

EXS 529 ADVANCED MOTOR BEHAVIOR
SUNY Cortland
Exercise Science and Sport Studies Department

Course Information

Credit Hours: 3.0

Semester/Year: Spring 2007

Class Location: Studio West 134

Text(s) Required:

Schmidt, R. A., & Lee, T. D. (2005). *Motor learning and control* (4th ed.).
Champaign, IL: Human Kinetics.

Professor Information

Instructor: Joy L. Hendrick, Ph.D.

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Office Location: Studio West 152

Office Hours: Mon 10-11:45 am,
Wed 10-12:30; Th 12-12:30

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COURSE DESCRIPTION:

This is an advanced course in motor behavior. Content includes coverage of the learning process, human information processing, attention and performance, skill acquisition practice considerations and current issues in motor behavior with research implications. Prior knowledge of motor behavior is expected.

COURSE ATTENDANCE POLICY:

Class attendance is required, however, students will not be penalized for having one unexcused absence. Afterwards, there will be up to a letter-grade deduction on the final grade for each additional absence. Illness, travel, appointments, and coaching obligations are some examples of **un**excused absences. Hospitalization, death in the immediate family, away SUNY Cortland athletic contests are examples of excused absences. No handouts, notes or assistance will be given for material distributed or covered during an unexcused absence (or an excused absence without prior, written notification). *Students are 100 percent responsible for all work missed, regardless of the type of absence.* In the event of extreme winter weather later in the semester, students should refer to the college home page in the mid afternoon to see if cancellation notices are posted. Otherwise, students should assume the classes will be held.

EVALUATION OF STUDENT PERFORMANCE:

Requirements and Evaluation:

I.	Examinations (2-3)	50%
II.	Assignments	<u>50%</u>
	Total	100%

ASSIGNMENTS: No assignments/handouts will be given out after the class session in which they were distributed, unless previous arrangements had been made. All written work will be collected at the beginning of class on the day it is due. No late work will be graded for credit. All work due on the day of an excused absence is still expected to be turned in on time, unless previous arrangements have been made. Each student is expected to submit his/her own work, including calculations and computer assignments (refer to the section in the *College Handbook* on Academic Dishonesty). Assignments will include:

Refereed Journal Article Abstracts (20-25%) – Four-five refereed journal articles will be assigned throughout the semester to be read and then summarized in abstract form. These must be typed (2 pages max, double-spaced). Each abstract will be worth 10 points and assessed by three 3-point rubrics (knowledge, quality product and critical analysis) and 1 point for following the APA format.

Research Project (20-25%) – As a culminating experience towards the end of the semester, students will design and carry out a research project. Specific information will be given at a later date.

Lab Assignments (5-10%) – As follow-ups to experiences in the MB lab, small exercises may be assigned regarding analyzing the data collected and applying the results.

EXPECTATIONS: For student success, expectations include: coming prepared and on-time to all classes, staying up-to-date and studying all assignments (this equates to **at least 5-6 hours of out-of-class time between each class session, with additional time for studying before each exam and/or working on projects**), turning in all assignments on-time, and seeking help and asking questions as soon as problems arise. Cell phones must be turned off during class.

TECHNOLOGY: Students are encouraged to use computers (either in one of the campus computer labs or one's personal computer) to enhance the quality of their written assignments. Students are also encouraged to obtain on-campus email accounts and to frequently check their email. Announcements and reminders may be distributed via email to the class at various times throughout the semester. Occasionally in class, references to web sites will be made. Therefore, students should be familiar with how to use the Internet and accessing reference material via the library databases.

ACADEMIC INTEGRITY: The College is an academic community, which values academic integrity and takes seriously its responsibility for upholding academic honesty. All members of the academic community have an obligation to uphold high intellectual and ethical standards. For more information on academic integrity and how academic dishonesty can occur, please refer to the *College Handbook*, the *College Catalog*, the *Code of Student Conduct and Related Policies* and at the following web site <http://w3.cortland.edu/conduct/sa.htm> All work submitted for this class must be each student's own work. Any work submitted (in part or whole) that is not unique will be considered plagiarized and will be treated as such per academic policy. This includes, but is not limited to, material retrieved from references; therefore proper documentation of cited material (using quotation marks with associated page numbers) is a must!

STUDENTS WITH DISABILITIES: SUNY Cortland is committed to upholding and maintaining all aspects of the federal Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. If you are a student with a disability and wish to request accommodations, please contact the Office of Disability Services located in B-1 Van Hoesen Hall or call (607)753-2066 for an appointment. Any information regarding your disability will remain confidential. Because many accommodations require early planning, requests for accommodations should be made as early as possible.

OBJECTIVES OF THE COURSE:

The student will be able to:

1. describe the historical development of motor behavior as a scientific discipline.
2. demonstrate an understanding of how information is processed and integrated in motor performance.
3. describe, apply and demonstrate the ability to use various motor behavior instruments and apparatus in the experimental study of motor behavior.
4. demonstrate an understanding of how various factors which influence skill acquisition, human movement and motor performance including practice considerations, augmented practice, theories of motor learning, attention and arousal, transfer considerations and individual differences.
5. conceptualize many current research practices, procedures and issues in the field of motor performance

COURSE OUTLINE:

- I. Introduction to Motor Behavior
 - A. Review of basic terminology
 - B. Historical development
 - C. Methodology
 - D. Traditional and classical studies
- II. Information Processing
 - A. Information processing models
 - B. Reaction Time
 - C. Theories of attention
 - D. Arousal and other influential factors
- III. Motor Learning
 - A. The Learning Process
 - B. Retention and Transfer
 - C. Augmented Feedback
 - D. Practice considerations
- IV. Current Issues and Potential Research Directions

SUPPLEMENTAL REFERENCES

Adams, J. A. (1997). Historical review and appraisal of research on the learning, retention and transfer of human motor skills. *Psychological Bulletin*, 101, 41-74.

American Psychological Association (2001). *Publication manual of the American Psychological Association* (5th ed.). Washington, DC: Author.

Corbetta, D., & Vereijken, B. (1999). Understanding development and learning of motor coordination in sport: The contribution of dynamic systems theory. *International Journal of Sport Psychology*, 30, 507-530.

- Hancock, G. R., Butler, M. S., & Fischman, M. G. (1995). On the problem of two-dimensional error scores; Measures and analyses of accuracy, bias and consistency. *Journal of Motor Behavior*, 27, 241-150.
- Henry, F. M. (1961). Reaction time-movement time correlations. *Perceptual and Motor Skills*, 12, 633-66.
- Henry, F. M., & Rogers, D. E. (1960). Increased response latency for complicated movements and a “memory drum” theory of neuromotor reaction. *Research Quarterly*, 31, 448-458.
- Hick, W. E. (1952). On the rate of gain of information. *Quarterly Journal of Experimental Psychology*, 4, 11-26.
- Kamen, G. (2004). Neuromotor issues in human performance: Introduction. *Research Quarterly for Exercise and Sport*, 75, 1-2.
- Kamen, G. (2004). Neural issues in the control of muscular strength. *Research Quarterly for Exercise and Sport*, 75, 3-8.
- Knight, C. A. (2004). Neuromotor issues in the learning and control of golf skill. *Research Quarterly for Exercise and Sport*, 75(1). 9-15.
- Latash, M. L. (1998). *Neurophysiological basis of movement*. Champaign, IL: Human Kinetics.
- Latash, M. L. (Ed.). (1998). *Progress in motor control: Vol. 1. Bernsteins’ traditions in movement sciences*. Champaign, IL: Human Kinetics.
- Newell, K. M., & Corcos, D. M. (Eds.) (1993). *Variability and motor control*. Champaign, IL: Human Kinetics.
- Park, R. J. (1994). A long and productive career: Franklin M. Henry- Scientist, Mentor, Pioneer. *Research Quarterly for Exercise and Sport*, 65, 295-307.
- Starkes, J. L., & Ericsson, K. A. (Eds.). (2003). *Expert performance in sports: Advances in research on sport expertise*. Champaign, IL: Human Kinetics.
- Ulrich, B. D., & Reeve, T G. (2005). Studies in motor behavior: 75 years of research in motor development, learning and control. *Research Quarterly for Exercise and Sport*, 76, S62-S70.
- Weiss, A. D. (1965). The locus of reaction time change with set, motivation and age. *Journal of Gerontology*, 20, 60-64.
- Welford (1952). The “psychological refractory period” and the timing of high-speed performance-a review and a theory. *British Journal of Psychology*, 43, 2-19.

Tentative Course Outline

<u>Date</u>	<u>Topic(s)</u>	<u>Textbook Readings* and Assignments</u>
Jan 22	Introduction	Chap. 1
Jan 30	Methodology; Motor Learning Concepts	Chap. 2 and 10
Feb 6	Research methods, Retention and Transfer and begin Information Processing	Chap. 10, 14; Abstract 1 due Chap. 3
Feb 13	Attention and Performance	Chap 3 and 4;
Feb 20	Lab Experience I	Abstract 2 due
Feb 27	EXAM 1	
Mar 6	The Learning Process	Chap 13
Mar 13	Spring Break (no class)	
Mar 20	Augmented Feedback	Chap 12; Abstract 3 due
Mar 27	Lab experience II	
Apr 3	Practice Organization and Individual Differences	Chap 11 and 9;
Apr 10	Expertise and Deliberate Practice	Abstract 4 due
Apr 17	EXAM 2	
Apr 24	Research project work in lab	Abstract 5 (?)
May 1	Research project work in lab	
May 8	Project Powerpoint Presentations	Project due

*Additional readings and articles may also be assigned