UF Department of Applied Physiology and Kinesiology
College of Health and Human Performance
UNIVERSITY of FLORIDA

Motor Learning

APK3200 | Class # 10612 | 3 Credits | Fall 2022

Course Info

INSTRUCTOR

Stephen Coombes, PhD
Office: 170H FLG
Office Phone: 352.294.1768
Email: scoombes@ufl.edu
Preferred Method of Contact: e-mail

OFFICE HOURS

Posted on canvas or by appointment

MEETING TIME/LOCATION

FLG 280 | M, W,F | period 3 (9:35 AM – 10:25 AM)

COURSE DESCRIPTION

Provides background for understanding, analyzing, and teaching skills in sports and dance. Attention to specific aspects of psychomotor developments and theoretical models of skill acquisition.

PREREQUISITE KNOWLEDGE AND SKILLS

There are no prerequisites for this course. Junior status or higher.

REQUIRED AND RECOMMENDED MATERIALS

The following book is recommended but not required: RA Schmidt and TD Lee. Motor Control and Learning. A Behavioral Emphasis. 5th edition. Human Kinetics. ISBN 0-7360-7961-0. Additional papers will be provided for specific topics and made available on canvas.

COURSE FORMAT

The course includes 14 modules. All lectures have been recorded and will be available online. Each week you will complete 1 module. Every module includes recorded lectures and a quiz. Most modules also include a lab/experiment as well as completion of a project. The project will require you to integrate the content you are learning through the lectures and labs into a practical example. The project will build across the semester. For example, for module 1, the online lectures and materials will be made available on the first day of class. A discussion board for module 1 will be activated at the same time. The instructor will monitor the discussion board and answer questions within the discussion forum. Students are encouraged to collaborate and interact through the message board. In general, each week will follow the same format. Students should arrive to class on Monday having watched the recorded lectures and completed the lab(s). During class on Mondays and Wednesday's students will then integrate this knowledge into their motor learning program. On Friday there will

be a quiz and one group will present their updated motor learning project for that week. The next module will be made available after class on Friday and will follow the same timeline.

TIMELINE

A timeline that includes the dates of each module, required lab assignments, quizzes, the mid-term and the final exam is available online through canvas and is also pasted at the bottom of the syllabus.

MOTOR LEARNING PROJECT

Your goal is to develop a comprehensive motor learning program. You will organize yourselves into a group of 4 students. As a group you will identify an individual and a skill that will form the basis of your motor learning project. The individual could be an athlete/patient/regular person of any age and skill level. The skill can be any type of motor skill that the individual must learn. Your decision on the individual and the skill must be approved by the instructor. You will be creating a 15-week motor learning program for that individual that is focused on a skill (or skills). Each week you will update your program to include content learned during that week's module. You will progressively build up an evidence-based motor learning program. On Friday, one group will present and discuss their addition to the program for that week. Each group will be required to upload their program for grading periodically throughout the semester. There will also be an overall grade for the project at the end of the semester.

LABS

Please go the "Lab" page on CANVAS for more specific instructions. In brief, for the laboratory experiments you will need to:

1) Download and install the Motorlab software from the following website: https://motorlab.ca/download/

Each student will be provided with a license code by the instructor to activate the software.

2) Go to the lab page on CANVAS to download and extract the zipped file which has the instructions, activity, and analysis file for ALL labs. You only need to download once.

Note: There are no points for completing the quiz, BUT there will be questions on the quiz and exams related to the labs. It is also expected that knowledge from the labs will be considered when designing your motor learning project.

There will be a mid-term after module 6 and a final exam after module 14.

Final Exam: 12/15/2022 @ 7:30 AM - 9:30 AM

Students are responsible for checking announcements and course postings on Canvas, which may include updates to the course schedule.

COURSE LEARNING OBJECTIVES:

1. Differentiate and explain learning theories applicable to skill acquisition and retention
2. Apply knowledge of instructional strategies for basic skill acquisition
3. Appraise current evidence and trends in motor learning and motor control
4. Recognize general (classic) research paradigms used in motor learning and control research

Course & University Policies

ATTENDANCE POLICY

Students are expected to watch every lecture and read and watch all additional materials provided online through the course shell. While there are no points specifically for attendance, points can be obtained by completing the motor learning project and quizzes in class. **Note that quizzes cannot be completed remotely.**

PERSONAL CONDUCT POLICY

Students are expected to exhibit behaviors that reflect highly upon themselves and our University. Please read and refer to the syllabus. Please use professional and courteous standards for any exchanges with peers or the instructor via e-mails and online tools (e.g., discussion boards). 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. This includes sharing content between class sections, including quizzes and final exam. Honor code violations of any kind will not be tolerated and sanctions will be determined by the course instructor.

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 in this class.

EXAM MAKE-UP POLICY

Make-up quizzes and exams will be given at the discretion of the instructor. To schedule a make-up quiz or exam, please fill out the make-up exam request form posted in Canvas and e-mail it to your course instructor. The form is available for download through the CANVAS syllabus page. Documentation will be required. Unexcused missed quizzes/labs/exams will result in a zero on that item (this includes contacting the instructor after the exam if you are ill). Please make travel arrangements accordingly, as this is not an excusable activity.

A student experiencing an illness should visit the UF Student Health Care Center or their preferred healthcare provider to seek medical advice and obtain documentation. If you have an illness, family emergency or death, please contact the Dean of Students Office (www.dso.ufl.edu) and follow the DSO Care Team procedures for documentation and submission of a request for make-up assignment (https://care.dso.ufl.edu/instructor-notifications/). The DSO will contact the instructor. Do not provide any documentation to the instructor regarding illness or family emergency. This is your personal and protected information. The DSO is qualified to receive and verify the documents you provide. The instructor will follow the recommendations from the DSO. Requirements for class attendance and make-up exams, assignments, 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."

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. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. 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/.

ZOOM

Zoom is an easy to use video conferencing service available to all UF students, faculty, and staff that allows for meetings of up to 100 participants. You can find resources and help using Zoom at https://ufl.zoom.us.

PRIVACY

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

IN CLASS RECORDINGS

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person

injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Getting Help

HEALTH & 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, 392-1161
- University Police Department, 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, 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, 392-2010 or 392-6420. General study skills and tutoring. http://teachingcenter.ufl.edu/
- Writing Studio, 302 Tigert Hall, 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

For suggestions or concerns related to IDEA, please reach out to any of the following:

- Dr. Linda Nguyen, APK IDEA Liaison, linda.nguyen@hhp.ufl.edu
- Dr. Rachael Seidler, APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, jahlgren@ufl.edu

Grading

Activity/Assignment	Points
1. Midterm Exam	20
2. Final Exam	25
3. Quizzes x 14	35
4. Motor Learning Project – weekly progress	5
5. Motor Learning Project – final assessment	15
TOTAL POINTS	100

MIDTERM

Questions will be based on modules 1-6. The midterm exam will consist of 40 multiple-choice and true-false questions, each worth 0-5 points, for a total of 20 points. Students are not permitted access to any kind of materials or notes during this assessment. Questions are generated by the course instructor and the majority of focus should be given to the lecture notes and labs when studying. All assessments will be taken through canvas using the lockdown browser. Students will be allowed 50 minutes to complete the midterm exam.

FINAL EXAM

Questions will be based on modules 7-14**.** The final exam will consist of 40-50 multiple-choice and true-false questions, each worth 0.25 to 1.0 point for a total of 25 points. Students are not permitted access to any kind of materials or notes during this assessment. Questions are generated by the course instructor and the majority of focus should be given to the lecture notes and labs when studying. All assessments will be taken through canvas using the lockdown browser. Students will be allowed 70 minutes to complete the final exam.

QUIZZES

There will be a total of 14 quizzes. There will be a quiz after each module is completed. Each quiz will consist of 5-10 questions, for a total of 2.5 points per quiz. Questions will be multiple choice and true/false. Students are not permitted access to any kind of materials or notes during these assessments. Questions are generated by the course instructor and the majority of focus should be given to the lecture notes and labs when studying. All assessments will be taken through canvas using the lockdown browser. Students will be allowed 10 minutes to complete the quiz.

MOTOR LEARNING PROJECT

Students will self-organize into groups of 4. Each week, your group will add to your motor learning project with evidence-based procedures that will help advance skill development. Each week after the quiz, one group will show their project and present/discuss how they integrated the current weeks content into their program. It is also expected that you do research beyond the content provided in the lectures and that you integrate this knowledge into your project. Each group will have to upload their project each week with track-changes on to show the progress they have made that week. There will be 0.5 point for each project upload deadline (total of 5 points). At the end of the semester there will be an additional 15 points for the project. In total, the project counts for 20 points of your final grade. The rubric for grading the project is below.

	"A" Paper	"B" Paper	"C" Paper	"D" Paper
Evidence and Support	- Chapter has thoughtful consideration for why programming choices are being made - Claims and programming choices are coherent, measured and supported by relevant evidence and citations - Builds upon information provided in module - Reader finishes chapter feeling that topic was carefully considered and thoroughly researched	- Chapter contains some citation and support but lacks thorough explanation for why programming choices were made - Barely builds upon information provided in module - Reader finishes chapter wanting more information or better clarity	- Chapter deploys vague or inconsistent evidence/citation for claims and why programming choices were made - Does not build upon information provided in module - Chapter contains examples from personal experience instead of cited works - Reader must read chapter more than once to understand what is being explained	- Chapter does not explain why programming choices were made - Claims and programming choices are not supported by citations - Does not reference information covered in module - Chapter contains examples from personal experience instead of cited works - Reader finishes chapter feeling confused
Style and Structure	- Chapter flows logically to create an overall cohesive argument - Reader finishes chapter feeling that careful consideration was taken to craft a chapter with logical and effective sequencing of ideals	- Chapter has ok flow and cohesion - Reader finishes chapter feeling that writing is not as well organized as it should be.	- Chapter has occasional flow and cohesion -Reader finishes chapter with difficulty understanding information due to lack or organization and logical flow	- Chapter is poorly organized, has no flow, rambles, and appears to follow no order - Reader finishes chapter feeling confused
Grammar and Citations	- Chapter is free of grammatical errors including spelling and punctuation - Includes complete works cited and proper in text citations - Reader's progress through chapter is not slowed by cumbersome wording, grammatical or citation errors.	- Chapter is mostly free from grammatical errors with just occasional typos - Almost complete work cited and proper in text citation - Reader's progress through chapter is slowed by grammatical or citing errors	- Chapter exhibits a few grammatical/syntactical problems, but is otherwise well written - Works cited/in text citation are wrong or inconsistent - Reader's progress through chapter is difficult due to grammatical or citing errors	- Chapter exhibits numerous grammatical errors, and is difficult to read - No works cited or in text citation - Reader's progress through chapter is impossible due to grammatical or citing errors

LABS

There will be a total of 10 labs. Labs will be completed at home, should be considered/integrated into your motor learning program and there will be questions on the quizzes/exams from the labs. There are no points for completing the labs and there is nothing to submit. Specific details for the labs can be found here.

EXTRA CREDIT: No extra credit is offered in this course.

GRADING SCALE: *Quiz and exam scores be uploaded directly into canvas following the completion of each assessment.* Any discrepancies with points displayed in the gradebook must be brought to the attention of the instructor as soon as possible, or before the last day of class. There is no curve for this course and final grades will not be rounded up. More detailed information regarding current UF grading policies can be found here: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/. *Any requests for additional extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.*

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	94.00-100%	4
A-	90.00-93.99%	3.7
B+	87.00-89.99%	3.3
B	84.00-86.99%	3
B-	80.00-83.99%	2.7
C+	77.00-79.99%	2.3
C	74.00-76.99%	2
C-	70.00-73.99%	1.7
D+	67.00-69.99%	1.3
D	60.00-66.99%	1
E (F)	0-59.99%	0

SUCCESS AND STUDY TIPS

Please recognize that people learn in different ways and there is no judgement on how you study (i.e. highlighting the textbook, using YouTube, drawing figures). Nevertheless, here are some tips for success and studying in this course that appear to prove useful for the majority:

- The suggested (but not required) textbook can be helpful to some but is not required for success in the course. All quizzes and exams will be based on material provided in lectures, discussions, and articles.
- Engage with your peers and engage in the discussion forum. We are one another's greatest resources for learning.
- Look up material that inspires you. If we are talking about internal versus external focus and you want to apply it to your sport of choice – look it up and read about it or watch a video clip! Chances are, this will add to your depth of learning and better allow you to apply the principle to your future endeavors and interests!
- Check Canvas for announcements.
- Do not watch the lectures last minute. Watch them in advance and use the discussion forum to ask questions and prepare for the quiz/exams. The goal of the quiz is to encourage you to stay on top of the material so you are well prepared for the mid-term and final.
- Things happen. That's life. If there are some majorly overwhelming things happening during your semester, send me an email; we'll work together to figure out what steps you should take to help get you through the course.

Weekly Course Schedule

Month	Date	Day	Module	Lab		Lecture Topic
Aug	24	W	0	Introduction & Syllabus	Lecture	Orientation
Aug	26	F	0	Group assignments & Motor Program Discussion		
Aug	29	M	1	How to find/use research articles/references	Lecture	Motor Neuroscience Methods
Sep	31	W	1	EEG lab demo	Lab	EEG Demo Lab
Sep	**2**	**F**	**1**	**Quiz 1 + Group discussion**	**Project**	**Submission 1**
Sep	5	M	2	No Class - Labor Day		
Sep	7	W	2	Motor Program Project	Lecture	Cortical and Subcortical Motor System
Sep	**9**	**F**	**2**	**Quiz 2 + Group discussion**		
Sep	12	M	3 & 4	Motor Program Project	Lecture	Skill classification & Motor Learning Concepts
Sep	14	W	3 & 4	Motor Program Project	Lab	Probe Reaction Time & stimulus Intensity
Sep	**16**	**F**	**3 & 4**	**Quiz 3 & 4**	**Project**	**Submission 2**
Sep	19	M	5	Motor Program Project	Lecture	Information Processing: Stimulus Identification
Sep	21	W	5	Motor Program Project	Lab	Simon effect
Sep	**23**	**F**	**5**	**Quiz 5 + Group discussion**	**Project**	**Submission 3**
Sep	26	M	6	Motor Program Project	Lecture	Information Processing: Response Selection and Programming
Sep	28	W	6	Motor Program Project	Lab	Donders substractive method & Stim response compatability
Oct	**30**	**F**	**6**	**Quiz 6 + Group discussion**	**Project**	**Submission 4**
Oct	3	M		Mid-Term preperation		
Oct	5	W		**MID-TERM**		
Oct	7	F		No Class - Homecoming		
Oct	10	M	7	Motor Program Project	Lecture	Feedback Control I
Oct	12	W	7	Motor Program Project	Lab	Visual-auditory RT
Oct	**14**	**F**	**7**	**Quiz 7 + Group discussion**	**Project**	**Submission 5**
Oct	17	M	8	Motor Program Project	Lecture	Feedback Control II
Oct	19	W	8	Motor Program Project	Lab	Visuomotor adaptation
Oct	**21**	**F**	**8**	**Quiz 8 + Group discussion**	**Project**	**Submission 6**
Oct	24	M	9	Motor Program Project	Lecture	Feedforward Control
Oct	26	W	9	Motor Program Project	Lab	Slater-Hammel Anticipation timing
Oct	**28**	**F**	**9**	**Quiz 9 + Group discussion**	**Project**	**Submission 7**
Nov	31	M	10	Motor Program Project	Lecture	Coordination
Nov	2	W	10	Motor Program Project	Lab	Fitts Law
Nov	**4**	**F**	**10**	**Quiz 10 + Group discussion**	**Project**	**Submission 8**
Nov	7	M	11	Motor Program Project	Lecture	Augmented Feedback
Nov	**9**	**W**	**11**	**Quiz 11 + Group discussion**	Lab	Feedback/KR
Nov	11	F		No Class - Veterans Day	**Project**	**Submission 9**
Nov	14	M	12	Motor Program Project	Lecture	Conditions of Practice
Nov	16	W	12	Motor Program Project	Lab	Contextual Interference & Practice variability
Nov	**18**	**F**	**12**	**Quiz 12 + Group discussion**	**Project**	**Submission 10**
Nov	21	M				
Nov	23	W		No Class - Thanksgiving Holiday		
Nov	25	F				
Nov	28	M	13	Professional Schools	Lecture	Pain and movement
Dec	30	W	13	Motor Program Project		
Dec	2	F	13	**Quiz 13 + Group discussion**		
Dec	5	M	14	Motor Program Project	Lecture	Prosthetics
Dec	7	W	14	**Quiz 14 + Group discussion**	**Project**	**Final Project Submission**
Dec	9			No Class - Reading Day		
Dec	15			**FINAL ----- 12/15/2022 @ 7:30 AM - 9:30 AM --- FLG 280**		