

George Mason University
College of Education and Human Development
Exercise, Fitness and Health Promotion
EFHP 620 (002) – Research Methods for Applied Kinesiology (3)
3 Credits, Fall 2017
[Tuesdays/10:30 AM – 1:10 PM] [BRH 132 – Science & Technology Campus]

Faculty

Name: Nelson Cortes

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Prerequisites/Corequisites

Graduate Standing or Permission of Instructor

University Catalog Course Description

Introduction to the techniques of research generally employed in the fields of exercise science and health.

Course Overview

An introduction to the basic principles of research methods in Applied Kinesiology. A study of research designs, measurement theory, data collection methods, and scientific writing principles specific to health and human performance.

Course Delivery Method

This course is delivered through a hybrid model using classroom instruction (face to face) and online assignments.

Learner Outcomes or Objectives

At the completion of this course students should be able to:

1. Explain the importance of research as a means to solve problems in applied kinesiology.
2. Explain the application of different research approaches in applied kinesiology to solve problems in their professional field.
3. Identify threats to validity and reliability of a study and be able to design applied kinesiology studies to minimize such threats.
4. Explain various aspects of research designs.
5. Develop research practitioners that critically utilize the scientific literature in applied kinesiology.
6. Conduct a systematic analysis of the literature using hand and computer search techniques.
7. Write a research proposal in accordance with standards in applied kinesiology.
8. Design an experiment in accordance with the appropriate research methodology.
9. Appreciate and understand ethical issues associated with research in applied kinesiology.

Required Texts

Portney LG, Watkins MP. Foundations of Clinical Research: Applications to Practice. 3rd Ed. Pearson Prentice Hall; 2008

Iverson C, Christiansen S, Flanagin A, et al. AMA Manual of Style: A Guide for Authors and Editors. 10th ed. New York, NY: Oxford University Press; 2007

Additional Requirements

Additional various readings/articles as assigned

All students will have to use Zotero as their citation management software, and provide a digital copy of the zotero library. Online tutorials, guides, and workshops are available at Mason's library website.

Zotero works primarily with Firefox browser, which is also free for download at:

<http://www.mozilla.org/en-US/firefox/new/>

An extension for the google browser (Chrome) also exists.

There is also a standalone version for windows and Mac that can be downloaded from

<https://www.zotero.org/>

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

Assignments and Examinations

In Class Assignments: In Class Assignments will occur primarily on the second half of the class (see detailed schedule below).

Scientific Research Proposal

This assignment is the culminating project for the course and will require both a paper and a professional presentation. The assignment is designed to assist you with identifying, clarifying, and the thoughtfully developing a research topic and theoretical framework for your graduate research project. You will be required to write and present a scientific research proposal describing a project of interest to you and a faculty member within the EFHP program. The development of a research proposal illustrates familiarity with problem formation and hypothesis development, review and critical analysis of the scholarly literature, justification and application of appropriate methodology, and consideration of the implications of research findings. **DUE DECEMBER 12, 2017**

Proposal Presentation

The intent of this assignment is to develop your presentation skills and communicate your proposed research to your colleagues and professors. **DUE NOVEMBER 28, 2017**

Class Participation & Attendance

Attending, being professional, and active participation are important components of this course and are expected from all students.

Students are expected to be on time, attend all class meetings and be prepared for in class assignments and projects. Excused absences include the following: illness (must bring a receipt or note from a

doctor), family death, athletic/academic event, and others at the discretion of the instructor. For known upcoming absences, students must contact the instructor at least one week in advance to the missed class to make up work. In the case of illness or some other unforeseen absence, the student must contact the instructor via e-mail or telephone. At the next attended class meeting the student will discuss material that is to be completed. It is the student's obligation to pursue any make-up work.

Students are expected to read assigned material (e.g., chapters, articles) prior to class. Class will be based on discussion lead by the students and moderated by the instructor.

Academic Load

Although many students must work to meet living expenses, employment and personal responsibilities are not a consideration for missed classes, late or incomplete assignments, the course content, or the course schedule (see <http://catalog.gmu.edu>). Student employment does not take priority over academic obligations. It is recognized that many students need to work in order to meet living expenses, however, there are distinct guidelines for students in terms of the number of credit hours which should be attempted based on how many hours per week a student has outside employment. For additional information on this subject, please see the GMU Academic Catalog (http://catalog.gmu.edu/content.php?catoid=5&navoid=104#Registration_attendance) for further information. Students who fail to observe these guidelines may expect no special consideration for academic problems arising from the pressures of employment.

Written Assignments

All written assignments must be typed in Microsoft Word, and formatted as follows (unless otherwise specified):

- double spaced,
- 12 point Times New Roman font,
- 1 inch margins,
- your name and title in the running header at top left-hand corner,
- continuous line numbers on left margin, and
- page numbers centered in footer.

Failure to comply with any or all parts of this format will result in an unacceptable assignment, which corresponds to zero (0) points. If you do not submit your document in a Microsoft Word document (doc, docx) will also be considered an unacceptable assignment, which corresponds to zero (0) points.

Pay close attention to spelling and grammar as these will count towards your grade on written assignments. American Medical Association Manual (AMA) of Style (10th edition) format must be used for all written work in this class (e.g., in referencing, creation of tables, and formatting headers for paper sections).

Assignments must be turned in on Blackboard/MyMason Portal by the beginning of class on the specified date due (unless otherwise specified). No late assignments will be accepted. It is recommended that students keep copies of all submitted work.

Class Material

A combination of approaches is used in class to assist your learning. These include reading assignments and discussion of the reading, learning activities that provide practical experience in research methods, analyzing research examples, online activities, and homework preparing various

elements of a research proposal. You are encouraged to ask questions about the assigned reading, followed by discussion and learning activities. This means you must read the material before the class! Be prepared to be called on at random regarding the readings.

Technology Use During Class

As per GMU policy, all sound emitting technology is required to be turned off during the class meeting time. No sound emitting technology (e.g., cell phones, smart phones, iPads, Tablets, pagers, etc.) is allowed at any time during the class period. Students who are observed using any form of technology inappropriately (e.g., sending text messages from cell phones, visiting social network sites from laptops, etc.) will be dismissed from class for the day, counted as an absence, and not permitted to make up missed assignments. Additionally, no laptop computers (e.g., netbooks, notebooks, tablets, etc.) will be permitted for use during class time unless with permission from the instructor.

E-mail Correspondence

Only messages that originate from a George Mason University address will be accepted; emails from all other email domains (e.g., Gmail, Hotmail, yahoo, etc.) will not be answered.

Please address the subject line for all email pertaining to this course as: EFHP 620: Last Name – purpose of email. The following is an appropriate professional format:

Dear Dr. Cortes [*Beginning salutation*]

I have a question regarding one of the assignments. [*Text body*]

Regards, [*Ending Salutation*]

Student Name [*Your name*]

Note: All email will be responded to in the order in which it is received.

Course Performance Evaluation Weighting

This course will be graded on a point system, with a total of 100 possible points.

	Requirements	Points
Assignments		
#1	Article reviews (2)	5
#2	Hypothesis (Draft)	5
#3	Methods (Draft)	5
#4	Synthesis Matrix (Draft)	5
	Scientific Research Proposal	
	• Introduction with hypothesis	10
	• Methods	25
	• References	5
#5	Appendices:	
	• Ethics/CITI Training Certificate	2
	• Project Timeline (2-year period)	3
	• Human Subjects Review Board / Informed Consent Form	5
#6	Proposal Presentation	20
#7	Class Participation / Attendance	10
TOTAL		100

Grading Policies

The student's final letter grade will be earned based on the following scale:

Grade	Percentage
A	94 – 100%
A-	90 – 93%
B+	88 – 89%
B	84 – 87%
B-	80 – 83%
C	70 – 79%
F	0 – 69%

Note: Although a B- is a satisfactory grade for a course, students must maintain a 3.00 average in their degree program.

Professional Dispositions

Students are expected to exhibit professional behaviors and dispositions at all times.

See <https://cehd.gmu.edu/students/policies-procedures/>

Class Schedule

Week	Topic	Chapter/Assignment Due Date
1 – 8/29	Overview of course requirements / Research Process	Chapter 1 & 32
	Searching the Literature	Chapter 31
2 – 9/5	Zotero – Building your bibliography	
	<i>In Class: Searching the Literature and Zotero</i>	
3 – 9/12	Critical Review of an Article	Chapter 31 & 34
	Synthesis Matrix – Organizing your articles	
	Identifying Hypothesis in articles	
	<i>In Class: Finding Articles</i>	<i>Provide a reference list of 20 articles in a word document that relate to your scientific research proposal topic. Write a brief sentence on why you chose each article to support your topic. A minimum of 2 articles must be newly acquired by you and published in 2015/2016</i>
4 – 9/19	Formulating the Research Question / Writing Hypothesis	Chapters 2 & 34
	<i>In Class: Article Review Assignments</i>	<i>Article Review Assignments (2)</i>
5 – 9/26	Sampling	Chapter 8
	Validity of Measurements	Chapter 6 & 9
	<i>In Class: Introduction & Hypothesis</i>	<i>Introduction / Hypothesis (draft)</i>
6 – 10/3	Research Designs	Chapter 10-11
7 – 10/10	NO CLASS – COLUMBUS DAY RECESS	
8 – 10/17	Research Designs	Chapter 10-11
	Exploratory Research	Chapter 13
	Descriptive Research	Chapter 14

9 – 10/24	Systematic reviews and meta-analysis <i>In Class: Identifying Research Designs in Peer Reviewed Manuscripts</i>	Chapter 16 <i>Choose one article that you have found for your research topic. In 2 minutes during class, present the research design of that article and one alternative research design that could be used for the same hypothesis.</i>
10 – 10/31	Ethical Issues in Research Human Subjects Review Board/Informed Consent <i>In Cass: Synthesis Matrix</i>	Chapter 3
11 – 11/7	Reliability of Measurements <i>In Class: CITI Training Certificate / Human Subjects Review Board/Informed Consent</i>	Methods Draft Due
12 – 11/14	Data Analysis – Brief Introduction <i>Online: Excel management and organization for your data</i>	<i>Develop an excel document with your data fields and codes. Justify data organization and choices for variable names etc.</i> Synthesis Matrix Draft Due
13 – 11/21	Scientific Research Proposal / Presentations <i>Online: Scientific Research Proposal / Presentations</i>	
14 – 11/28	STUDENT PRESENTATIONS	ALL PRESENTATIONS DUE
15 – 12/5	STUDENT PRESENTATIONS	
16 – 12/12	Scientific Research Proposal Due @ 10:30AM	Scientific Research Proposal Due

Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code (see <http://oai.gmu.edu/the-mason-honor-code/>).
- Students must follow the university policy for Responsible Use of Computing (see <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <http://ods.gmu.edu/>).
- Students must follow the university policy stating that all sound emitting devices shall be silenced during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to Tk20 should be directed to tk20help@gmu.edu or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <http://coursesupport.gmu.edu/>.
- For information on student support resources on campus, see <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>

For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/students/> .

Assessment Rubrics

Final Project

Standard	Exceeds Expectations (10)	Meets Expectations (8)	Below Expectations (5)	Unacceptable (0)
<p>Problem Definition - Hypothesis: Stated the research problem clearly, provided motivation for undertaking the research</p>	<p>Stated the research problem clearly, provided motivation for undertaking the research</p>	<p>Minor changes are needed to state the research problem clearly, provided motivation for undertaking the research</p>	<p>Major changes are needed to state the research problem clearly, provided motivation for undertaking the research</p>	<p>Did not state the research problem clearly, provided motivation for undertaking the research</p>
<p>Significance - Impact of Proposed Research: (a) Demonstrated the potential value of solution or contribution to the research problem in advancing knowledge (a) within and (b) outside the area/field of study.</p>	<p>Demonstrated the potential value of solution or contribution to the research problem in advancing knowledge (a) within and (b) outside the area/field of study.</p>	<p>Minor changes are needed to demonstrate the potential value of solution or contribution to the research problem in advancing knowledge (a) within and (b) outside the area/field of study.</p>	<p>Major changes are needed to demonstrate the potential value of solution or contribution to the research problem in advancing knowledge (a) within and (b) outside the area/field of study.</p>	<p>Did not Demonstrate the potential value of solution or contribution to the research problem in advancing knowledge (a) within and (b) outside the area/field of study.</p>
<p>Research and Design Methods - Solution Approach: Applied sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively</p>	<p>Applied sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively</p>	<p>Minor changes are needed to apply sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively</p>	<p>Major changes are needed to apply sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively</p>	<p>Did not apply sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively</p>

<p>Critical Thinking: Demonstrated capability for conducting research in the area of study, significant expertise in the area, and ability to make original contributions to the field</p>	<p>Demonstrated capability for conducting research in the area of study, significant expertise in the area, and ability to make original contributions to the field</p>	<p>Minor changes are needed to demonstrate capability for conducting research in the area of study, significant expertise in the area, and ability to make original contributions to the field</p>	<p>Major changes are needed to demonstrate capability for conducting research in the area of study, significant expertise in the area, and ability to make original contributions to the field</p>	<p>Did not demonstrate capability for conducting research in the area of study, significant expertise in the area, and ability to make original contributions to the field</p>
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