USC Dornsife
College of
Letters, Arts and
Sciences

HBIO 400L – Motor Control and Learning (4 units)
Spring 2021
Lectures: Monday/Wednesday/Friday 11:00 a.m. – 11:50 a.m.
Location: ONLINE*

Instructor: Kurt E. Kwast, Ph.D.
Office Hours: Monday 12:30 p.m. – 2:00 p.m., Wednesday 1:00 p.m. – 2:30 p.m. and by appointment
Office: ONLINE*
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Lab Director: Anh-Khoi Nguyen, Ph.D.
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Lab Instructor: Gudrun "Bara" Floyd
Office hours: TBA and by appointment
Contact Info: gbfloyd@usc.edu
Location: ONLINE

Lab Instructor: Joshua Carlos
Office hours: TBA and by appointment
Contact Info: jcarlos6@usc.edu
Location: ONLINE

* *For Spring 2021, the course is anticipated to be conducted online, with all lectures, labs, and office hours conducted via Zoom.*

Course Description

Theories and principles of learning applied to gross motor performance; analysis and valuation of variables affecting learning and performance in exercise, games, sports, and dance.

Course Learning Objectives

- Identify and discuss the function of components involved with sensation, perception, movement preparation and execution as they contribute to the execution of motor skills
- Apply knowledge in motor control and learning to optimize learning and performance
- Apply knowledge of motor control and learning as well as analytical and experimental skills to produce integrative original work
- Correctly use proper statistical, mathematical, laboratory and computational tests
- Identify, explore, assess and solve real world problems through independent study and self-directed group projects that apply the scientific method
- Assemble sources of scientific evidence to develop and present an original hypothesis
- Apply the knowledge in motor learning and control to promote skill acquisition in special populations
- Discuss how various aspects of human diversity, such as race, age, disability, gender, ethnicity and ancestry, affect motor control and learning

Relevant Human Biology BS & BA Degree Learning Objectives Addressed in Part by This Course

- Develop a deeper comprehension of the central and cross-disciplinary concepts of human biology, which include bioenergetics, the interrelationship of human form and function, physiological homeostasis, and biomechanics.
- Develop proficiency in modern methodologies pertinent to research in biological and medical sciences.
- Think critically, analyze, synthesize, and use information to solve real-world problems.
- Develop sufficient depth of knowledge and skill for graduate study in the health professions or other biology-related disciplines or entry-level employment in a wide variety of health-related fields.

Technological Proficiency and Hardware/Software Required

Although there are no specific technology/software requirements *per se*, you will need an internet-enabled device with browser capabilities, such as a cell phone, tablet, laptop or desktop computer, to access Blackboard, which will be the gateway for online synchronous Zoom lectures and most assignments as well as the repository for lecture slides, Zoom videos, and other course materials. In addition, students will need to download and utilize Respondus Lockdown Browser to take all scheduled exams. Support for such resources can be found at the ITS Customer Support Center.

USC Technology Rental Program

If students need resources to successfully participate in this class, such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program. To apply, please submit an application. The Student Basic Needs team will contact all applicants in early August and distribute equipment to eligible applicants prior to the start of the Fall semester.

USC Technology Support Links

Zoom information for students
Blackboard help for students
Software available to USC Campus

Required Materials

Motor Learning and Control. 12th ed. Magill and Anderson. McGraw Hill LLC, New York, NY, 2021, ISBN 9781264144358 (eBook) or 9781260838664 (loose-leaf) or 9781260240702 (bound edition).

Laboratory Manual for Motor Control and Learning by M. Matveyenko.
The ebook or spiral bound hard copy is available for purchase at USC Custom Publishing.

Description and Assessment of Assignments

Written Exams will be administered synchronously online on specific days during the class period (see Course Schedule below). Exams will be used to access all of the learning objectives. Exams may include multiple choice, multiple answer, true or false, fill-in-the-blank, short answer, or essay questions. A request to take a make-up exam must be accompanied by evidence of a university-sanctioned excused absence (*e.g.,* a letter from a doctor, athletic release, etc.) and must be made before the date of the scheduled exam. Make-up exams may be given in a different format from that of the scheduled exam (*e.g.,* essay). Students who live in a different time zone in which synchronous exam completion would be extremely inconvenient should contact me during the first week of class in order to potentially make other arrangements for taking exams*.*

In-Class Work will be unscheduled during synchronous Zoom classes and will be used to access all learning objectives. Work may include small group assignments, polls, a summary of lecture points, open-note quizzes, problem solving in groups, a submitted question of a "muddy point," or other assignments to be submitted or reported on by the end of class. When working in groups, all members will receive the same score for the work product. Students who miss an assignment as a result of either arriving late or leaving early will not have the opportunity to make up the work. However, the lowest three in-class assignments will be dropped to allow for occasional absences. Students who live in a different time zone in which synchronous in-class assignment completion would be extremely inconvenient should contact me during the first week of class in order to potentially make other arrangements for completing in-class work.

Grading Breakdown

Assignment	Points	% of Grade
Midterm Exam 1	200	20
Midterm Exam 2	250	25
Laboratory	250	25
Final Exam	250	25
In-Class Work	50	5
Total	**1000**	**100**

Grading Scale

Letter Grade	Point Ranges	Grade Point Value
A	930 - 1000	4.0
A-	900 - 929	3.67
B+	870 - 899	3.33
B	830 - 869	3.0
B-	800 - 829	2.67
C+	770 - 799	2.33
C	730 - 769	2.0

C-	700 - 729	1.67
D+	670 - 699	1.33
D	630 - 669	1.0
D-	600 - 629	0.67
F	<600	0.0

Individual assignments, exams and labs will be scored but not assigned a letter grade. Only the final point tally will be assigned a letter grade.

Description and Assessment of Assignments/Exams

Class material will be evaluated via in-class work and exams.

Lab material will be evaluated via lab assignments, projects, presentations and exams.

In-class work will be given during lectures and will be based on the material discussed. Such assignments are intended to be a learning tool and thus are only meant for students that attend lectures (either synchronously or asynchronously).

Exams will not be given a letter grade. Only the final grade will be given a letter grade.

A request to take a make-up midterm exam must be accompanied by evidence of necessity (i.e.,: letter from a doctor, etc.) and must be made before the date of the scheduled exam.

Late Work

All in-class assignments will be due when stated and cannot be made up if missed unless other arrangements have been made.

Blackboard

Blackboard will be used to post announcements, handouts, articles, rubrics, deadlines, and feedback from in-class assignments.

Lecture slides will be posted under content and should serve as a starting point for note taking.

Scores will be posted in the grade book in Blackboard but *please ignore the total grade column as it is weighted and not accurate.*

Communication Policies

Students are *strongly* encouraged to contact the instructor in regard to all matters involving course content or policy during Zoom office hours. Should you have a question about specific course content and cannot attend office hours, students are encouraged to submit their question to the course blog. Should you need to communicate with the instructor outside of class or office hours about a question other than course content, please email the instructor from your USC email account *making sure to include in the subject line the course number and your full name* (expect significant delays or no response if this information is omitted). Simple questions will be answered by email but, for more complex discussions, students may be instructed to visit office hours. Best attempts will be made to answer all emails within 48 hours, 72 hours over a weekend and the work day following a holiday. Note that the instructor may not respond to non-emergency emails 24 hours preceding an exam and may not respond to emails sent from non-USC accounts.

To promote independence and critical thinking, students are encouraged to work through the following process for obtaining answers to course-related questions before contacting the instructor. First, consult the course syllabus. If you cannot find the answer you need, next consult a classmate. If you still cannot find a satisfactory answer, email the

instructor using your USC email *making sure to include the course number and your full name in the subject line* (expect significant delays or no response if this information is omitted). In your email, please indicate the steps you have gone through to seek the answer for your question. Use your USC email account for all correspondence with the instructor.

Technology Policies

During synchronous Zoom sessions, it is expected that students will use their internet-enable device(s) to participate in activities guided by the instructor alone. Such activities include looking up terms, doing research, and completing in-class work. Please make sure all electronic devices are silenced so as not to disturb classmates or the instructor during synchronous sessions. Use of electronic devices for other purposes during class is strongly discouraged and you may be asked to put a device away should your instructor deem it to be disruptive to class. If you require an internet-enabled device, please see the "Technological Proficiency and Hardware/Software Required" section above.

Attendance

Attendance in synchronous Zoom sessions is mandatory given in-class assignments cannot be made up unless a student has been excused from such an assignment due to a University-sanctioned excuse (*e.g.,* illness, religious holiday, athletic event, etc.) or because they live in a time zone in which attending such sessions is extremely inconvenient and they have made other arrangements for the assessment of in-class skill sets with the instructor.

Classroom Norms

At all times, students are expected to promote and support a positive learning environment, to listen actively and attentively, to follow best practices of inclusivity, to be respectful of the instructors' and fellow students' views and opinions, and to only provide *constructive* criticisms and critiques when asked to do so.

Zoom Etiquette

In order to simulate an in-class-room experience during synchronous Zoom sessions, one that promotes positive interactions and feedback to the instructor and fellow students, students are strongly encouraged to attend the sessions dressed in classroom attire and to turn on their webcams if they are located in a learning-appropriate environment. So as to circumvent Zoombombing, synchronous Zoom sessions will be password protected and students will only be allowed to enter through the USC's Blackboard site when displaying their full name as it appears in the class roster (aliases are not permitted). Microphones should be muted unless actively asking questions or involved in discussion. In-meeting chat will likely be enabled but actively monitored for disruptive or inappropriate posts and recorded for further review. Disruptive or inappropriate behavior will not be tolerated and anyone engaging in such behavior shall be removed from the session. Should bandwidth be an issue, try joining with the video from your webcam and use your cellphone for the audio. If you have any questions or concerns about complying with these policies, please email the instructor.

Synchronous Session Recordings

All synchronous sessions except for office hours will be recorded and posted on Blackboard, typically within a few hours of the session.

Sharing of Course Materials Outside of the Learning Environment is Strictly Prohibited

USC has a strict policy (SCampus Section 11.12[B]) that prohibits sharing of *any* synchronous and asynchronous course content outside of the learning environment. Any student who violates this policy will be prosecuted to the maximum extent allowable by the USC Student Conduct Code, including failure of the course and suspension from the University.

Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes,

Tentative Course Schedule

Date	Lecture Topic	Magill & Anderson
Jan. 15	Introduction	
Jan. 18	**Martin Luther King Junior Holiday**	
Jan. 20	Skills	Ch. 1
Jan. 22	Motor Skills	Ch. 1
Jan. 25	Measurement of Motor Performance	Ch. 2
Jan. 27	Motor Abilities I	Ch. 3
Jan. 29	Motor Abilities II	Ch. 3
Feb. 1	*Active Learning I*	
Feb. 3	Neuromotor Basis for Motor Control I	Ch. 4
Feb. 5	Neuromotor Basis for Motor Control II	Ch. 4
Feb. 8	Motor Control Theory I	Ch. 5
Feb. 10	Motor Control Theory II	Ch. 5
Feb. 12	Motor Control Theory III	Ch. 5
Feb. 15	**Presidents' Day Holiday**	
Feb. 17	*Active Learning II*	
Feb. 19	Sensory Information I	Ch. 6
Feb. 22	Review	
Feb. 24	**Midterm Exam 1**	
Feb. 26	Sensory Information II	Ch. 6
Mar. 1	Sensory Information III	Ch. 6
Mar. 3	Motor Control Characteristics I	Ch. 7
Mar. 5	Motor Control Characteristics I	Ch. 7
Mar. 8	*Active Learning III*	
Mar. 10	Action Preparation	Ch. 8
Mar. 12	**Wellness Day**	
Mar. 15	Attention and Memory I & II	Ch. 9
Mar. 17	Memory Components	Ch. 10
Mar. 19	*Active Learning IV*	
Mar. 22	Learning Assessment	Ch. 11
Mar. 24	Review	
Mar. 26	**Midterm Exam 2**	
Mar. 29	Stages of Learning	Ch. 12
Mar. 31	*Active Learning IV*	

Apr. 2	Transfer of Learning	Ch. 13
Apr. 5	Verbal Instruction	Ch. 14
Apr 7	**Wellness Day**	
Apr. 9	Augmented Feedback I & II	Ch. 15
Apr. 12	Practice Variability	Ch. 16
Apr. 14	Amount and Distribution of Practice	Ch. 17
Apr. 16	Whole and Part Practice	Ch. 18
Apr. 19	*Active Learning V*	
Apr. 21	Mental Practice	Ch. 19
Apr. 23	Selected Topics	
Apr. 26	Selected Topics	
Apr. 28	**Review**	
Apr. 30	**Wellness Day**	
May 5	**Semi-Comprehensive FINAL EXAMINATION 11:00 am – 1:00 pm**	

Academic Accommodations

Any student requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the instructor as early in the semester as possible. DSP is located in Student Union (STU) 301 and is open 8:30 a.m. – 5:00 p.m. Monday – Friday. The phone number for DSP is (213) 740-0776.

Academic Integrity and Conduct

Students who violate University standards of academic integrity are subject to disciplinary sanctions, including failure of the course and suspension from the University. Given that dishonesty in any form harms not only the individual but other students and the University, academic integrity policies will be strictly enforced. Please familiarize yourself with the Academic Integrity guidelines found in the current SCampus (Student Handbook).

Plagiarism, *i.e.,* presenting someone else's ideas as your own, either verbatim or recast in your own words, is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. Additional information can be found in SCampus as well as university policies on scientific misconduct (policy.usc.edu/scientific-misconduct).

Academic Integrity Violations

Academic dishonesty/misconduct, e.g., plagiarism, cheating, unauthorized collaboration, etc., will not be tolerated. All academic integrity violations will result in a grade sanction and will be reported to the Office for Student Judicial Affairs. It is your responsibility to "reasonably" protect your own work from the plagiarism of others.

If plagiarism is detected on a group project, all members of the group will be held responsible.

You are expected to be familiar with the Academic Integrity guidelines found in the current SCampus. An electronic version is available at http://usc.edu/scampus.

Disruptive and Threatening Student Behavior

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and the instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.

Support Systems

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.