

# KIN 525 – Motor Learning - Theories and Research

## Course Syllabus

**Professor:** Jared M. Porter, Ph.D.

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**Prerequisite:** Graduate student standing

**General description:** This course is intended to provide students with a theory and research foundation for understanding motor skill acquisition and factors that influence the learning of motor skills. This foundation is important to develop research that will increase our understanding of motor skill learning, and to design effective instructional and practice conditions that can enhance skill learning. The course is designed for graduate students who plan to go into professions in which research related to human motor skill is required, or who are in (or plan to go into) professions in which assisting people to learn (or re-learn) motor skills is an important part of the job, such as teaching, coaching, physical therapy, occupational therapy, industrial training, athletic training, and various medical/rehabilitation related careers, etc. Throughout the course various topics related to the cognitive and motor processes influencing the learning of motor skills will be discussed. Specifically, topics to be covered will include the assessment of learning, changes during learning, attention, augmented feedback, transfer of learning, and practice conditions, with implications for a variety of skill instruction and rehabilitation contexts.

**Course objectives:** This course is designed to help students gain:

1. knowledge about characteristics that distinguish the various types of motor skills;
2. knowledge about performance/performer characteristics that influence motor skill performance and learning;
3. knowledge about the assessment of motor skill learning and characteristics of the various stages of skill learning;
4. knowledge of motor skill learning principles and their applications to motor skill learning environments;
5. experiences in various motor learning research activities and writing about those experiences;
6. a better understanding of techniques used to conduct motor learning research;
7. knowledge about constructing efficient and effective learning environments;

**Textbook:** Schmidt, R.A. & Lee, T.D. (2005) *Motor control and learning: A behavioral emphasis* (4<sup>th</sup> ed.) Champaign, IL: Human Kinetics.

It is also recommended that you have a copy of the *Publication Manual of the American Psychological Association* (5<sup>th</sup> or 6<sup>th</sup> edition).

In addition, book chapters and journal articles are used as readings to supplement the textbook. These readings will be supplied through Blackboard or distributed by Dr. Porter during the semester.

**Class Format:** The class format will be similar to a seminar; students are expected to have read all assigned readings prior to class. Each class discussion will be based on questions asked by and to students about assigned readings.

### Course Requirements

**Written exams (50%):** Two written, essay type exams will be given. One test will be given during mid-term week and the second exam will be given during final exam week.

**Review paper (40%):** Each student will prepare a manuscript that is a review of literature related to one of the topics covered in the course. The topic of your research paper must be approved by Dr. Porter prior to the mid-term exam. This manuscript must follow APA format. More specifics will be provided on separate handouts.

**Research presentation (10%):** Each student will give a short PowerPoint presentation that describes an experiment that would further our understanding of motor skill learning. The research question(s) presented in this presentation must come from the topic discussed in the review paper.

**Semester grading:**

50% = Two written exams (one mid-term and one final exam)

40% = Review paper

10% = Research presentation

**To calculate your semester grade:**

Multiply your exam avg. by .5; multiply your review paper score by .40; multiply your research presentation score by .1; add these three results together to determine your semester percentage score.

Use the grading scale below to determine your semester letter grade.

**Grading scale:** A = (90-100%); B = (80-89%); C = (70-79%); D = (60 – 69%); F = (0 – 59%)

\*\*Grades are rounded to the nearest tenth point (Example: an 89.5% would round up to a 90%, an 89.4% would round to an 89%)

**Emergency Procedures:**

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on the BERT's website at [www.bert.siu.edu](http://www.bert.siu.edu), Department of Public Safety's website [www.dps.siu.edu](http://www.dps.siu.edu) (disaster drop down) and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

**Proposed Course Calendar and Reading List**

Week 1	Introduction to the course and the study of motor learning <i>Text: chapters 1 and 2</i>
Week 2	Stages of learning, motor skill classifications <i>Gentile (2000), text pg. 113-118</i>
Week 3	Defining and assessing skill learning <i>Gentile (2000), text pg. 118-134</i>
Week 4	The skill learning process, power law of practice, explicit/implicit learning <i>Chapter 10</i>
Week 4	Attentional focus and capacity <i>Chapter 4, Wulf and Prinz (2001), Wulf (2007)</i>
Week 5	Instructional issues – observational learning <i>Text chapter 11,</i>
Week 6	Instructional issues – verbal instructions <i>Landin (1994)</i>
Week 7	<b>Exam 1, topic for research paper must be selected</b>
Week 8	Augmented feedback – types and effects of AF <i>Text chapter 12</i>
Week 9	Augmented feedback – frequency and timing of AF <i>Magill (2001) book chapter</i>
Week 10	Spacing of trials and sessions <i>Text chapter 11,</i>
Week 11	Variability <i>Text chapter 6 and 11</i>
Week 12	Contextual interference <i>Shea and Morgan (1979), Magill and Hall (1990), Porter et al. (2007)</i>
Week 13	Whole vs. part practice <i>Text chapter 11</i>
Week 14	Cognitive effort and practice specificity <i>Lee, Swinnen, &amp; Serrien. (1994)</i>
Week 15	Research presentations
Week 16	Final exam