Advanced Research Methods in Health – HLTH 711

Semester: Fall 2013
Classroom and Time: SPH 2387, 4-6:45pm Wednesdays
Instructor: Dr. Kerry M. Green
Office: SPH 2375
Phone: 301-405-2524
Email: greenkm@umd.edu
Office Hours: Wednesdays 1-3pm

Course Pre- and Co-requisites:
Required: HLTH 710
Recommended: HTLH 652, HLTH653

Required Texts and Other Readings:
Required: See class schedule for readings
Recommended:

Additional Materials Required: SPSS or equivalent statistical software

Course Description:
The course covers advanced research methods for doctoral students with the focus primarily on learning how to apply these methods to answer public health research questions. Each week this seminar style class will expose students to different research methods techniques and their application.

Course Learning Objectives:
Upon completing this course, the student will be able to:
1. Critically evaluate various published research reports.
2. Read, understand, and critique statistical, methods and application articles.
3. Develop appropriate research aims and hypotheses.
4. Develop a conceptual framework to address a public health problem.
5. Orally present and defend a research proposal.
6. Write an effective NIH R01 grant proposal.

Program Competencies Addressed in this Course:
The following competencies for the doctorate in Behavioral and Community Health are addressed in this course:
1. Apply the steps involved in examining a conceptual model.
   a. Conduct a thorough literature review and know its limitations.
   b. Propose a research question and hypothesis given a questionnaire and data set.
   c. Develop a conceptual model.
   d. Apply an appropriate statistical analysis plan.
   e. Provide an appropriate interpretation of data analysis.
2. Assess limitations of the internal and external validity of research.
3. Critically appraise reports of research and evaluation.
4. Identify sources and processes for research funding.
5. Present clear, engaging, and informative oral research reports.

Previously Learned Competencies Reinforced in HLTH 711:
1. Describe a public health problem in terms of magnitude, person, time and place.
2. Draw appropriate inferences from epidemiologic data.
3. Describe and apply appropriate descriptive statistical methods for summarizing public health data.
4. Critically review and summarize statistical analyses presented in public health literature.
5. Draw appropriate inferences based on statistical analyses used in public health research.

Course Requirements: This is a seminar style class. It is expected that each student comes to class having read and fully comprehended the required reading and ready to participate in and lead class discussions. Attendance at each class is critical to master the material.

- Reaction papers are due at each class and will assess students’ comprehension of the assigned reading.
- Presentations will allow students to orally describe and defend their research project.
- Exams will assess students’ ability to develop a research strategy to address a public health research question.
- Assignment 1 (specific aims) will begin the process of finding a funding opportunity and generating a research topic and accompanying specific aims and hypotheses.
- The Grant Proposal Assignment will assess students’ ability to develop a research question, specific aims, hypotheses, a conceptual model, a research design, and an analytic plan for an R01 data collection grant application.

Course Policies:

Email – The Official University Correspondence:
Verify your email address by going to www.my.umd.edu.

All enrolled students are provided access to the University’s email system and an email account. All official University email communication will be sent to this email address (or an alternate address if provided by the student). Email has been adopted as the primary means for sending official communications to students, so email must be checked on a regular basis. Academic advisors, faculty, and campus administrative offices use email to communicate important and time-sensitive notices.

Students are responsible for keeping their email address up to date or for redirecting or forwarding email to another address. Failure to check email, errors in forwarding email, and returned email (from “full mailbox” or “unknown user” errors for example), will not excuse a student from missing course or University announcement, messages, deadlines, etc. Email addresses can be quickly and easily updated at www.my.umd.edu or in-person at the Student Service Counter on the first floor of the Mitchell Building.

For technical support for University email: www.helpdesk.umd.edu or call 301-405-1400.
Absence Policy:
In accordance with University policy if you are absent for a single (1) lecture due to illness or some form of personal or family emergency, this absence will be considered “excused” and the instructor will accept a note from you attesting to the date of the illness/incident, along with an acknowledgement that the information is true. Whenever feasible, you should try to contact the instructor in advance.

Multiple or prolonged absences, and absences that prevent attendance at a major scheduled grading event (like an exam or test) will require written documentation from an appropriate health care provider/organization.

A link to pull information on the new policy covering absences from class can be found at http://www.president.umd.edu/policies/v100g.html

Late work and Missed Exams / Assignments:
Exams can only be made up if there is a University approved absence. Points will be deducted for late assignments.

Religious Observances:
The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the student's responsibility to inform the instructor in advance of any intended absences for religious observance.

Special Accommodations / Disability Support Services:
If you have a documented disability and wish to discuss academic accommodations for test taking or other needs, you will need documentation from Disability Support Service (301-314-7682). If you are ill or encountering personal difficulties, please let the instructor know as soon as possible. You can also contact Learning Assistance Services (301-314-7693) and/or the Counseling Center (301-314-7651) for assistance.

Academic Integrity:
The University's code of academic integrity is designed to ensure that the principle of academic honesty is upheld. Any of the following acts, when committed by a student, constitutes academic dishonesty:

- **CHEATING**: intentionally using or attempting to use unauthorized materials, information, or study aids in an academic exercise.
- **FABRICATION**: intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- **FACILITATING ACADEMIC DISHONESTY**: intentionally or knowingly helping or attempting to help another to violate any provision of this code.
- **PLAGIARISM**: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

For more information see: http://www.shc.umd.edu/code.html.
The Honor Pledge is a statement undergraduate and graduate students should be asked to write by hand and sign on examinations, papers, or other academic assignments. The Pledge reads:

\[ I \text{ pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination. } \]

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit [http://www.shc.umd.edu](http://www.shc.umd.edu).

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Inclement Weather / University Closings:
In the event that the University is closed for an emergency or extended period of time, the instructor will communicate to students regarding schedule adjustments, including rescheduling of examinations and assignments due to inclement weather and campus emergencies. Official closures and delays are announced on the campus website ([http://www.umd.edu](http://www.umd.edu)) and snow phone line (301-405-SNOW), as well as local radio and TV stations.

Course Evaluations ([www.CourseEvalUM.umd.edu](http://www.CourseEvalUM.umd.edu))
The University, the School of Public Health, and the Department of Behavioral and Community Health are committed to the use of student course evaluations for improving the student experience, course and curriculum delivery, and faculty instruction. Your evaluations help instructors improve their courses; help deans and department chairs decide on merit pay for faculty, renewal of contracts, and support tenure and promotion decisions; and help current and future students decide on classes.

Grading Procedures:
Thought papers: 20 points (see canvas for the breakdown)
Specific Aims : 5 points 10/23
Exam 1: 20 points 10/30
Grant presentation: 10 points 12/11
Final Grant Proposal: 25 points 12/18
Exam 2: 20 points 12/18
Final letter grades will be assigned according to the following system:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
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<tbody>
<tr>
<td>A+</td>
<td>97+</td>
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<tr>
<td>A</td>
<td>93-96</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
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<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
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<tr>
<td>C+</td>
<td>77-79</td>
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<tr>
<td>C</td>
<td>73-76</td>
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<tr>
<td>C-</td>
<td>70-72</td>
</tr>
<tr>
<td>D+</td>
<td>67-69</td>
</tr>
<tr>
<td>D</td>
<td>63-66</td>
</tr>
<tr>
<td>D-</td>
<td>60-62</td>
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<tr>
<td>F</td>
<td>below 60</td>
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Course Outline

<table>
<thead>
<tr>
<th>Class 1 – intro/assessment</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Conceptual frameworks</td>
<td>9/11</td>
</tr>
<tr>
<td>PARTICIPATION ASSIGNMENT</td>
<td></td>
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<tr>
<td>Bring 2 examples of conceptual frameworks to share and one discussion question</td>
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</tbody>
</table>

READINGS


<table>
<thead>
<tr>
<th>Grant writing! (Writing hypotheses, research questions, and specific aims)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTICIPATION ASSIGNMENT</td>
<td></td>
</tr>
<tr>
<td>Complete the worksheet handout</td>
<td></td>
</tr>
</tbody>
</table>

READINGS

- Mohan-Ram, V., (2000, Jan-Feb). How not to kill a grant application, Parts 1-3, Science Careers.

<table>
<thead>
<tr>
<th>Research Design</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>PARTICIPATION ASSIGNMENT</td>
<td></td>
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<tr>
<td>Reading response and discussion questions</td>
<td></td>
</tr>
</tbody>
</table>

READINGS

PARTICIPATION ASSIGNMENT

Reading response and discussion questions

READINGS

5. Causal Inference


Additional resources/Optional Readings:


6. Mediation

PARTICIPATION ASSIGNMENT

Write a mediation hypothesis to share

READINGS


Read at least 1:

7. Moderation

PARTICIPATION ASSIGNMENT
Write a moderation hypothesis to share

READINGS

8. Grant Writing II (including grant review)

ASSIGNMENT: Assignment 1 (specific aims) due

READINGS
- Distributed Grant Application

9. MIDTERM

10. Survey Methodology

PARTICIPATION ASSIGNMENT
Reading response and discussion questions

READINGS

**Choose 1 to better understand mode effects in survey design:**

11. Missing data & Power

PARTICIPATION ASSIGNMENT
Reading response and discussion questions

10/16
10/23
10/30
11/6
11/13
READINGS

Additional Resource:

12. Data management and measurement 11/20
(Bring laptop with SPSS)

PARTICIPATION ASSIGNMENT
Reading response and discussion questions

READINGS (read at least 2)

13. Ethics in research (Scientific Misconduct) [NO CLASS] 11/27

PARTICIPATION ASSIGNMENT
Reading response and discussion questions

READINGS

Additional Resources:


14. Latent variable modeling 12/4

**PARTICIPATION ASSIGNMENT**

Reading response and discussion questions

**READINGS**


**Additional Resources:**


15. Mixed methods & Presentations 12/11

**PARTICIPATION ASSIGNMENT**

Reading response and discussion questions

**READINGS**


**Additional Resource:**


**Additional Literature, Websites and Other Resources:**

**Validity**


Writing and Reviewing Articles:


