SEMESTER AT SEA COURSE SYLLABUS

Voyage: Summer 2013
Discipline: Public Health
PHS 3559: Health Research Methods
Division: Upper Division
Faculty Name: Paige P. Hornsby, Ph.D.

Pre-requisites:
Introductory level course in Public Health or one of the social sciences

COURSE DESCRIPTION

Much of what we know about human health and health-related behavior is based on quantitative and qualitative research. This course involves students in the research process from start to finish, including formulating a research question; conducting a background literature review; choosing a study design; developing data collection tools; recruiting a study population; collecting data; assuring data quality; analyzing data; and interpreting and presenting the results. In addition, students will study examples of health-related research from each of the countries visited on the voyage.

COURSE OBJECTIVES

1. Understand the purposes of health-related research and distinguish between quantitative and qualitative research;
2. Delineate each step involved in the process of health research;
3. Practice each step of the process of health research, using research science instruments and methodologies to collect, analyze and interpret data;
4. Describe the strengths and limitations of different types of health research;
5. Understand the importance of accurate communication of findings in health research;
6. Demonstrate effective written and oral skills for communicating the findings of health research;
7. Appreciate the need for respectful community engagement in conducting health research;
8. Employ ethical principles in the collection, maintenance, use and dissemination of data and information; and
9. Evaluate and compare health research from the countries visited on the voyage.

REQUIRED TEXTBOOKS

AUTHOR: Jacobsen, Kathryn H.
TITLE: Introduction to Health Research Methods
PUBLISHER: Jones & Bartlett Learning
ISBN #: 13:978-0-7637-8334-1
DATE/EDITION: 1st edition, 2012

TOPICAL OUTLINE OF COURSE

C1- June 18
Topic: The Purpose and Process of Health Research & Selecting a Topic
Questions:

1. What are the different types of health research?
2. What are the goals of health research?
3. What is the research process?
4. How can brainstorming and topic mapping be used to generate a topic?
5. How are exposure, disease and population defined and refined?
6. What is the value of various types of background information resources?
7. What makes research original?
8. How is plagiarism avoided?

Reading: Jacobsen, ch.s 1 - 3
Assignments due: None

C2- June 19
Topic: Identifying a Study Question
Questions:

1. What is the best study approach for a given research question?
2. How can the study goal and objectives be determined and clarified?
3. What are the important components of s study support team?
4. How can a study support team be assembled?
5. What are the different choices for study design?

Reading: Jacobsen, ch.s 4 - 6
Assignments due: None

C3- June 20
Topic: Selecting a Study Approach
Questions:

1. What is a Review?
2. What is a Correlational Study?
3. What is a Case Series?
4. What is a Cross-Sectional Survey?
5. What is a Case-Control Study?

Reading: Jacobsen ch.s 7 - 11
Assignments due: Group project choice of research topic and general plan

C4- June 21
Topic: Selecting a Study Approach (cont'd)
Questions:

1. What is a Cohort Study?
2. What is an Experimental Study?
3. What is a Qualitative Study?

Reading: Jacobsen, ch.s 12 - 14
Assignments due: Group project research question

June 22-June 25: Casablanca

C5- June 26
Topic: Designing the Study

Questions:

1. What are the key components of a research proposal?
2. How do a research proposal and a protocol differ?
3. What steps are needed to select a study population?
4. How is sample size estimated?

Reading: Jacobsen, ch.s 15 – 17; Moroccan study by Nejjari et al.
Assignments due: Group project brief literature review and study design plan

C6- June 27
Topic: Data Collection Tools
Questions:

1. What are the key steps in developing a questionnaire?
2. What are the advantages and disadvantages of self-administered surveys?
3. What are the advantages and disadvantages of interviews?
4. When and how are additional assessments useful?

Reading: Jacobsen, ch.s 18 - 20
Assignments due: Group project research proposal; Brief project proposal for Morocco

C7- June 28
Topic: Ethical Considerations
Questions:

1. What ethical principles are important in health research?
2. Why is informed consent necessary?
3. How is informed consent obtained?
4. Why is confidentiality necessary?
5. How is confidentiality maintained?
6. What are important cultural considerations?
7. What is an Institutional Review Board (IRB)?
8. What is the process for obtaining IRB approval for research?

Reading: Jacobsen, ch.s 21 - 24
Assignments due: Group project data collection plan/draft methods

June 29- July 2: Tunis

C8- July 3
Topic: Group Projects – Study Design
Reading: Tunisian study by Aounallah-Skhiri et al.
Assignments due: Group project IRB application

C9- July 4
Topic: Group Projects – Questionnaire Design
Reading: Reserve and electronic resources, as needed
Assignments due: Brief project proposal for Tunisia

C10- July 5
Topic: Group Projects – Data Collection Plan

Reading: Reserve and electronic resources, as needed
Assignments due: Group project draft questionnaire

July 6-10: Alexandria

C11- July 11
Topic: Group Projects – Data Collection Pilot Testing
Reading: Egyptian study by Labib et al.
Assignments due: None

C12- July 12
Topic: Group Projects – Data Collection
Reading: Reserve and electronic resources, as needed
Assignments due: Group project final questionnaire; Brief project proposal for Egypt

July 13-27: Istanbul

C13- July 18
Topic: Group Projects – Data Collection & Entry
Questions:
1. What is a codebook and how is one constructed?
2. How can the accuracy of data entry be assured?
3. What is data cleaning and why is it necessary?
4. When should data be recoded?
5. How can confidentiality be maintained during data collection and entry?

Reading: Jacobsen, ch. 25; Turkish study by Sezer et al.
Assignments due: Group project Excel spreadsheet

C14- July 19
Topic: Group Projects – Data Entry
Reading: Reserve and electronic resources, as needed
Assignments due: Brief project proposal for Turkey

July 20-23: Piraeus

C15- July 24
Topic: Group Projects – Data Cleaning
Reading: Greek study by Papadopoulou et al.
Assignments due: Group project preliminary Excel database

July 25: Study Day and Sea Olympics

C16- July 26
Topic: Group Projects – Data Cleaning & Analysis
Questions:
1. What analytic plan is appropriate for a given study design?

2. What are the different types of variables?
3. What are measures of central tendency?
4. What are measures of spread?
5. Why are descriptive statistics important?
6. When is statistical consultation necessary?

Reading: Jacobsen, ch. 26
Assignments due: Group project cleaned database; Brief project proposal for Greece

July 27-31: Marseilles

C17- August 1
Topic: Group Projects – Data Analysis
Questions:

1. What comparative statistics are appropriate for a given study design?
2. What is hypothesis testing?
3. How are *p*-values interpreted?
4. How are confidence intervals interpreted?
5. What are measures of association?
6. How is an appropriate statistical test chosen?

Reading: Jacobsen, ch. 27; French study by Berdot et al.
Assignments due: Group project descriptive statistics tables

C18- August 2
Topic: Group Project – Data Analysis (cont'd)
Questions:

1. What is confounding?
2. What is effect modification?
3. What is linear regression?
4. What is logistic regression?
5. What is survival analysis?
6. What is spatial analysis?

Reading: Jacobsen, ch. 28
Assignments due: Group project comparative statistics tables; Brief project proposal for France

August 3-5: Livorno
August 6-9: Civitavecchia

C19- August 10
Topic: Reporting Findings – Article Structure & Citations
Questions:

1. What are the essential elements of a research article?
2. How are references cited in a research article?
3. How do authors write in their own words?
4. How can plagiarism be avoided?

Reading: Jacobsen, ch.s 29 – 30; Italian study by Bravi et al.
Assignments due: Group project results

C20- August 11
Topic: Reporting Findings – Writing & Revising
Questions:
1. What are useful writing strategies?
2. How does a writer get started and stay motivated?
3. What is the appropriate writing style for a research article?
4. What are helpful steps for editing?

Reading: Jacobsen, ch.s 31 - 32
Assignments due: Group project citations; Brief project proposal for Italy

August 12-15: Barcelona

C21- August 16
Topic: Presenting Findings
Questions:
1. How is an abstract written?
2. What are the essential elements of a poster?
3. What are some design options for a poster?
4. How can the clarity of a poster be increased?
5. How can a poster be made visually interesting?

Reading: Jacobsen, ch. 33; Spanish study by Ochoa et al.
Assignments due: None

C22- August 17
Topic: Group Project Paper & Poster Workshop
Reading: None
Assignments due: Group project draft papers and posters; Brief project proposal for Spain

C23- August 18
Topic: Group Project Poster Presentations
Reading: None
Assignments due: Group project final posters

August 19: Study Day

C24-August 20: Final Exams (Note: there will not be a final exam for this course)

August 21: Packing and Reflection

August 22: Southampton

FIELD WORK

FIELD LAB (*At least 20 percent of the contact hours for each course, to be led by the instructor.*)
Proposal 1:

Title: Health Research at an Egyptian University
Port: Alexandria
Date: Wednesday, July 10, 2013

Proposal 2:
Title: Health Research at a French University
Port: Marseilles
Date: Wednesday, July 31, 2013

(Note: Please see Appendices for full description.)

FIELD ASSIGNMENTS

1. Brief paper (3 page) based on field lab experience on one of the following 3 topics:
    - Describe the current biomedical, epidemiologic and clinical research activities of the HIPH
    - Compare the priorities for research conducted at the HIPH to research priorities for a similar institute in the U.S.
    - Compare graduate training requirements at the HIPH to those at a similar institution in the U.S.

2. For 4 of the 8 ports visited, students will write a brief (1-2 page) research proposal for a specific health research issue relevant to the country visited. Each proposal should include the following:
    - Statement of research question/problem
    - Brief background information and justification
    - Design of proposed study
    - Strengths and limitations of proposed study

OTHER ASSIGNMENTS

Small group research project: Students will be divided into small groups of 4 – 6 to design and carry out a research study on the ship over the course of the voyage. The steps for the project are as follows:

1. Identify a topic of interest
2. Identify a research question
3. Conduct a brief literature review
4. Design the study
5. Design the data collection tool
6. Complete mock IRB protocol*
7. Collect data
8. Enter and clean the data
9. Analyze the data
10. Write up the findings in a paper (12 – 15 pages)
11. Present the findings at a final poster presentation session in class

*NOTE: Per a discussion on 9/13/12 with the Social and Behavioral IRB office at U.Va., IRB approval is not required for these projects, as they will be used for didactic purposes only and will not constitute a student thesis project or be submitted for publication.

METHODS OF EVALUATION / GRADING RUBRIC

Class attendance, class participation, and small group participation: (based on self- and group member evaluation)	20%
Field assignments:	20%
Field lab participation and paper:	20%
Group research study poster:	20%
Group research study paper:	20%

Grading Scale:

A+ 97 - 100	B+ 87 - 89	C+ 77 - 79	D 60 - 69
A 93 - 96	B 83 - 86	C 73 - 76	F < 60
A- 90 - 92	B- 80 - 82	C- 70 - 72	

RESERVE LIBRARY LIST

AUTHOR: Booth WC, Colomb GG, and Williams JM
TITLE: The Craft of Research
PUBLISHER: University of Chicago
ISBN #: 13:978-0-226-06566-3
DATE/EDITION: 3rd edition, 2008

AUTHOR: Day RA and Gastel B
TITLE: How to Write and Publish a Scientific Paper
PUBLISHER: Greenwood
ISBN #: 978-0-313-39197-2
DATE/EDITION: 7th edition, 2011

AUTHOR: Bailey SL and Handu D
TITLE: Introduction to Epidemiologic Research Methods in Public Health Practice
PUBLISHER: Jones & Bartlett Learning
ISBN #: 978-1-4496-2784-3
DATE/EDITION: 2012

AUTHOR: Iverson C et al.
TITLE: AMA Manual of Style
PUBLISHER: Oxford University Press
ISBN #: 978-0-19-517633-9
DATE/EDITION: 10th edition, 2007

ELECTRONIC COURSE MATERIALS

AUTHOR: Nejjari, C. et al.
ARTICLE/CHAPTER TITLE: Prevalence and demographic factors of smoking in Morocco
JOURNAL/BOOK TITLE: International Journal of Public Health
VOLUME: 54(6)
DATE: 2009
PAGES: 447-451

AUTHOR: Aounallah-Skhiri, H. et al.
ARTICLE/CHAPTER TITLE: Blood pressure and associated factors in a North African adolescent population: a national cross-sectional study in Tunisia
JOURNAL/BOOK TITLE: BMC Public Health
VOLUME: 12
DATE: 2012
PAGES: 98-108

AUTHOR: Labib, N. et al.
ARTICLE/CHAPTER TITLE: Comparison of cigarette and water pipe smoking among female university students in Egypt
JOURNAL/BOOK TITLE: Nicotine and Tobacco Research
VOLUME: 9(5)
DATE: 2007
PAGES: 591-596

AUTHOR: Sezer, H. et al.
ARTICLE/CHAPTER TITLE: Breast cancer risk factors in Turkey: a hospital-based case-control study
JOURNAL/BOOK TITLE: Asian Pacific Journal of Cancer
VOLUME: 12
DATE: 2011
PAGES: 2317-2322

AUTHOR: Papadopoulou, E. et al.
ARTICLE/CHAPTER TITLE: The effect of high doses of folic acid and iron supplementation in early-to-mid pregnancy on prematurity and fetal growth retardation: the mother-child cohort study in Crete, Greece
JOURNAL/BOOK TITLE: European Journal of Nutrition
VOLUME: doi:10.1007/s00394-012-0339-z
DATE: 2012
PAGES: ??

AUTHOR: Berdot, S. et al.
ARTICLE/CHAPTER TITLE: Inappropriate medication use and risk of falls – a prospective study in a large community-dwelling elderly cohort
JOURNAL/BOOK TITLE: BMC Geriatrics
VOLUME: doi:10.1186/1471-2318-9-30
DATE: 2009
PAGES: ??

AUTHOR: Bravi, F. et al.
ARTICLE/CHAPTER TITLE: Food groups and endometrial cancer risk: a case-control study from Italy
JOURNAL/BOOK TITLE: American Journal of Obstetrics and Gynecology

VOLUME: 200(3)
DATE: March 2009
PAGES: 293.e1-293.e7

AUTHOR: Ochoa, M. et al.
ARTICLE/CHAPTER TITLE: Predictor factors for childhood obesity in a Spanish case-control study
JOURNAL/BOOK TITLE: Nutrition
VOLUME: 23(5)
DATE: May 2007
PAGES: 379-384

AUTHOR: Sofi, F. et al.
ARTICLE/CHAPTER TITLE: Adherence to Mediterranean diet and health status: meta-analysis
JOURNAL/BOOK TITLE: British Medical Journal
VOLUME: 11
DATE: Sept 2008
PAGES: 337 - ?

ADDITIONAL RESOURCES

1. Students will need access to Excel and Epi Info, a free statistical analysis tool available from the CDC at: http://wwwn.cdc.gov/epiinfo/7/
2. Students groups will need a poster board for the end-of-voyage poster presentations.

HONOR CODE

Semester at Sea students enroll in an academic program administered by the University of Virginia, and thus bind themselves to the University's honor code. The code prohibits all acts of lying, cheating, and stealing. Please consult the Voyager's Handbook for further explanation of what constitutes an honor offense.

Each written assignment for this course must be pledged by the student as follows: "On my honor as a student, I pledge that I have neither given nor received aid on this assignment." The pledge must be signed, or, in the case of an electronic file, signed "[signed]."