

George Mason University
College of Education and Human Development
Masters of Science in Exercise, Fitness, and Health Promotion

EFHP 620-002- Research Methods for Applied Kinesiology
3 Credits, Fall 2016

Tuesdays/Thursdays: 10:30AM – 11:45AM
Bull Run Hall 134 – Science and Technology Campus

Faculty

Name: Joel Martin
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Prerequisites/Corequisites

Graduate Status

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 will be delivered using a hybrid (~50% online) format.

Learner Outcomes or Objectives

This course is designed to enable students to do the following:

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.

Professional Standards

Upon completion of this course, students will have met the following professional standards:

Required Texts

- Portney LG, Watkins MP. *Foundations of Clinical Research: Applications to Practice*. 3rd Ed. Pearson Prentice Hall; 2008 (Required)
- 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 various readings/articles as assigned

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

Online Assignments: Online assignments will occur primarily on Thursdays (see detailed schedule below). The assignments will be posted on “Discussion Board” area of BlackBoard. For each activity, you will have to create a new thread with your last name and activity name (e.g., Cortes – Reference List). Most of the assignments you will have to comment on other students’ posts, so do not forget to check the other threads and comment appropriately. Assignments will typically be made available at 8:30AM and will close at 10:30AM of that day. There will be a few exceptions that will be open earlier (e.g., HSRB/informed consent) as they require extensive work prior to the day of the online posting.

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 8, 2016**

Proposal Presentation: The intent of this assignment is to develop your presentation skills and

communicate your proposed research to your colleagues and professors. **Due DECEMBER 15, 2016**

• **Other Requirements**

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

• **Course Performance Evaluation Weighting**

<i>Assignments</i>		<i>Points</i>	<i>Due Dates</i>
#1	Online Assignments	10	Sept 8, 15, 29 Oct 6 Nov 3, 10, 17 Dec 1
#2	Purpose Statement (Draft)	5	Oct 13
#3	Methods (Draft)	10	Nov 22
#4	References (Draft)	5	Oct 25
#5	Scientific Research Proposal		Dec 8
	• Introduction	10	
	• Methods	15	
	• References	5	
	Appendices:		
	• Hypothesis – if applicable	2	
	• Literature Review	2	
	• Ethics/CITI Training Certificate	2	
	• Project Timeline	2	
• Human Subjects Review Board / Informed Consent Form	2		
#6	Proposal Presentation	10	Dec 13
#7	Online Quizzes	10	Sept 29, Oct 20, Oct 27
#8	Class Participation / Attendance	10	
TOTAL		100	

• **Grading Policies**

Grade	Percentage	Quality Points	Grade	Percentage	Quality Points
A+	93%	4.00	B	83%	3.00
A	93%	4.00	B-	80%	2.67*
A-	90%	3.67	C	73%	2.00
B+	87%	3.33	F	<73%	0.00

Note: * Although a B- is a satisfactory grade for a course, students must maintain a 3.00 average in their degree program and present a 3.00 GPA on the courses listed on the graduation application.

Attendance

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.

Participation

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. I recognize 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.

Honor Code

Students are held to the standards of the George Mason University Honor Code (see <http://honorcode.gmu.edu> for details). Violations, including cheating and plagiarism, will be reported to the Honor Committee. Student assignments may be put through plagiarism detecting software.

Written Assignments

All 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 be 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

I use a combination of approaches 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

Template Revision Date: August 2016

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 networking 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. 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. Martin (*Beginning salutation*)

I have a question regarding one of the assignments. (*Text body*)

Regards, (*Ending Salutation*)

Dr. Martin (*Your name*)

Note: All email will be responded to in the order in which it is received. Students should allow 48 hours for a response.

Professional Dispositions

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

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/api/tk20>. Questions or concerns regarding use of Blackboard should be directed to <http://coursessupport.gmu.edu/>.
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing (see <http://writingcenter.gmu.edu/>).
- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance (see <http://caps.gmu.edu/>).
- The George Mason University Office of Student Support staff helps students negotiate life situations by connecting them with appropriate campus and off-campus resources. Students in need of these services may contact the office by phone (703-993-5376). Concerned students, faculty and staff may also make a referral to express concern for the safety or well-being of a Mason student or the community by going to <http://studentsupport.gmu.edu/>, and the OSS staff will follow up with the student.

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

Class Schedule

Week	Date	Topic	Chapter/Assignment Due Date
1	Aug 30 ^T	Welcome! Overview of course.	
	Sept 1 TH	Research Process: Presentations – overview of research project, challenges, and next steps with timelines 2 nd Year Students Present / Discuss <i>Location: 257 Bull Run Hall</i>	Chapter 1 & 32
2	Sept 6 ^T	Searching the Literature	Chapter 31
	Sept 8 TH	<i>Online: Finding Articles</i>	<i>Provide a reference list of 10 articles that relate to your scientific research proposal topic. Write a brief sentence on why you chose each article to support your topic.</i>
3	Sept 13 ^T	Zotero	
	Sept 15 TH	Zotero	<i>Online Assignment</i>
4	Sept 20 ^T	Critical review of articles / identifying hypothesis / Theory to practice	Chapters 2 & 34
	Sept 22 TH	<i>Online: Article Review Assignment</i>	<i>Article Review Assignment. Share your table online, and provide comments to other students' tables. No articles need to be reviewed at this point.</i>

5	Sept 27 ^T	Synthesizing literature: Presentations 2 nd Year Students Present / Discuss <i>Location: 257 Bull Run Hall</i>	2nd Year Students: Come to class prepared to share concept map
	Sept 29 TH	<i>Online: Quiz #1 & AMA style</i>	<i>Online Quiz / AMA Style – present a brief paragraph about your study supported by citations using AMA style. Building bibliography</i>
6	Oct 4 ^T	Formulating the Research Question / Writing the Hypothesis <i>PhD Guest Lecture</i> <i>Location: 257 Bull Run Hall</i>	Chapter 7
	Oct 6 TH	<i>Online: Introduction & Hypothesis</i>	<i>Present your purpose statement/research questions and hypothesis (if applicable) on blackboard. Provide a minimum of one comment on two other students' purpose statement. Be constructive and identify aspects that may be missing in their purpose statement.</i>
7	Oct 11 ^T	<i>No Class – Columbus Day Recess</i>	
	Oct 13 TH	Present purpose, research questions and specific aims paragraph to class 2 nd Year Students Present / Discuss – 5 minutes each <i>Location: 257 Bull Run Hall</i>	Purpose/Research Question/Specific Aims Draft Due
8	Oct 18 ^T	Research Designs <i>PhD Guest Lecture</i> <i>Location: 257 Bull Run Hall</i>	Chapter 10, 11, 13, 14 & 16

	Oct 20 TH	<p><i>Online: Quiz #2</i> <i>Online: Identifying Research Designs in Peer Reviewed Manuscripts</i></p>	<p><i>Choose one article that you have found for your research topic, and write one paragraph about the research design of that article. Also, present one alternative research design that could be used for the same hypothesis.</i></p>
9	Oct 25 ^T	<p>Matching research questions to your analyses 2nd Year Students Present / Discuss – 5 minutes each <i>Location: 257 Bull Run Hall</i></p>	References Draft Due
	Oct 27 TH	<p><i>Online: Quiz #3</i></p>	
10	Nov 1 ^T	<p>Sampling Measurements: Principles, reliability, validity <i>PhD Guest Lecture</i> <i>Location: 257 Bull Run Hall</i></p>	<p>Chapter 8 Chapter 4, 5, 6 & 9</p>
	Nov 3 Th	<p><i>Online: Sampling</i></p>	<p><i>Using one of the articles you have found for your project, present your decision for: a) Subjects age, b) subjects sex, and c) inclusion and exclusion criteria. Explain your decisions in one paragraph. Further, comment on other students sampling options</i></p>
11	Nov 8 ^T	<p>Data Analysis <i>PhD Guest Lecture</i> <i>Location: 257 Bull Run Hall</i></p>	
	Nov 10 TH	<p><i>Online: Project timeline</i></p>	<p><i>Submit your anticipated project timeline</i></p>
12	Nov 15 ^T	<p>Data Presentation: Graphs, Tables, Figures</p>	

	Nov 17 TH	<i>Online: Methods Section</i>	<i>Using one article from your literature review, identify areas that are missing (or can be improved) in the methods sections. Then, provide a paragraph on how you would re-write that section to overcome its weakness(es).</i>
13	Nov 22 ^T	Writing day / Feedback day	Methods Draft Due
	Nov 24 TH	<i>No Class – Thanksgiving Recess</i>	
14	Nov 29 ^T	Human Subjects Review Board / Informed Consent	
	Dec 1 TH	<i>Online: Human Subjects Review Board/Informed Consent</i>	<i>Provide HSRB/Informed Consent (draft)</i>
15	Dec 6 ^T	Putting all the pieces together / Feedback day	
	Dec 8 TH	<i>Online: Work on Proposal and Proposal Presentation</i>	Final Proposal Due
	Dec 13^T	Presentations – 10:30 am to 1:15 pm Location: 257 Bull Run Hall	Presentations due
Note: The instructor reserves the right to make changes to the course syllabus and/or schedule at any time. Changes will always posted on MyMason Portal/BlackBoard			

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

Assessment Rubric(s)

Research Proposal Assignment

Grading Rubric

Standard	Exceeds Expectations (10)	Meets Expectations (8)	Below Expectations (5)	Unacceptable (0)
Problem Definition - Hypothesis: Stated the research problem clearly, provided motivation for undertaking the research	Stated the research problem clearly, provided motivation for undertaking the research	Minor changes are needed to state the research problem clearly, provided motivation for undertaking the research	Major changes are needed to state the research problem clearly, provided motivation for undertaking the research	Did not state the research problem clearly, provided motivation for undertaking the research
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.	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.	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.	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.	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.
Research and Design Methods - Solution Approach: Applied sound state-of-the-field research methods/tools to solve the defined problem and has described the	Applied sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively	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	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	Did not apply sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively

methods/tools effectively				
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	Demonstrated capability for conducting research in the area of study, significant expertise in the area, and ability to make original contributions to the field	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	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	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

Total Score: / 40

Comments: