



George Mason University
College of Education and Human Development
School of Kinesiology

KINE 404.001: Motor Control and Learning
KINE 604.001: Motor Control Theory and Application
3 Credits, Spring 2024, T, Th 9:00 AM – 10:15 AM,
Katherine Johnson Hall 131 – SciTech Campus

Faculty

Name: Dr. Tiphanie Raffegeau
Office Hours: in-person Mondays 10 AM- 11:50AM in 201G or by appointment (zoom)
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Prerequisites/Corequisites

Enrollment is limited to students who have completed 90 credit hours of undergraduate work.

University Catalog Course Description

Covers motor control theory and application to common activities such as gait, balance and more complex movement skills.

Course Overview

The course is designed to expose students to the advanced principles and theory of motor control commonly used by practitioners working with patients across the lifespan and ability level.

Course Delivery Method

This course will be delivered using a mix of a lecture, in-class activities, discussions, lab reports, and/or hybrid (25-75% online). Other approaches may be used to facilitate learning, such as videos, discussions, and in-class activities. Overall, this will be a highly interactive class and students will be encouraged to participate.

Learner Outcomes or Objectives

This course is designed to enable students to do the following:

1. Demonstrate an understanding of motor control concepts and theories
2. Compare strengths and weaknesses of common theories of motor control

3. Analyze how the neuromuscular system controls common movements across the lifespan
4. Design population-specific interventions that apply motor control theories to improve motor skill performance and acquisition

Professional Standards

This course meets the Commission on Accreditation of Allied Health Education Programs (CAAHEP) requirements and covers the following American College of Sports Medicine’s Knowledge-Skills-Abilities (KSA's):

Required Texts

- Coker, C.A. (5th edition). Motor learning and control for practitioners. New York, NY: Routledge. (ISBN 9781138737013)

Supplementary materials

Supplementary materials will be used in class and posted on BlackBoard/MyMason Portal. Please bring your laptop/device to class so that you have access to them when needed, or be prepared to print the materials in advance.

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard).

Students will be evaluated on content standards (knowledge gained) and performance (demonstration of the content). Content standards will be assessed via exams, short quizzes, and homework assignments. Performance will be assessed through completion of class activities. Once your FINAL GRADE, at the end of the semester is posted on mymasonportal/blackboard, you will have 24 hours to inquire about it. After that period, your grade will be posted as final on Patriot Web.

Possible points earned for the course:

KINE 404		KINE 604	
<i>Activities</i>	<i>Points (%)</i>	<i>Activities</i>	<i>Points (%)</i>
Unit 1-15	30	Unit 1-15	15
Content Quizzes	40	Content Quizzes	25
Scientific Communication Final Project	10	Scientific Communication Final Projects	35
Seminar Summary EC	1	Seminar Summary	5
Professionalism	20	Professionalism	20
TOTAL	100	TOTAL	100

Grading Scale

A+ = 97 – 100	B+ = 87 – 89	C+ = 77 – 79	D = 60 – 69
A = 94 – 96	B = 84 – 86	C = 74 – 76	F = 0 – 59
A- = 90 – 93	B- = 80 – 83	C- = 70 – 73	

Assignments and/or Examinations

Unit Content

Each week you will have a series of activities to complete related to the textbook and course content. The activities will vary and may require anywhere from 3-9 hours to complete each week, depending on your learning style and the material. Each unit will open on Sunday at 12:30am, the weekend before we discuss the material in lecture. **Unit activity deadlines will vary as some activities will need to be completed before our Tuesday meeting, and others before our Thursday meeting,** to prepare you for in-class discussion and collaborative work. Some work will be due at the same time as your content quizzes (see below), Sunday at midnight (really, 11:59 PM).

Weekly Quizzes

Instead of exams, each Unit will have a content quiz included that must be completed by the end of the week, due by Sunday at midnight (really, 11:59 PM). The quizzes will include multiple choice, matching, short answer, and essay questions. I expect you to be able to take these quizzes independently as they will be open-book/open-note quizzes (No need for LockdownBrowser) but they will be timed (~1 minute per multiple choice question) and administered in a random order. You will be able to retake quizzes once, but you will not get feedback about correct answers in the quiz. If you have questions about your performance on a quiz, you will need to meet with Dr. Raffegau in-person after class, during office hours, or by appointment as she will not share answers or guidance over email or zoom.

Professionalism

Students are expected to behave in a professional manner. Depending on the setting professionalism may look slightly different but generally consists of similar components. For Kinesiology students in a classroom setting professionalism generally consists of the following components (see <https://cehd.gmu.edu/students/polices-procedures/>). Students are held to the standards of the George Mason University Honor Code. You are expected to attend all class sections, actively participate in class discussions, complete in-class exercises and fulfill all assignments. Make-up tests, quizzes, assignments, or other grades will be granted for excused absences only. Excused absences include serious illness, official university excused absences and extenuating circumstances. It is the student's responsibility to contact the instructor in order to obtain the make-up work.

Attendance and Participation Show up on time to in-person and online class meetings, pay attention, and engage yourself in the lessons, discussions, class activities, etc. Demonstrate that you have an interest in the subject matter. Follow George Mason University policies for any excused absences (i.e. communicate with your professor in advance). Arriving to class late or leaving early will be counted as an absence. Students are expected to show up prepared to class and participate during class activities. Students who know they will need to miss a class for a legitimate reason should contact the instructor before the class. Make-up tests, quizzes,

assignments, or other grades will be granted for excused absences (See [AP. 1.6](#)). Excused absences include: serious illness, official university excused absences and extenuating circumstances. It is the student's responsibility to contact the instructor ASAP to obtain the make-up work.

Communication: When communicating with the instructor and classmates, either face-to-face or via email, students should address the other person appropriately, use appropriate language and maintain a pleasant demeanor. Everyone should feel welcome in my classroom and all students will be treated equally. I have a zero-tolerance policy for intolerance and if you disrupt someone's learning experience, I reserve the right to remove you from the class for the day. Before attending another class, any disruptions will be addressed outside of class with appropriate documentation.

Attendance is required and will be recorded in the first five minutes of every class meeting.

Attendance will be taken in the first five minutes of class using a one-time Pincode through Blackboard using Qwickly (Go to Blackboard: Tools: Qwickly). After the link is closed, you will be recorded as absent, and you will lose Professionalism points.

Scientific Communication Project: Effectively communicating scientific information is a critical workplace skill for all Kinesiology majors. *All students* will have the opportunity to practice their scientific communication skills in a traditional essay format, blog post, podcast, and tik-tok style video OR infographic. Students enrolled in 404 will **choose 1** option to complete by their respective due dates (see below). Students enrolled in 604 will **complete all 4 modalities** of scientific communication by their respective due dates. See Blackboard for details.

Seminar Summary:

Students enrolled in 604 will be required to attend one Seminar hosted by Mason's Department of Bioengineering. Seminars are hosted on Thursdays from 12-1pm in Horizon Hall, room 1010. It is also livestreamed to the Science and Technology Campus in KJH 246. After attending, you will submit a 2 page summary (double spaced, 12 pt font) explaining the researcher's background, line of work, and what they presented in the seminar talk. Seminars are hosted weekly and summaries will be due by the end of the semester, so will have ample opportunity to plan your seminar attendance. Students enrolled in 404 can complete this assignment for extra credit.

No late work will be accepted for full credit without previous arrangement with the professor. Extension requests must be submitted with an excusable explanation as to why the student is unable to complete the assignment on time. No extension requests will be granted if submitted after the assignment deadline.

Any work submitted after the explicitly stated **date and time** (see below **and** on Blackboard) will lose 10% per 1-hour delay, up until a 50% reduction for submitting an assignment one day late. After 24 hours, the assignment will not be accepted. If you are confused about this policy or you see a mistake or miscommunication somewhere on our syllabus or blackboard course, it is your responsibility to contact Dr. Raffegau immediately. Not contacting Dr. Raffegau in advance indicates you understand and accept the course deadlines, including date and time.

Week	Des	Topic	Readings	Due Dates
Week 1	1/15-1/21	Introduction to Motor Control and Motor Learning	Ch 1	Unit 1 due at 11:59PM 1/21
Week 2	1/22-1/28	Understanding Movement Preparation	Ch 2 & Ch3	<i>Last Day to Add Classes: 1/23/24</i> Sci-Comm Project Topic Selection Due Th 1/25 Unit 2 due at 11:59PM 1/28
Week 3	1/29-2/4	Neural Mechanisms of Motor Control Part 1	Ch 5 Readings on BB	<i>Last Day to Drop Classes (with 100% refund): 1/30/2024</i> Unit 3 due at 11:59PM 2/4
Week 4	2/5-2/11	Neural Mechanisms of Motor Control Part 2	Ch 5 Readings on BB	<i>Last Day to Drop Classes (with 50% refund): 2/6/2024</i> Unit 4 due at 11:59PM 2/11
Week 5	2/12-2/18	Behavioral Theories of Motor Control and Learning Part 1	Ch 4 Readings on BB	Unit 5 due at 11:59PM 2/18
Week 6	2/19-2/23	Behavioral Theories of Motor Control and Learning Part 2	Ch 4 Readings on BB	Sci-Comm Project: Essay due Sunday 2/25 at 11:59PM Unit 6 due at 11:59PM 2/25
Week 7	2/26-3/1	Defining and Assessing Stages of Motor Learning	Ch 6	Unit 7 due at 11:59PM 3/3
Week 8*	3/4-3/8	SPRING BREAK <i>No Class</i>		
Week 9	3/11-3/17	Motor Learning: The Learner	Ch 7	Unit 8 due at 11:59PM 3/17
Week 10	3/18-3/24	Motor Learning: The Instructor (Skill Presentation)	Ch 8	Sci-Comm Project: Blog Post due Sunday 3/24 at 11:59PM Unit 9 due at 11:59PM 3/24
Week 11	3/25-3/31	The Role of Attention, Arousal, and Visual Search in Motor Control and Learning	Ch 3	Guest lecture, Bradley Fawver, PhD, Principal Investigator at Department of Defense Unit 10 due at 11:59PM 3/31

Week 12	4/1-4/7	Principles of Practice Design and Schedules	Ch 9 & 10	<i>Sci-Comm Project: Infographic/Tik Tok video due Sunday 4/7 at 11:59PM</i> <i>Unit 11 due at 11:59PM 4/7</i>
Week 13	4/8-4/14	Feedback for Diagnosing and Correcting Errors	Ch 11 & Ch 12	<i>Unit 12 due at 11:59PM 4/14</i>
Week 14	4/15-4/21	Motor Control and Development	Readings on BB	<i>Unit 13 due at 11:59PM 4/21</i>
Week 15	4/22-4/28	Motor Control and Aging	Readings on BB	<i>Sci-Comm Project: Podcast due Sunday 4/28 at 11:59PM</i> <i>Unit 14 due at 11:59PM 4/28</i>
Week 16	4/29-5/5	KINE 404/604 <i>Final Exam Period: Thursday May 2nd, 7:30-10:15AM</i>		<i>Presentation Day/Last Day of Classes: 4/29 Reading Days: 4/30 and 5/5</i> <i>Unit 15 due at 11:59PM 5/5</i>
Finals Week	5/6-5/10			<i>Final Exams: Wednesday, May 1st to Wednesday, May 8th</i>

Academic Honesty

The integrity of the University community is affected by the individual choices made by each of us. As a Mason student, you should follow these fundamental principles at all times, as noted by the Honor Code: (1) All work submitted should be your own, without the use inappropriate assistance or resources, as defined by the assignment or faculty member; (2) When you use the work, the words, the images, or the ideas of others--including fellow students, online sites or tools, or your own prior creations--you must give full credit through accurate citations; (3) In creating your work, you should not take materials you are not authorized to use, or falsely represent ideas or processes regarding your work. If you are uncertain about the ground rules or ethical expectations regarding the integrity of your work on a particular assignment or exam, you should ask your instructor for clarification. Support for you to complete your work is available; no grade is important enough to justify academic misconduct. Any student use of Generative-AI tools should follow the fundamental principles of the Honor Code.

disAbility Resources

If you need accommodations for this course, please inform Dr. Raffegeau as soon as possible. Differently-abled students who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <https://ds.gmu.edu/>).

Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities.

Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit

<http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474.

Diversity and Inclusion

This classroom is an intentionally inclusive community that promotes and maintains an equitable and just work and learning environment. We welcome and value individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and ability status.

- We value our diverse student body and desire to increase the diversity of our faculty and staff.
- We commit to supporting students, faculty and staff who have been the victims of bias and discrimination.
- We promote continuous learning and improvement to create an environment that values diverse points of view and life experiences.
- We believe that faculty, staff and students play a role in creating an environment that engages diverse points of view.
- We believe that by fostering their willingness to hear and learn from a variety of sources and viewpoints, our students will gain competence in communication, critical thinking and global understanding, and become aware of their biases and how they affect their interactions with others and the world. [This statement was created by the School of Integrative Studies faculty.]

Campus Resources

If you are experiencing feelings of anxiety, panic, depression, sadness during the semester, Student Health Services and [Counseling and Psychological Services](#) Offices (703-993-2380) provides a range of resources to assist and support you. Students can call (703-993-2831) or walk-in during open hours to schedule an appointment to talk with a healthcare provider. If you or someone you know experiences a mental health crisis or emergency, seek help immediately. Call 911 for local emergency services, the National Suicide Prevention Lifeline (1-800-273-8255), or text the Crisis Text Line (741-741) anytime. Dr. Raffegau is also available to speak with you about stresses related to your work in this course, please reach out.

Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code (see <https://catalog.gmu.edu/policies/honor-code-system/> <http://oai.gmu.edu/the-mason-honor-code/>).

- Students must follow the university policy for Responsible Use of Computing (see <https://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to VIA should be directed to viahelp@gmu.edu or <https://cehd.gmu.edu/aero/assessments>. Questions or concerns regarding use of Blackboard should be directed to <https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/>.
- For information on student support resources on campus, see <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>

Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking:

As a faculty member, I am designated as a “Responsible Employee,” and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason’s Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/students/>

Student Acknowledgement of Syllabus

I, _____, by signing below, attest to the following:
(Print First and Last Name)

- *I have read the course syllabus for KINE 404-604 in its entirety, and I understand the policies contained therein. This syllabus serves as a binding contract for KINE 404-604 between the instructor and myself.
- *I have a clear understanding of the due dates for assignments and examinations, and I accept responsibility for the material.
- * I am aware that failure to submit assignments by the assigned deadline will result in a loss of 10% per 1 hour delay up to 50% reduction for submitting a day late, and no work accepted will be accepted 24 hours after the deadline.
- *I understand that if I am using emitting sound technology or personal computers I will be dismissed from class for the day and not permitted to make up missed assignments
- *I understand the instructor reserves the right to alter the provided schedules as necessary and I am responsible for the assignments and examination dates for the most current version of the syllabus schedule.
- *I accept responsibility for reading announcements that are sent to me via e-mail through BlackBoard/MyMason Portal; it is my responsibility to access my Blackboard/MyMason Portal e-mail for messages, or forward Blackboard/MyMason Portal e-mail as per the directions provided in the syllabus.

Points cannot be earned in this class until you have signed and handed this form to the instructor.

(Signature)

(Date)

(Save a copy for your reference)