

Motor Learning

APK3200 | Class # 20056 | 3 Credits | Spring 2023

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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 285 | T | period 4 (10:40 AM – 11:30 AM)
FLG 285 | R | period 4-5 (10:40 AM – 12:35PM)

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, a quiz, and in class assignments. Most modules also include a lab/experiment. Quizzes will be on Tuesdays. On thursday there will be in class assignments related to the module/lab from the previous week to prepare students for the midterm and final. 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. The next module will be made available after class on Thursday 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.

IN CLASS ASSIGNMENTS

During Thursday class, you will be given a series of questions that will require you to apply knowledge from the module/lab into a real-world situation. There will be points on offer during the class, based on your answers to the questions. Nothing will be submitted, but you will have to successfully answer questions in class to receive points for the in class assignment.

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 labs, 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: 05/04/2023 @ 5:30 PM - 7:30 PM

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 successfully completing in class assignments. **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 option 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	25
2. Final Exam	35
3. Quizzes x 14	35
4. In class assignment	5
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, as well as several short answer questions (5 points), 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, labs, and

in class assignments 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 (total of 25 points). There will also be several short answer questions (10 points) for a total of 35 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 90 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.

LABS

There will be a total of 10 labs. Labs will be completed at home, and in class assignments may involve showing lab data, answering lab related questions, or completing assignments related to the labs. There will also 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](#).

CLASS ASSIGNMENTS

During class, you will be given a series of questions that will require you to apply knowledge from the module/lab into real-world situations. There will be points on offer during the class, based on your answers to the questions. Nothing will be submitted, but you will have to successfully answer questions in class to receive points for the in class assignment.

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			
Jan	10	Tuesday	1	intro		
Jan	12	Thursday	1	EEG demo		
Jan	17	Tuesday	1	Quiz 1	Lecture	Motor Neuroscience Methods
Jan	19	Thursday	1	in class assignments		
Jan	24	Tuesday	2	Quiz 2	Lecture	Cortical and Subcortical Motor System
Jan	26	Thursday	2	in class assignments		
Jan	31	Tuesday	3	Quiz 3	Lecture	Skill classification
Feb	2	Thursday	3	in class assignments	Lab	Probe Reaction Time
Feb	7	Tuesday	4	Quiz 4	Lecture	Motor Learning Concepts
	9	Thursday	4	in class assignments	Lab	Stimulus Intensity
Feb	14	Tuesday	5	Quiz 5	Lecture	Information Processing: Stimulus Identification
	16	Thursday	5	in class assignments	Lab	Simon effect
Feb	21	Tuesday	6	Quiz 6	Lecture	Information Processing: Response Selection and Programming
	23	Thursday	6	in class assignments	Lab	Donders subtractive method & Stim response compatability
Feb	28	Tuesday				
Mar	2	Thursday		midterm		
Mar	7	Tuesday	7	Quiz 7	Lecture	Feedback Control I
	9	Thursday	7	in class assignments	Lab	Visual-auditory RT
Mar	14	Tuesday	spring break			
Mar	16	Thursday	spring break			
Mar	21	Tuesday	8	Quiz 8	Lecture	Feedback Control II
	23	Thursday	8	in class assignments	Lab	Visuomotor adaptation
Mar	28	Tuesday	9	Quiz 9	Lecture	Feedforward Control
	30	Thursday	9	in class assignments	Lab	Slater-Hammel Anticipation timing
April	4	Tuesday	10	Quiz 10	Lecture	Coordination
	6	Thursday	10	in class assignments	Lab	Fitts Law
Mar	11	Tuesday	11	Quiz 11	Lecture	Augmented Feedback
	13	Thursday	11	in class assignments	Lab	Feedback/KR
April	18	Tuesday	12	Quiz 12	Lecture	Conditions of Practice
	20	Thursday	12	in class assignments	Lab	Contextual Interference & Practice variability
April	25	Tuesday	13 & 14	Quiz 13 & 14	Lecture	Pain and movement & prosthetics
May	4	Thursday	5:30 - 7:30 pm	final		