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

Motor Learning

APK3200 | Class # 10529 | 3 Credits | Fall 2024

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Course Info

INSTRUCTOR

Dr. Rachael Seidler, Professor
Department of Applied Physiology and Kinesiology
rachaelseidler@ufl.edu
FLG 110, 352-294-1722

OFFICE HOURS

Wednesday 9:30 – 11:30

MEETING TIME/LOCATION

FLG 220, MWF Period 2, 8:30 – 9:20

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

Junior standing or higher and Applied Physiology and Kinesiology major.

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 format is variable, including in-class lectures, in-class and at-home laboratory activities, quizzes, and in-class discussion assignments.

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

Attendance is strongly encouraged—we will discuss materials that will appear on quizzes and exams. Moreover, there are several in-class discussion assignments (see course timeline).

PERSONAL CONDUCT & ACADEMIC INTEGRITY

University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course.

APPROPRIATE USE OF AI TECHNOLOGY

The UF Honor Code strictly prohibits *cheating.* The use of any materials or resources prepared by another person or Entity (inclusive of generative AI tools) without the other person or Entity's express consent or without proper attribution to the other person or Entity is considered *cheating.* Additionally, the use of any materials or resources, through any medium, which the Faculty / Instructor has not given express permission to use and that may confer an academic benefit to a student, constitutes *cheating*.

The use of any AI enabled tool in this course substantially compromises the student's ability to achieve the stated learning objectives and is strictly prohibited throughout the entirety of the course.

IN-CLASS RECORDING

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. For more information, see: https://aa.ufl.edu/policies/in-class-recording/

EXAM / ASSIGNMENT MAKE-UP POLICY

Assignments may be submitted late with a valid and university approved excuse. Without a university approved reason, 10% of possible points will be deducted per day. 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.

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 & WELLNESS

- ***U Matter, We Care:*** If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- ***Counseling and Wellness Center:*** Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- ***Student Health Care Center:*** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- ***University Police Department:*** Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- ***UF Health Shands Emergency Room / Trauma Center:*** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; or visit the UF Health Emergency Room and Trauma Center website.
- ***GatorWell Health Promotion Services:*** For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

ACADEMIC RESOURCES

- ***E-learning technical support***: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- ***Career Connections Center***: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- ***Library Support***: Various ways to receive assistance with respect to using the libraries or finding resources.
- ***Teaching Center***: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- ***Writing Studio***: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- ***Student Complaints & Grievances***: Students are encouraged to communicate first with the involved person(s), but here is more information on the appropriate reporting process.

APK ADMINISTRATORS

For suggestions or concerns related to APK courses or programming, please reach out to any of the following:

- Dr. David Vaillancourt (he/him), APK Department Chair, vcourt@ufl.edu
- Dr. Demetra Christou (she/her), APK Department Vice Chair, ddchristou@hhp.ufl.edu
- Dr. Steve Coombes (he/him), APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren (she/her), APK Undergraduate Coordinator, jahlgren@ufl.edu

Technology: A computer with Respondus Lockdown will be required for taking quizzes and exams in class. The use of cell phones, surfing the web, checking email, making Facebook posts, or anything of that nature is discouraged. Violation of this policy will result in in-class assignment point deductions which will be decided by the course instructor.

Wi-Fi access via eduroam:

Eduroam, the on-campus wi-fi network, is available nationally and internationally. UF students can access eduroam for free with their GatorLink log-in credentials. The eduroam network is fast and secure and has more than 10,000 wi-fi hotspots in 106 countries and territories worldwide. **How to connect to eduroam:**

1. If you can get a Wi-Fi signal at any of the eduroam locations (see below) and your mobile device (laptop, smartphone, or tablet) has already been configured for eduroam, then you will automatically connect.
2. Otherwise, follow the instructions for connecting here: https://helpdesk.ufl.edu/connecting-to-eduroam-off-campus/.

Eduroam sites in the U.S.: https://incommon.org/eduroam/eduroam-u-s-locator-map/. For problems connecting, you can call (352-392-HELP/4357) or email the UF Computing Help Desk.

Grading

Activity/Assignment	Points
Midterm Exam	25
Final Exam	35
Quizzes x 12	36
In class assignments	4
Total	100

Midterm Exam

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 most of the 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 IN CLASS (bring your laptop on these days). Students will be allowed 50 minutes to complete the midterm exam.

Final Exam

Questions will be based primarily on modules 7-12. 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 most of the focus should be given to the lecture notes and labs when studying. All assessments will be taken through canvas using the lockdown browser IN THE CLASSROOM (bring your laptop on these days). Students will be allowed 90 minutes to complete the final exam.

Quizzes

There will be a total of 12 quizzes. There will be a quiz after each module is completed. Each quiz will consist of 5-10 questions, for a total of 2.9 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 most of the 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 15 minutes to complete the quiz.

Labs

There will be a total of 12 labs. Labs will be completed at home (and occasionally in class), 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 on the canvas website.

In-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. Here is a useful link for class assignments/research:

PubMed: https://pubmed.ncbi.nlm.nih.gov/

Extra Credit: No extra credit is offered for this course.

Grading Scale: Quiz and exam scores will be uploaded directly into canvas. 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/

Letter Grade	Percent of Total Points	GPA Equivalent
A	93.00-100%	4.0
A-	90.00-92.99%	3.67
B+	87.00-89.99%	3.33
B	83.00-86.99%	3.0
B-	80.00-82.99%	2.67

C+	77.00-79.99%	2.33
C	73.00-76.99%	2.0
C-	70.00-72.99%	1.67
D+	67.00-69.99%	1.33
D	63.00-66.99%	1.0
D-	60.00-62.99%	.67
E	0-59.99%	0

Communication: You are responsible for checking announcements and course postings on the course website and listening in class. All course grades will be posted on the course website. Any discrepancies should be pointed out to the instructor on or before the end of the semester.

Course Schedule

Introductory Module

Friday, August 23: Class introduction & organization

Module 1: Neuroscience Methods

Monday, August 26: Bring laptop with Respondus Lockdown for practice quiz, Neuroscience Methods Lecture 1

Wednesday, August 28: Neuroscience Methods Lecture 2

Friday, August 30: Quiz 1, check on Motor Lab installation, in-class discussion assignment

Module 2: Cortical & Subcortical Motor Systems

Monday, September 2: Labor Day, no class

Wednesday, Sept. 4: Cortical & subcortical motor systems Lecture 1

Friday, September 6: Cortical & subcortical motor systems Lecture 2

Monday, September 9: Quiz 2, in-class discussion assignment

Module 3: Skill Classification & Methods for Studying Motor Learning

Wednesday, Sept. 11: Classification & methods Lecture 1

Friday, September 13: Classification & methods Lecture 2, complete Error Calculation Motor Lab on your own time

Monday, Sept. 16: Quiz 3, check on Motor Lab completion, in-class discussion assignment

Module 4: Motor Learning Concepts

Wednesday, Sept. 18: Motor learning concepts Lecture 1, complete Probe Reaction Time Motor Lab on your own time

Friday, Sept. 20: Motor learning concepts Lecture 2

Monday, Sept. 23: Quiz 4, in-class discussion assignment

Module 5: Human Information Processing: Stimulus Identification

Wednesday, Sept. 25: Stimulus identification Lecture 1, Complete Simon Effect Motor Lab on your own time

Friday, Sept. 27: Stimulus identification Lecture 2

Monday, Sept. 30: Quiz 5, in-class discussion assignment

Module 6: Human Information Processing: Response Selection & Programming

Wednesday, Oct. 2: Response selection & programming Lecture 1, Complete Donders Subtractive Method Motor Lab on our own time

Friday, Oct. 4: Response selection & programming Lecture 2, Complete Stimulus Response Motor Lab on your own time

Monday, Oct. 7: Quiz 6, in-class discussion assignment

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Midterm Exam Review, Wednesday October 9

Midterm Exam, Friday October 11

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Module 7: Feedback Control I

Monday, Oct. 14: Feedback control I Lecture 1, Complete Visual-Auditory Reaction Time Motor Lab on your own time

Wednesday, Oct. 16: Feedback control I Lecture 2

Friday, Oct. 18: No class, Homecoming Weekend

Monday, Oct. 21: Quiz 7, in-class discussion assignment

Module 8: Feedback Control II

Wednesday, Oct. 23: Feedback control II Lecture 1, Complete Visuomotor Adaptation Motor Lab on your own time

Friday, Oct. 25: Feedback control II Lecture 2

Monday, Oct. 28: Quiz 8, in-class discussion assignment

Module 9: Feedforward Control

Wednesday, Oct. 30: Feedforward control Lecture 1, Complete Slater-Hammel Anticipation Timing Motor Lab on your own time

Friday, Nov. 1: Feedforward control Lecture 2

Monday, Nov. 4: Quiz 9, in-class discussion assignment

Module 10: Coordination

Wednesday, Nov. 6: Coordination Lecture 1, Complete Fitts Law Motor Lab on your own time

Friday, Nov. 8: Coordination Lecture 2

Monday, Nov. 11: Veteran's Day, no class

Wednesday, Nov. 13: Quiz 10, in-class discussion assignment

Module 11: Augmented Feedback

Friday, Nov. 15: Augmented Feedback Lecture 1, Complete Feedback / Knowledge of Results Motor Lab on your own time

Monday, Nov. 18: Augmented Feedback Lecture 2

Wednesday, Nov. 20: Quiz 11, in-class discussion assignment

Module 12: Conditions of Practice

Friday, Nov. 22: Conditions of Practice Lecture 1, Complete Contextual Interference & Practice Variability Motor labs on your own time

Nov. 25-30: No class, Thanksgiving Break

Monday, Dec. 2: Quiz 12, in-class discussion assignment

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Friday, December 4, Review for Final Exam

Final Exam December 12, 10:00 am

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