

RESEARCH METHODS

APK4050-10721 ~ 3 CREDITS ~ SPRING 2020

INSTRUCTOR: Dr. Demetra Christou
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Preferred method of contact: face to face in class or email

OFFICE HOURS: M 2:30 pm or by appointment

MEETING TIME/LOCATION: FLG 265, MWF period 9 (4:05-4:55pm)

COURSE DESCRIPTION: The course is designed to provide an understanding of basic research methods and statistical analysis techniques used in applied physiology and kinesiology. Students will demonstrate their knowledge of the course materials by analyzing, interpreting and summarizing research writing in professional journals and by planning a research study.

PREREQUISITE KNOWLEDGE AND SKILLS: APK major with 3, 4, 6 or 7 classification

REQUIRED MATERIALS: Research Methods in Kinesiology and the Health Sciences by Susan Hall and Nancy Getchell. ISBN-13:978-0-7817-9774-0

Class materials will also include PowerPoint slides, research articles, and other online resources. These materials will be made available on CANVAS. You are responsible for reading all assigned materials.

COURSE FORMAT: We will meet three times per week. For most weeks, on Mondays and Wednesdays there will be a lecture and on Fridays there will be a quiz and in class applications of the material and group discussion. In the last few weeks of the semester there will be group presentations and written critiques of research articles.

COURSE LEARNING OBJECTIVES:

By the end of this course, students should be able to:

1. Identify the steps involved in scientific method
2. Identify issues related with methodology and discuss guidelines to enhance scientific rigor and reproducibility
3. Discuss issues related to research ethics and responsible conduct of human and animal research
4. Outline the processes related to manuscript writing/submission/review/publication, authorship and journal impact factors
5. Conduct a literature search and manage references
6. Critique and present primary research articles
7. Formulate a research question/hypothesis and design a research study to address the question
8. Choose appropriate statistical tools to analyze data
9. Visually and verbally present data and describe experimental design and results

COURSE AND UNIVERSITY POLICIES:

Requirements for class attendance, make-up quizzes and other work in this course are consistent with university policies that can be found in the online catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

ATTENDANCE POLICY: Students are expected to attend class and to actively participate in all activities and group discussions to receive attendance and participation points. Please note: The University has specific reasons that are acceptable for missing class which apply to both undergrad and grad students. You can find this at

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

PERSONAL CONDUCT POLICY: UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor of this class.

QUIZ MAKE-UP POLICY: Unexcused absences on quiz days will result in a zero on the quiz. If you are ill or have an emergency that prevents you from taking the quiz at the scheduled time, it is your responsibility to contact the instructor as soon as possible to try and schedule a make-up quiz. Documentation of the illness or emergency will be required. Any make-up quiz will be

at the discretion of the instructor. Scheduling make-up quizzes is the responsibility of the student and should be done—if at all possible—before the scheduled quiz.

COMMUNICATION: The best way to communicate with the instructor is face to face after class or by email (ddchristou@ufl.edu). You should expect to receive a response to your email usually within 24 to 48 hours. You are responsible for checking course postings on CANVAS. All course grades will be posted on CANVAS. Any discrepancies should be pointed out to the instructor as soon as possible, and before the last day of class.

TECHNOLOGY: Please bring your laptop/tablet or smart phone to class, especially on Fridays. However, surfing the web, checking your email, making Facebook posts, or anything of that nature is unacceptable and strictly prohibited. Please keep your cell phone on silent. Any cell phone or other electronic device used during a quiz will be considered a violation of the student honor code (i.e., cheating) and will also result in a zero for that quiz. Recording of lectures is strictly prohibited. The content of this course may not be used for any commercial purpose. Students found in violation of these policies may be subject to discipline under UF's Conduct Code.

ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes. For optimal consideration, you must see the instructor within the first three days of class. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

COURSE EVALUATIONS: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

GETTING HELP:

Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 352-392-1161

- University Police Department, 352-392-1111 (or 9-1-1 for emergencies)
<http://www.police.ufl.edu/>

Academic Resources

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 352-392-1601. Career assistance and counseling. <https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 352-392-2010 or 352-392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

GRADING:

Evaluation Components	% of Total Grade
Quizzes	55%
Assignments	5%
Group research article critique and presentation	10%
Individual research article critiques	10%
Group research study proposal	5%
Participation	10%
Attendance	5%

Quizzes – There will be nine quizzes in this course and the focus will be on the textbook readings and the material presented during lectures. Most quizzes will be administered on Fridays during normal class meetings, while a few will be take-home. Detailed information regarding take-home quizzes will be provided on CANVAS.

Assignments – You will be given *in class* and *online* assignments throughout the semester. Please complete them on time. No late assignments will be accepted.

Group research article critique and presentation– Your group will be assigned an article to critique and present. Detailed instructions will be provided at a later date. Group membership and article assignment will be posted on CANVAS. All students are expected to read all 10 research articles and participate in the discussion to receive participation points on the dates that presentations are scheduled.

Individual research article critiques– Students are expected to submit a written critique of all 10 research articles that will be presented in class.

Group research study proposal – You will work with your group to design a research study based on the article that your group was assigned to present. Detailed instructions will be provided on CANVAS at a later date.

Participation – You are expected to contribute to *in class* assignments, group discussion and group projects to receive full participation points. Detailed information will be provided at a later date.

Attendance – You are expected to attend class to receive full attendance points. Please note: The University has specific reasons that are acceptable for missing class which apply to both undergrad and grad students. You can find this at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

GRADING SCALE: The following grading scale will be used in this course.

Letter Grade	Percent of Total Points	GPA Impact of Each Letter Grade
A	94-100%	4.0
A-	90-93%	3.67
B+	87-89%	3.33
B	84-86%	3.0
B-	80-83	2.67
C+	77-79%	2.33
C	74-76%	2.0
C-	70-73%	1.67
D+	67-69%	1.33
D	64-66%	1.0
D-	60-63%	0.67
E	0-59%	0

For detailed information on current UF grading policies, please see the undergraduate catalog: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

TENTATIVE COURSE SCHEDULE*:

Wk	Date	Topic	Reading Assignment
1	M – Jan 6	Course overview	Syllabus
	W – Jan 8	Lecture #1: Introduction to Research in Kinesiology	Ch 1 and PPT
	F – Jan 10	Quiz 1 Application #1: How to read a research article	Lecture #1 and Ch 1
2	M – Jan 13	Lecture #2: Research writing style	Ch 2 and PPT
	W – Jan 15	Lecture #3: Journal quality, search engines and reference management Application #2: Literature search and impact factors	Ch 3 and PPT
	F – Jan 17	Quiz 2 TAKE-HOME: Literature search & impact factors	
3	M – Jan 20	Martin Luther King Day	NO CLASS
	W – Jan 22	Lecture #4: Reviewing and critiquing the literature Application #3: Reading/critiquing research articles	Ch3 and PPT
	F – Jan 24	Quiz 3: Research article critique Information on group critiques and presentations	Lecture # 2-4 and Ch 2-3 Mandatory Attendance
4	M – Jan 27	Lecture #5: Understanding research ethics	Ch 5 and PPT
	W – Jan 29	Lecture #6: Types of research	Ch 6 and PPT
	F – Jan 31	Quiz 4 Application #4: Study variables and threads to validity Group discussion	Lecture # 5-6 and Ch 5-6
5	M – Feb 3	Complete online training <i>To receive credit you must provide proof of score ≥ 80% and certificate of completion</i>	
	W – Feb 5	Complete online training <i>To receive credit you must provide proof of score ≥ 80% and certificate of completion</i>	
	F – Feb 7	Complete online training <i>To receive credit you must provide proof of score ≥ 80% and certificate of completion</i>	

6	M – Feb 10	Lecture #7 and #8: Types of research	Ch 7, Ch 9 and PPT
	W – Feb 12	Lecture #9: Research measurements, scientific rigor and reproducibility	Ch 14 and PPT
	F – Feb 14	Quiz 5 Application #5: Study design Group discussion	Lecture# 7, 8, 9 and Ch 7, 9 & 14
7	M – Feb 17	Lecture #10: Basic statistical concepts	Ch 10 and PPT
	W – Feb 19	Lecture #10: Basic statistical concepts	Ch 10 and PPT
	F – Feb 21	Quiz 6 Application #6: Data collection Group discussion	Lecture #10 and Ch 10
8	M – Feb 24	Lecture #11: Finding relationships among variables	Ch 11 and PPT
	W – Feb 26	Lecture #11: Finding relationships among variables Application #7: Correlations	Ch 11 and PPT
	F – Feb 28	Quiz 7	Ch 11 and PPT
9	M – Mar 2	SPRING BREAK	NO CLASS
	W – Mar 4	SPRING BREAK	NO CLASS
	F – Mar 6	SPRING BREAK	NO CLASS
10	M – Mar 9	Lecture #12a: Finding differences among groups/t-tests	
	W – Mar 11	Lecture #12a: Finding differences among groups/t-tests Application #8: t-tests	
	F – Mar 13	Quiz 8	Lecture # 12a and Ch 12

11	M – Mar 16	Lecture #12b: Finding differences among groups/ANOVA	Ch 12 and PPT
	W – Mar 18	Lecture #13: Selecting appropriate statistical tests	Ch 15 and PPT
	F – Mar 20	Application #9: Selecting appropriate statistical tests	
12	M – Mar 23	Lecture #14: Creating effective oral presentations	Ch 17 and PPT
	W – Mar 25	Quiz 9	Lecture #13 and Ch 15
	F – Mar 27	Written critique for your group's article is DUE! Work on group presentations/study proposal IN CLASS	Mandatory Attendance
13	M – Mar 30	Work on group presentations/study proposal IN CLASS	Mandatory Attendance
	W – Apr 1	Presentations	Research articles
	F – Apr 3	Work on group presentations/study proposal IN CLASS	Mandatory Attendance
14	M – Apr 6	Work on group presentations/study proposal	
	W – Apr 8	Work on group presentations/study proposal	
	F – Apr 10	Presentations	Research articles
15	M – Apr 13	Presentations	Research articles
	W – Apr 15	Work on group presentations/study proposal	
	F – Apr 17	Work on group presentations/study proposal IN CLASS	Mandatory Attendance
16	M – Apr 20	Presentations	Research articles
	W – Apr 22	Presentations	Research articles

* Topics and quiz dates are subject to change.