," L="Low Pass, inadequate" and F="failure." Final grades will be assigned according to the following criteria 100-02: H, 91-76: P, and 75 or less:L.

Your grade in the module will be determined as a weighted average of your scores for the following assignments:

Assignments and Grading	weeks	Percentage	Due Date*
Module 1 Questionnaire 1 assignment	1	10%	February 2nd 5pm EST
Module 2 Data Types Assignments (3 weeks)	3		
Module 2. Part 1. Data		3.3%	February 9
Module 2. Part 2. GIS		3.3%	February 16
Module 2. Part 3. Qual.		3.3%	February 23
Module 3 Creating your own questionnaire (1 week)	1		March 2 nd
Part 1. Create quest.		10%	
Part 2. Critique quest.		5%	
Module 4 Collecting and analyzing data assignment	2	10%	March 16 th
Module 5 Secondary Public Health Data Sources	2	5%	March 30 st
Module 6 Assess Advantages of Secondary Data	1	10%	April 6 th
Module 7 Creating figures and tables	1	5%	April 13 th
Module 8 Interpreting Statistical Significance	1	5%	April 20 st
Final Project	2	15%	April 29 th (Tuesday)
Final Exam Presentation		10%	May 2 nd , 4pm
Class Participation		5%	
Total		100%	

*all assignments will need to be submitted by 5pm (Eastern Standard Time) on listed due date

Assignment Descriptions

Module 1. Questionnaire 1 Assignment

Your first assignment is in two parts. First you will introduce yourselves in your team discussion forum. Detailed instructions for the team forum are provided in the module. The second part is to complete the electronic questionnaire that will be sent to you via email and find 5 other colleagues or friends to also complete the questionnaire. The goal is to create a dataset that we will review, discuss, and analyze in later modules.

Module 2. Data Types Assignment

Part 1. (Week 1)-Categorize question types from Qualtrics Questionnaire (3.3%)

Part 2. (week 2)-GIS Assignment (3.3%)- Your assignment is to find a chloropleth map that you would use to support the allocation of a targeted public health education intervention at a local, national, or global scale. Please upload either the pdf or website with the image into the assignment tool and also post the link or image in your team discussion forum. Make sure to reference the source of the image/map.

Part3 (week 3)-Qualitative Assignment (3.3%)-using data collected from the class, convert qualitative open ended question to categorical results.

Module 3 .Creating your own questionnaire (this week is a 6 hour week)

1. For the first activity in this module, please complete the basic Qualtrics survey tutorial (2.5 hours).
2. Pick one of the topics from your list of top 3 public health topics.
3. Create a questionnaire with the following in mind: your questionnaire will be used to collect baseline information as to the specific public health problem, program, or intervention you will need to have at baseline. When thinking of questions, frame it in the context of 2 key hypotheses you would like to test. Include 20 questions, 5 which are demographic information that you will need and the other 15 substantive. Make sure that you use 4 of the different types of questions and response category types that you learned about in Module 2 (for example, ordinal, nominal, etc.). Please upload a pdf or word document with your questionnaire to the assignment tool.
4. You will then be paired with another class mate, and asked to critique their questionnaire with a standardized grading rubric. Submit your critique via the assignment tool.

Module 4 Collecting and analyzing data assignment

Objectives for this assignment are to learn to use Qualtrics to collect on-line data, as well as to learn about the format of datasets. You will also be introduced to variable coding, and manipulating your data to create graphs in Qualtrics. You will work with the questionnaire you designed last week.

Module 5. Secondary Public Health Data

Pose a research question on the topic for which you created the questionnaire. What data can you find at 1) the state level (North Carolina) on your topic, and 2) at the national level. Are there sufficient data to design an intervention on your topic? (i.e. bullying, obese teenagers, Medicaid fraud etc.) What data are they? If there are no existing data, what kinds of questions would you add, if any, to existing state and national surveys? Would the advantages of collecting your own data outweigh the advantages of using existing state and national survey data?

Module 6. Assess Advantages and Disadvantages of Primary and Secondary Data

Within the context of your selected research topic from Modules 3-5, first describe an optimal version of the data you collected in Module 4. This includes the following 1) define your target population, 2) describe the study design in which you would use the survey, 3) how you would recruit your study population from your target population including the statistical sampling procedure if you need one, and 4) describe how you would administer this electronic survey to your target population. Compare these hypothetical primary data with the secondary data you found in module 5. Describe two advantages and disadvantages of each data source. Describe two instances, within your selected topic area, in which these primary data would be preferable and two examples of times that secondary data would be preferable. Be specific.

Module 7. Creating figures and tables

Using principles discussed by Dr. Tufte (including avoidance of chart junk) recognize how basic graphs and tables (bar, column, pie, scatter, and line charts) can be used to clearly present results. In a two page document, provide responses to parts 1 & 2, and upload your document to the Module 7 assignment tool.

Part 1. Find a report produced by a state or county health department on your selected topic. Examine and critique how data (graphs and tables) are presented. Use the provided rubric to conduct the critique. Include a link to the report critiqued in the assignment document.

Part 2. Make four graphs from the data you collected in module 4. Present 1 piece of data in two different graphical formats. Determine which is more effective in conveying the result.

Module 8. Interpreting Statistical Significance

The assessment for this module will include an online quiz with questions on a number of graphs and include interpretation of p values, confidence intervals, and statistical significance.

Module 9. Final Project

Part 1. Use the topic you select for module assignments 3-5. Based on what you've found in the literature and the evidence in your primary and secondary data sources, propose a public health intervention for your target population. Summarize your primary and secondary data sources (for the sake of this assignment, assume that you have the optimal version of the data you described in Module 6.). Create a power point presentation with 10 slides. Begin with your background & theoretical rationale slides (include your substantive knowledge on the topic) for your proposed public health intervention. Include a graph from your primary data and 2 graphs from secondary data to support your proposed intervention. Also include 1 slide with references. (10%)

Part 2. Design an easily conducted questionnaire that you will use to assess your proposed intervention, and create the questionnaire in Qualtrics. Include an introduction for the target population, and a maximum of 25 questions. Make sure to include both demographic and substantive questions with both quantitative and qualitative response options. Upload a pdf of the survey and the Qualtrics link to the assignment tool. (15%)

Optional: CITI training-on-line IRB training module. (Extra credit)

There is also an option for extra credit, which will be added to your final project grade. The [Collaborative Institutional Training Initiative](#) (CITI) is a web-based training package on issues relating to human subjects research. The CITI web site is maintained by the University of

Miami, with content developed by a national consortium. CITI contains modules on topics like informed consent, vulnerable populations, ethical principles and IRB regulations. Each module has a short quiz at the end to assess understanding. Over 1300 institutions are using CITI for their mandatory training.

Online Class Statement

1. By enrolling as a student in this course, you agree to abide by the University of North Carolina at Chapel Hill policies related to the Acceptable Use of online resources. Please consult the Acceptable Use Policy (<http://help.unc.edu/1672>) on topics such as copyright, net-etiquette and privacy protection.
2. As part of this course you may be asked to participate in online discussions or other online activities that may include personal information about you or other students in the course. Please be respectful of the rights and protection of other participants under the UNC Chapel Hill Information Security Policies (http://its.unc.edu/ITS/about_its/its_policies/index.htm) when participating in online classes.
3. When using online resources offered by organizations not affiliated with UNC Chapel Hill, such as Google or Youtube, please note that the Terms and Conditions of these companies and not the University's Terms and Conditions apply. These third parties may offer different degrees of privacy protection and access rights to online content. You should be well aware of this when posting content to sites not managed by UNC Chapel Hill.
4. When links to sites outside of the unc.edu domain are inserted in class discussions, please be mindful that clicking on sites not affiliated with UNC-Chapel Hill may pose a risk for your computer due to the possible presence of malware on such sites.

Honor System

As part of the UNC Honor Code, Carolina students pledge to maintain ideals of academic honesty, personal integrity, and responsible citizenship. These ideals are embodied in the Honor Code set forth in the Instrument of Student Judicial government, with the support of students, faculty, and staff. When a student applies to Carolina, he/she undertakes a commitment to the principles embodied in the Honor Code. The University endeavors to instill in each student a love of learning, a commitment to fair and honorable conduct, and respect for the safety and welfare of others. It also strives to protect the community from those who, for whatever reason, do not embody these values in their conduct, and to protect the integrity of the University and its property for the benefit of all. It is our expectation that all students in the class will uphold the UNC Honor System. It shall be the responsibility of every student at the University of North Carolina at Chapel Hill to obey and to support the enforcement of the

Honor Code, which prohibits lying, cheating, or stealing when these actions involve academic processes or University, student, or academic personnel acting in an official capacity. <http://www.unc.edu/gradrecord/front/univregulations.html>

Course Evaluations

The School uses an on-line evaluation system to assess the quality of instruction and learning of the courses offered. The system is open for a two week period before the end of classes. An email will notify you that the system is open and a link to access the form. This evaluation system is anonymous. The instructors will only see the aggregate data with any comments at the end of the course after grades are turned in. It is your responsibility as a student to complete the evaluations. You will be sent multiple emails until it is completed.

We value your feedback on the course. We will conduct an in-house class evaluation, at the end of the semester. We will ask you for your (anonymous) feedback about specific class sessions, and assignments. We would like to incorporate your feedback and improve the course.