

RESEARCH METHODS

APK4050 Sections 4297 and 4298 ~ 3 CREDITS ~ SPRING 2021

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Preferred method of contact: email

OFFICE HOURS: M 2:30-3:30 pm or by appointment

IN PERSON SECTION MEETING TIME/LOCATION: MWF period 9 (4:05-4:55pm)/285 FLG
Synchronous in-person instruction

ONLINE SECTION MEETING TIME: MWF period 9 (4:05-4:55pm)
Synchronous remote instruction using Zoom

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 instruction on the scheduled days/times. Lectures will NOT be recorded. Attendance of all scheduled meetings remotely via Zoom or in person is required. To mitigate the risk for COVID-19, only students who are registered in section 4297 and have cleared return to campus status will be permitted to attend in-person meetings. Usually on Mondays and Wednesdays there will be a lecture while on Fridays there will be application of the material, group discussion and quiz. In the last part of the semester there will be group presentations and discussion 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 scheduled meetings and participate remotely via Zoom or in person (only if registered in section 4297 and status cleared) to receive full participation points. 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 CONSIDERATIONS: Instruction will be delivered synchronously using Zoom during the scheduled days/times. Students who are attending class in person, are required to bring their laptop/tablet to

class and attend all scheduled Zoom meetings to allow interaction with students in the Online section. During Zoom meetings, all students are required to have their webcam engaged at all times and be ready to actively participate. Surfing the web, checking your email, making Facebook posts, or anything of that nature is unacceptable. Please keep your cell phone on silent. 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.

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/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

COVID-RELATED INFORMATION: For students who are registered in the in-person section (4297), the following policies and requirements related to COVID-19 are in place to maintain a safe learning environment. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.

- Prior to each in-person meeting, please check ONE.UF to ensure your return to campus status is cleared and be ready to retrieve your status on your phone if asked to show evidence in class. If your status is not cleared, then the instructor will ask you to leave.
- You are required to wear approved face coverings over your nose and mouth at all times during class and within buildings.
- Please enter the classroom through the front door and exit the classroom through the back door. Practice physical distancing to the extent possible when entering and exiting the classroom.
- Sanitizing supplies are available in the classroom. You are expected to sanitize your hands as you enter and exit the classroom and wipe down your desks prior to sitting down.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing requirements (6 feet between individuals). Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- If you are experiencing COVID-19 symptoms ([Click here for guidance from the CDC on symptoms of coronavirus](#)), please use the UF Health screening system and follow the instructions on whether you are able to attend class. [Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.](#)

Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. [Find more information in the university attendance policies.](#)

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 opti on 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/>

INCLUSION, DIVERSITY, EQUITY, AND ACCESSIBILITY RESOURCES

I am committed to providing a learning environment that supports inclusion, diversity, equity and accessibility (IDEA) and promotes respect for individuals of all identities. For suggestions or concerns related to IDEA, please reach out to me or any of the following:

- Dr. Leo Ferreira, APK IDEA Liaison, ferreira@hhp.ufl.edu
- Dr. Rachael Seidler, APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, jahlgren@ufl.edu

GRADING:

Evaluation Components	% of Total Grade
Quizzes	55%
Attendance and participation	15%
Research article group presentation	10%
Research article critiques	10%
Group research proposal	5%
Assignments	5%

Quizzes – There will be 9 quizzes in this course. Quizzes will focus on the material presented during lectures and the reading assignments. Some quizzes will be administered during normal class time using Honorlock while others will be take-home. Detailed information will be provided in advance on CANVAS.

Please review important Honorlock system requirements and considerations described below:

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.

- **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.

- **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.

Attendance and participation – Students are expected to attend all scheduled 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>

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.

Research article critiques – Students are expected to read all assigned research articles and submit a written critique by the due date. No late critiques will be accepted. There will be a total of 10 critiques.

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

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

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 visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

TENTATIVE COURSE SCHEDULE*:

Wk	Date	Topic	Assignment
1	M – Jan 11	Course overview	Syllabus
	W – Jan 13	Lecture #1: Introduction to Research in Kinesiology	Ch 1 and PPT
	F – Jan 15	Group organization Application #1: How to read a research article	
2	M – Jan 18	MARTIN LUTHER KING DAY	NO MEETING
	W – Jan 20	Lecture #2: Journal quality, search engines and reference management Application #2: Literature search and impact factors	Ch 3 and PPT
	F – Jan 22	Quiz 1 (Honorlock) Quiz 2 (take home due on Friday Jan 29)	Lecture #1 and Ch 1 Lecture #2 and Ch 3
3	M – Jan 25	Lecture #3: Research writing style	Ch 2 and PPT
	W – Jan 27	Lecture #4: Reviewing and critiquing the literature Application #3: Reading/critiquing research articles	Ch3 and PPT
	F – Jan 29	Quiz 3 (take home due on Feb 7) Information on group critiques and presentations	Lecture # 2-4 and Ch 2-3 Mandatory participation
4	M – Feb 1	Lecture #5: Understanding research ethics	Ch 5 and PPT
	W – Feb 3	Lecture #6: Types of research	Ch 6 and PPT
	F – Feb 5	Quiz 4 (Honorlock) Application #4: Study variables and threads to validity Group discussion	Lecture # 5-6 and Ch 5-6
5	M – Feb 8	Complete online training <i>To receive credit you must provide proof of score \geq 80% and certificate of completion</i>	NO MEETING
	W – Feb 10	Complete online training <i>To receive credit you must provide proof of score \geq 80% and certificate of completion</i>	NO MEETING
	F – Feb 12	Complete online training <i>To receive credit you must provide proof of score \geq 80% and certificate of completion</i>	NO MEETING

6	M – Feb 15	Lecture #7 and #8: Types of research	Ch 7, Ch 9 and PPT
	W – Feb 17	Lecture #9: Research measurements, scientific rigor and reproducibility	Ch 14 and PPT
	F – Feb 19	Quiz 5 (Honorlock) Application #5: Study design Group discussion	Lecture# 7, 8, 9 and Ch 7, 9 & 14
7	M – Feb 22	Lecture #10: Basic statistical concepts	Ch 10 and PPT
	W – Feb 24	Lecture #10: Basic statistical concepts	Ch 10 and PPT
	F – Feb 26	Quiz 6 (Honorlock)	Lecture #10 and Ch 10
8	M – Mar 1	Lecture #11: Finding relationships among variables	Ch 11 and PPT
	W – Mar 3	Lecture #11: Finding relationships among variables Application #6: Correlations	Ch 11 and PPT
	F – Mar 5	Quiz 7 (Take home)	Ch 11 and PPT
9	M – Mar 8	Lecture #12a: Finding differences among groups/t-tests	
	W – Mar 10	Lecture #12a: Finding differences among groups/t-tests Application #7: t-tests	
	F – Mar 12	Quiz 8 (Take home)	Lecture # 12a and Ch 12
10	M – Mar 15	Lecture #12b: Finding differences among groups/ANOVA	Ch 12 and PPT
	W – Mar 17	Lecture #13: Selecting appropriate statistical tests	Ch 15 and PPT
	F – Mar 19	Application #8: Selecting appropriate statistical tests	
11	M – Mar 22	Lecture #14: Creating effective oral presentations	Ch 17 and PPT
	W – Mar 24	UF RECHARGE DAY☺	NO MEETING
	F – Mar 26	Quiz 9 (Honorlock)	

12	M – Mar 29	Discuss group assignments	Mandatory participation
	W – Mar 31	Work on group assignments	
	F – Apr 2	Work on group assignments	
13	M – Apr 5	Group presentations and discussion	Mandatory participation
	W – Apr 7	Group presentations and discussion	Mandatory participation
	F – Apr 9	Group presentations and discussion	Mandatory participation
14	M – Apr 12	Group presentations and discussion	Mandatory participation
	W – Apr 14	Group presentations and discussion	Mandatory participation
	F – Apr 16	Work on study proposal	Mandatory participation
15	M – Apr 19	Finalize and submit study proposal	
	W – Apr 21	TBA	

* Topics and quiz dates are subject to change.