**Department of Kinesiology**

**Neuromotor Control—Course Syllabus**

**1. Course Number:** HLHP 7730

**Course Title:** Neuromotor Control

**Credit Hours:** 3 semester hours (Lecture 3)

**Prerequisites:** HLHP 3650 or inst. approval

**Co-requisites:** None

**2. Term:** Spring 2010

**Day/Time:** MW 12 – 1:30pm

**Instructor:** Michael Falvo, MS, CSCS

**Office Address:** COLSM 2050

**Contact Information:** MJFALVO@WUSTL.EDU

**Office Hours:** By appointment

**3. Texts or Major Resources:**

A. Purves, D. et al. (2008) *Neuroscience,* 4th Edition. Sunderland, MA: Sinauer Associates, Inc.

B. Journal articles

**4. Course Description:** Structure and function of the central and peripheral systems underlying human motor control.

**5. Student Learning Outcomes:** Upon completion of course, students should be able to recognize the role of the nervous system in movement production, sensory perception, and higher order cortical function. This includes, but is not limited to the following:

a. Cellular mechanisms of neural transmission

 b. Spinal and supraspinal connections governing movement control

 c. Neural control of posture and locomotion

 d. Interpretation of scholarly articles related to neural control

**6. Course Content Outline:** Note this schedule is tentative and subject to change

*Week* *Topic Readings: Purves*

Wk 1 (11, 13 Jan) Intro/Lab Techniques/Anat Review 1-22

Wk 2 (**20** Jan\*) Action Potentials/NMJ; **Lectures Assigned** 25-60

Wk 3 (25, **27** Jan) Synaptic Transmission; **Topics Due** 85-152

Wk 4 (1, 3 Feb) Peripheral Receptors/Reflexes 207-228; 397-421

Wk 5 (8, **10** Feb) Spinal Cord/Spinal Injury; **Lecture Outline Due**

Wk 6 (15, 17 Feb) Cortical Motor System/Pathways 423 - 452

Wk 7 (22, 24 Feb) Basal Ganglia 453 - 474

Wk 8 (1, 3 Mar) NO CLASS—independent work

Wk 9 (8, 10 Mar) Cerebellum 475 - 491

Wk 10 (22, 24 Mar) Vestibular System 343 -361

Wk 11 (29, 31 Mar) *Synaptic Plasticity/Motor Learning* 177 – 203

Wk 12 (5, 7 Apr) *Neuroplasticity/CNS repair* 611 - 658

Wk 13 (12, 14 Apr) *Aging CNS*

Wk 14 (19, **21** Apr) *Neurorehabilitation*; **Project Papers Due**

Wk 15 (**26**, **28** Apr) **Student Presentations**/**Exam questions distributed**

\*No class on Jan 18th in observance of MLK Day

**7. Assignments/Projects:** Your final grade will be comprised of scores on the following: quizzes, lecture presentation, project paper, project presentation, and a final exam.

a. Quizzes: there will be approximately 10 announced short quizzes based on readings.

b. Lecture Presentation: students will choose (first come, first serve) one of the italicized topics (weeks 11 – 14), prepare and deliver a 45 – 60 min lecture. Depending on the number of students, topics will likely be divided amongst several students. Students should also incorporate recent papers relevant to the topic. Lectures must be chosen by January 20th and tentative outlines describing each student’s role should be turned in no later than February 10th.

c. Project Paper: students will develop a research project specific to the topic of this course, conduct a literature review, and write a proposal (intro, methods, expected results). Topics must be approved by instructor no later than February 3rd.

d. Project Presentation: students will give a 15 – 20 min presentation (powerpoint or poster) describing their project to the class. This should include a background and description of proposed research project.

e. Final Exam: the final exam will be in essay format and take place during the assigned exam day.

**8. Rubric and Grading Scale:**

*Item Total Points* *Final Letter Grade*

Quizzes 5 pts ea = 50 total 89.9 – 100 = A

Lecture Presentation 100 pts 79.9 – 89.8 = B

Project Paper 100 pts 69.9 – 79.8 = C

Project Presentation 75 pts 59.9 – 69.8 = D

Final Exam 75 pts < 59.9 = F

**9. Class Policy Statements:**

A. Attendance: Although attendance is not required, students are expected to attend all classes, and will be held responsible for any content covered in the event of an absence. 1. If an instructor chooses to require attendance, the attendance policy must be consistent with the university attendance policy outlined in the *Tiger Cub*. Instructors may not invoke grade penalties for appropriately documented excused absences.

B. Excused absences: Students are granted excused absences from class for the following reasons: illness of the student or serious illness of a member of the student’s immediate family, the death of a member of the student’s immediate family, trips for student organizations sponsored by an academic unit, trips for university classes, trips for participation in intercollegiate athletic events, subpoena for a court appearance, and religious holidays. Students who wish to have an excused absence from class for any other reason must contact the instructor in advance of the absence to request permission. The instructor will weigh the merits of the request and render a decision. When feasible, the student must notify the instructor prior to the occurrence of any excused absences, but in no case shall such notification occur more than one week after the absence. Appropriate documentation for all excused absences is required. Please see the *Tiger Cub* for more information on excused absences.

C. Make-Up Policy: Arrangement to make up a missed major examination (e.g., hour exams, mid-term exams) due to properly authorized excused absences must be initiated by the student within one week of the end of the period of the excused absences(s). Except in unusual circumstances, such as the continued absence of the student or the advent of university holidays, a make-up exam will take place within two weeks of the date that the student initiates arrangements for it. Except in extraordinary circumstance, no make-up exams will be arranged during the last three days before the final exam period begins.

D. Academic Honesty Policy: All portions of the Auburn University student academic honesty code (Title XII) found in the *Tiger Cub* will apply to university courses. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.

E. Disability Accommodations: Students who need special accommodations in class, as provided by the Americans with Disabilities Act, should arrange for a confidential meeting with the instructor during office hours in the first week of classes (or as soon as possible if accommodations are needed immediately). The student must bring a copy of their Accommodations Letter and an Instructor Verification Form to the meeting. If the student does not have these forms, they should make an appointment with the Program for Students with Disabilities, 1288 Haley Center, 844-2096 (V/TT).

F. Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below:

* Engage in responsible and ethical professional practices
* Contribute to collaborative learning communities
* Demonstrate a commitment to diversity
* Model and nurture intellectual vitality