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

EFHP 620.004: Research Methods for Applied Kinesiology
3 Credits, Spring 2020
Tuesdays: 10:30AM – 1:10 PM
Colgan Hall 302 | Science and Technology Campus

Faculty

Name: Dr. Joel Martin

Office hours: Tuesday 1:30 to 3 PM or by appointment

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

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.

Required Texts

Arnold, BL, Schilling B (2017). Evidence-Based Practice in Sport and Exercise: A practitioner's guide to using research. FA Davis. ISBN-13: 9780803640283

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 & Quizzes: This class will utilize out of class assignments and quizzes to reinforce content covered during class. These will help students to develop skills related to creating a research proposal and implementing an evidence-based practice. Unless otherwise noted these will be due prior to class as they are intended to help you prepare for class that week.

Introduction and Methods Peer Review: You will be assigned drafts of the introduction and methods assignments from your peers to review and provide feedback on. Further details will be provided by the instructor.

Article Presentation: Each student will present 1 research article during the semester. The article must be a research study similar in methods to what you anticipate conducting with your research project. Further details will be provided by the instructor.

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. IMPORTANT - *This is a Performance Based Assessment*. **DUE May 13, 2020.**

Proposal Presentation: The intent of this assignment is to develop your presentation skills and communicate your proposed research to your colleagues and professors. **Due May 12, 2020.**

- **Other Requirements**

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
A combination of approaches to assist your learning will be used. 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 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:

Dr. Martin *(Beginning salutation)*

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

Regards, *(Ending Salutation)*

 (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.

- **Course Performance Evaluation Weighting**

	Assignments	Points	Due Dates
#1	Online Assignments & Quizzes	25	See Syllabus
#2	Research Article Presentation	10	TBD
#3	Introduction & Methods Draft Peer Review	10	See Syllabus
#4	Scientific Research Proposal	40	May 13
	• Introduction		
	• Purpose Statement: Aims & Hypothes(es)		
	• Methods		
	• References		
	Appendices:		
	• Project Timeline		
	• IRB Application w/ Informed Consent		
#5	Research Proposal Presentation	10	May 12
#6	Class Participation & Professionalism	5	
TOTAL		100	

- **Grading**

Course Grading Scale

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
See https://cehd.gmu.edu/students/polices-procedures/

Class Schedule

We	Date	Topic	Chapter / Assignment Due Date
1	1/21	Overview of Course & Research Methods Scientific Writing	Buy Textbook / Chapter 1 Online Quiz Due
2	1/28	Research Questions & Aims: Developing a Clinically Relevant Question – Research of Consequence!	Chapter 2 Online Quiz Due
3	2/4	Synthesizing and Evaluating Research – Systematic Reviews, Meta-analyses and more! *Writing Day: Introduction*	Chapter 9 Online Quiz Due
4	2/11	Evaluating Research Quality The Peer Review Process *Article Presentation(s)*	Chapter 10 Online Quiz Due **Introduction Draft Due 2/11 @ Midnight**
5	2/18	Designing a Study – Types of Experimental Designs Importance of Reliability & Validity *Article Presentation(s)*	Chapter 5 & 6 Online Quiz Due
6	2/25	Sampling *Present purpose, research questions and specific aims paragraph to class*	**Purpose Statement Online Assignment Due 2/25 @ Midnight**
7	3/3	*Article Presentation(s)* *Visually present study designs*	**Sampling Online Assignment Due** **Peer Introduction Feedback Due 3/6 @ Midnight**
8	3/10	***Spring Break***	**Rest up & Work Ahead**

9	3/17	Data Analysis: Matching research questions to your analyses *Article Presentation(s)*	Chapter 3 & 4 Online Quiz Due
10	3/24	Diagnostic Statistics *Writing Day – Methods*	Chapter 7 Online Quiz Due
11	3/31	Data Presentation: Graphs, Tables, Figures *Article Presentation(s)*	**Methods Draft Due 3/31 @ Midnight**
12	4/7	Epidemiological Research *Article Presentation(s)*	Chapter 8 Online Quiz Due **Data Presentation Online Assignment Due**
13	4/14	Ethical Research IRB – CITI Training *Article Presentation(s)*	**CITI Training Online Assignment Due 4/21 @ Midnight**
14	4/21	IRB – Application & Consent Form *Article Presentation(s)*	
15	4/28	Project Timelines Research Proposals: Putting all the pieces together Writing & Feedback day	**Peer Methods Feedback Due**
16	5/12	**Presentations – 10:30 am to 1:10 pm** ***Location: 302 Colgan Hall***	**1) Presentations due May 12 @ 10:30 AM 2) Final Proposal Due May 13 @ Midnight**
	Note: 1) 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.		

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 https://catalog.gmu.edu/policies/honor-code-system/).

- Students must follow the university policy for Responsible Use of Computing (see https://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 https://ds.gmu.edu/).

- Students must silence all sound emitting devices 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 https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/.

- For information on student support resources on campus, see https://ctfe.gmu.edu/teaching/student-support-resources-on-campus

Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking:
As a faculty member, I am designated as a "Responsible Employee," and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason's confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance from Mason's Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

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