EXSC 2670 MOTOR SKILL LEARNING AND PERFORMANCE (4 credit hours)

Elmira College

SPRING 2025

Required Text:

1. Schmidt, R. A., & Lee, T. D. (2020), ***Motor Learning and Performance***, 6th edition, Human Kinetics.
2. Rymer, W. Z., & Patton, J. L. (2018), ***Motor Control: Translating Research into Clinical Practice***, 5th edition, Wolters Kluwer.

Pre-requisites: None.

Course Description

This course focuses on motor learning and control, focusing on the structure and function of neuromuscular and sensory systems in movement regulation. Students learn assessment techniques to quantify and analyze motor performance, understanding their strengths and limitations. The course explores changes in motor function and performance across different life stages, including childhood, adolescence, adulthood, and old age, as well as alterations due to injury or disease.

Course Objectives and Goals

- Understand the fundamental principles and theories of motor learning and control, including the roles of neuromuscular and sensory systems in regulating movement.
- Apply various assessment techniques to evaluate motor performance and interpret the results effectively.
- Analyze how motor function and performance evolve across different life stages and in response to injury or disease.
- Evaluate and discuss different theoretical models that explain motor control, motor learning, and skill acquisition.
- Design and implement effective motor learning environments and training protocols tailored to individual needs and contexts.

Evaluation of Performance

Your grade will be based upon your performance on exams, assignments, and participation.

5 Labs and Reports	35%
2 Quizzes	15%
Midterm Exam	20%
Final Exam	30%
Total	100%

Grades will be assigned as follows:

A	93% and above	B-	80 - 82%	D+	67 - 69%
A-	90 - 92%	C+	77 - 79%	D	63 - 66%
B+	87 - 89%	C	73 - 76%	D-	60 - 62%
B	83 - 86%	C-	70 - 72%	F	59% or below

Withdrawal Policy: Please see Elmira College Bulletin for information on this policy.

Academic Honesty: Please read the section on Academic Honesty in the **Code of Conduct**. Briefly, academic dishonesty includes: cheating, fabrication, facilitating academic dishonesty, and plagiarism. Ask if you have any questions on whether something constitutes as academic dishonesty. All work must be original and new. Past assignments from current or other courses will not be accepted. Academic dishonesty will not be tolerated. It will result in zero on the assignment, and a report will be filed with the school. Continued practice will result in failure of the class. Institutional penalties may also apply with repeated acts of academic honesty.

Student Responsibility:

- It is your responsibility to keep track of assignments and due dates.
- You should ask questions concerning assignments and lectures, if you need any clarifications.
- If you are struggling in class, have concerns, and/or unsure about expectations, please stop by during office hours or make an appointment for another time.

Tentative Schedule of Topics

Topic	Materials	Tasks & Evaluations
Introduction to Motor Learning and Control	Chapter 1	
Theoretical Foundations of Motor Control	Chapter 2	Lab and Report 1
Neuromuscular System and Movement	Chapter 3	
Sensory Integration and Motor Coordination	Chapter 4	Quiz 1
Theories of Motor Control	Chapter 5	
Information Processing and Dynamical Systems	Chapter 6	Lab and Report 2
Assessment of Motor Performance	Chapter 7	
Motor Development Across the Lifespan	Chapter 8	Midterm Exam
Feedback and Instruction in Motor Learning	Chapter 9	
Practice Scheduling and Training Methods	Chapter 10	Lab and Report 3
Variability in Practice: Contextual Interference and Transfer	Chapter 11	
Attention and Motor Control	Chapter 12	Quiz 2
Memory Processes in Motor Learning	Chapter 13	
Advanced Motor Control: Adaptation and Learning	Chapter 14	Lab and Report 4
Individual Differences in Motor Learning	Chapter 15	
Motor Control in Complex and Dynamic Environments	Chapter 16	Lab and Report 5
Technological Innovations in Motor Learning	Chapter 17	
Application of Motor Learning Principles in Sports and Rehabilitation	Chapter 18	Final Exam