

## RESEARCH METHODS

APK4050-10654 (Section 1B39) ~ 3 CREDITS ~ FALL 2020

**INSTRUCTOR:** **Demetra Christou, PhD, FAHA**  
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**OFFICE HOURS:** W 2:30-3:30 pm or by appointment

**MEETING TIME/LOCATION:** MWF period 2 (8:30-9:20am)/synchronous remote instruction using Zoom virtual meetings

**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. Students are responsible for reading all assigned materials.*

**COURSE FORMAT:** The course will entail **synchronous** remote instruction using Zoom video conferencing on our scheduled days/times. Lectures will NOT be recorded. Attending all scheduled Zoom meetings is expected to receive full participation points. On most Mondays and Wednesdays there will be a lecture and on Fridays there will be a quiz, application of the material and group discussion. In the last part of the semester there will be group presentations of research articles. Please see the tentative schedule for more detailed information.

## **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 attendance and make-up 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 all Zoom meetings including lectures, applications and group discussions. Please note: The University has specific reasons that are acceptable for missing class which apply to both undergrad and grad students:

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

**PERSONAL CONDUCT POLICY:** Students are expected to exhibit behaviors that reflect highly upon themselves and our University. 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, students are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If there are any questions or concerns, students should consult the instructor of this class.

**QUIZ MAKE-UP POLICY:** **Not taking a quiz during the scheduled class time will result in zero on the quiz.** The University has specific reasons that are acceptable for missing class:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx> . 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:** Students are responsible for reading emails sent by the instructor and course announcements on CANVAS. The best way to communicate with the instructor is by email. Students should expect to receive a response usually within 24 to 48 hours. 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 AND HONORLOCK CONSIDERATIONS:** Instruction will be delivered remotely via Zoom video conferencing during the scheduled days/times. Students will need to use a device with a webcam and microphone and be ready to actively participate during Zoom meetings. Recording of Zoom meetings including lectures, group discussions and other activities is strictly prohibited. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited. Students found in violation of these policies will be subject to discipline under UF's Conduct Code. The content of this course may not be used for any commercial purpose.

**Quizzes will be proctored using Honorlock. Students will not need to sign-up or schedule a testing time, nor will they need to create an account. To ensure their device is compliant with Honorlock, a series of pre-assessment checks must be performed before gaining access to the quiz. Students are required to do so in advance of the first quiz; the instructor is unable to further accommodate for individual technological issues that may detract from the quiz time. Specifications necessary for Honorlock are listed below:**

- **System compatibility and setup:**
  - Honorlock is only supported through GOOGLE CHROME WEB BROWSER on Mac, PC (no other mobile devices or tablets are supported)
  - Students must install the HONORLOCK EXTENSION within Chrome
  - Honorlock will not support Windows 8, Windows 8.1, Mac OSX 10.11 and Mac OSX 10.12. Students can find the updated MINIMUM SYSTEM REQUIREMENTS and a system compatibility test at [www.Honorlock.com/support](http://www.Honorlock.com/support).
  
- **Additional considerations using Honorlock for quizzes:**
  - Students will need to take the quiz on a desktop computer or laptop with a webcam and microphone set up on their chosen device. This will not work on mobile devices or tablets, including iPads and smart phones.
  - The **camera MUST face the student at ALL times** – if the camera does not face the student or if they are out of frame, the quiz will pause, preventing them from continuing. This will detract from their quiz time.
  - Students need to open Canvas on the **Google Chrome internet browser** and to download the HONORLOCK CHROME EXTENSION. Other internet browsers will **not** be compatible with Honorlock.
  - A stable Internet connection is required wherever taking a quiz (i.e., good Wi-Fi).

- A 360-degree scan of the testing room/environment will be required. If using a laptop, students will need to pick up their laptop and rotate it for the room scan, including the examination surface (i.e., desk, table), floor space, their lap, etc. The testing environment should be cleared of any clutter, no notes, or textbooks laying out. These could constitute a violation of the Honor Code (i.e. academic dishonesty).
- Students need to make sure that they are the only person in the room and the room is well-lit. Rooms that are not bright enough may get flagged as “blurry” or “unclear”. Posters or photographs on the wall behind the student must be avoided and noise must be minimized (i.e., talking aloud) because these will also result in flags, which will be reviewed by a member of the instructor team for the course to confirm or refute any academic dishonesty.
- Students must have a valid and clear photo identification (ID) card (Gator ID, driver’s license, passport) to show at the start of the quiz and the image must be clear.
- Only one screen (i.e., cannot have multiple monitors) and one tab (i.e., the tab that is being used for the quiz) in Chrome is allowed. Honorlock has an integrity algorithm that can detect search-engine use, so do not attempt to search for answers, even if it is on a secondary device.
- An Honorlock Practice Quiz will be set up under Quizzes in Canvas. **Please go through this practice test well in-advance of taking the quiz.** This practice quiz allows going through all of the pre-assessment checks so that students will know what to expect when taking the exam itself. Students must take the practice quiz on the device they intend to take the exam on, in the same environment (building, room, etc).
- **Failure to meet the above recommendations may result in a 0 grade.** If any issues are encountered with the testing platform or the quiz, students should immediately contact Honorlock for assistance. If this fails, students need to email the course instructor right away with specific details (i.e., screenshots of chat conversation with Honorlock with time stamps) of what occurred.

**ACCOMMODATING STUDENTS WITH DISABILITIES:** Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting their Get Started page at <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. For optimal consideration, students must see the instructor within the first week 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/>. SumNovies of course evaluation results are available to students at <https://gatorevals.ua.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](mailto: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](mailto: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%
Research article group presentation	10%
Research article critiques	10%
Group research proposal	5%
Attendance and participation	15%

**Quizzes** – There will be nine quizzes in this course and the focus will be on the material presented during lectures and reading assignments including textbook chapters. Most quizzes will be administered using Honorlock during normal class time. Please see important Honorlock system requirements and considerations described under the Technology section. A few quizzes will be take-home and detailed information will be provided in advance on CANVAS.

**Assignments** – Students will be given assignments throughout the semester and must be completed on time. No late assignments will be accepted.

**Research article group presentation**– Group membership and article assignment will be posted on CANVAS. Each group will be assigned an article to present. There will be a total of 10 presentations. Detailed instructions will be provided in advance. Students are expected to attend the presentations and participate in the discussion to receive full participation points.

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

**Research article critiques**– Students are expected to read all assigned research articles and submit a written critique. There will be a total of 10 critiques.

**Attendance and participation** –Students are expected to attend all Zoom meetings and contribute to group assignments and discussions to receive full participation points. More information on participation points will be provided. Please note that the University has specific reasons that are acceptable for missing class which apply to both undergrad and grad students: <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	Assignment
1	M – Aug 31	Course overview	Syllabus
	W – Sep 2	Lecture #1: Introduction to Research in Kinesiology	Ch 1 and PPT
	F – Sep 4	<b>Quiz 1</b> Application #1: How to read a research article	Lecture #1 and Ch 1
2	M – Sep 7	<b>HOLIDAY</b>	<b>NO ZOOM MEETING</b>
	W – Sep 9	Lecture #2: Journal quality, search engines and reference management Application #2: Literature search and impact factors	Ch 3 and PPT
	F – Sep 11	<b>Quiz 2: Literature search &amp; impact factors</b>	<b>NO ZOOM MEETING</b>
3	M – Sep 14	Lecture #3: Research writing style	Ch 2 and PPT
	W – Sep 16	Lecture #4: Reviewing and critiquing the literature Application #3: Reading/critiquing research articles	Ch3 and PPT
	F – Sep 18	<b>Quiz 3: Research article critique</b> <b>Information on group critiques and presentations</b>	<b>Mandatory Zoom Participation</b> Lecture # 2-4 and Ch 2-3
4	M – Sep 21	Lecture #5: Understanding research ethics	Ch 5 and PPT
	W – Sep 23	Lecture #6: Types of research	Ch 6 and PPT
	F – Sep 25	<b>Quiz 4</b> Application #4: Study variables and threads to validity Group discussion	Lecture # 5-6 and Ch 5-6
5	M – Sep 28	Complete online training <i>To receive credit you must provide proof of score <math>\geq</math> 80% and certificate of completion</i>	<b>NO ZOOM MEETING</b>
	W – Sep 30	Complete online training <i>To receive credit you must provide proof of score <math>\geq</math> 80% and certificate of completion</i>	<b>NO ZOOM MEETING</b>



	F – Oct 2	Complete online training <i>To receive credit you must provide proof of score <math>\geq 80\%</math> and certificate of completion</i>	<b>NO ZOOM MEETING</b>
6	M – Oct 5	Lecture #7 and #8: Types of research	Ch 7, Ch 9 and PPT
	W – Oct 7	Lecture #9: Research measurements, scientific rigor and reproducibility	Ch 14 and PPT
	F – Oct 9	<b>Quiz 5</b> Application #5: Study design Group discussion	Lecture# 7, 8, 9 and Ch 7, 9 & 14
7	M – Oct 12	Lecture #10: Basic statistical concepts	Ch 10 and PPT
	W – Oct 14	Lecture #10: Basic statistical concepts	Ch 10 and PPT
	F – Oct 16	<b>Quiz 6</b>	Lecture #10 and Ch 10
8	M – Oct 19	Lecture #11: Finding relationships among variables	Ch 11 and PPT
	W – Oct 21	Lecture #11: Finding relationships among variables Application #6: Correlations	Ch 11 and PPT
	F – Oct 23	<b>Quiz 7</b>	Ch 11 and PPT
9	M – Oct 26	Lecture #12a: Finding differences among groups/t-tests	
	W – Oct 28	Lecture #12a: Finding differences among groups/t-tests Application #7: t-tests	
	F – Oct 30	<b>Quiz 8</b>	Lecture # 12a and Ch 12
10	M – Nov 2	Lecture #12b: Finding differences among groups/ANOVA	Ch 12 and PPT
	W – Nov 4	Lecture #13: Selecting appropriate statistical tests	Ch 15 and PPT
	F – Nov 6	Application #8: Selecting appropriate statistical tests	

11	M – Nov 9	Lecture #14: Creating effective oral presentations	Ch 17 and PPT
	W – Nov 11	<b>HOLIDAY</b>	<b>NO ZOOM MEETING</b>
	F – Nov 13	<b>Quiz 9</b>	Lecture #13 and Ch 15
12	M – Nov 16	<b>Assignment of responsibilities for presentations</b>	<b>Mandatory Zoom Participation</b>
	W – Nov 18	Work on group presentations/study proposal	
	F – Nov 20	Finalize group presentations	
13	M – Nov 23	<b>Group Presentations</b>	<b>Mandatory Zoom Participation</b>
	W – Nov 25	<b>THANKSGIVING HOLIDAY</b>	<b>NO ZOOM MEETING</b>
	F – Nov 27	<b>THANKSGIVING HOLIDAY</b>	<b>NO ZOOM MEETING</b>
14	M – Nov 30	Finalize study proposal	
	W – Dec 2	<b>Group Presentations</b>	<b>Mandatory Zoom Participation</b>
	F – Dec 4	<b>Group Presentations</b>	<b>Mandatory Zoom Participation</b>
15	M – Dec 7	<b>Group Presentations</b>	<b>Mandatory Zoom Participation</b>
	W – Dec 9	<b>Group Presentations</b>	<b>Mandatory Zoom Participation</b>

\* Topics and quiz dates are subject to change.