MEMORANDUM

TO: Health Care Colleges Council

FROM: Sharon R. Stewart, Ed.D.
       CHS Associate Dean for Academic Affairs

RE: Request for changes to the curriculum in the Physician Assistant Studies program

DATE: March 19, 2010

I am attaching the proposal for changes to the RHB 710: Neuroplasticity course. The requested change in this elective course in the RHB Doctoral Program has been recommended for approval by the RHB program faculty, the Department of Rehabilitation Sciences, and the CHS Academic Affairs Committee. I support the proposed change.

The purpose of the proposed change is to increase the course credit from 2 hours to 3 credit hours. This increase more adequately reflects the class and workload requirements of the course for students. The attached memo fully describes the rationale for the requested change and the proposed revisions.

Please contact Dr. Richard Andreatta (323-1100, ext 80523) regarding any concerns or questions.
Memo

To: Janice Kuperstein, Ph.D. – RHB Dept Chair
    Carl Mattacola, Ph.D. – RHB PhD Program Division Director

From: Richard Andreatta, Ph.D.

CC: 

Date: 3/2/2010

Re: Request for change in RHB PhD Course – RHB 710 – Neuroplasticity.

Dear Janice & Carl,

Pat Kitzman and I would like to request your approval for an increase in credit hours for the course that we co-teach in the RHB PhD Program. Currently, RHB 710 – Neuroplasticity, is a 2 hr course that is offered every other Fall semester to our students as an elective. After several iterations of the course, it has become abundantly clear to us that the amount of work performed by the students in this course does not adequately reflect the 2 hr credit value. The 2 hr credit also does not capture the prep and work load performed by us as well. As such, we are submitting a course change application in order to increase our course’s hours from 2 to 3 credits. This increase will more adequately reflect the true effort put forth by our students and better captures our workload to deliver a high quality curricula. We have revised our syllabus to reflect an increase in credit hours. We have taken the following steps to improve the flow of the course by eliminating several weeks of student presentation and replacing these sessions with addition content and a round-table discussion session. Additionally, we have increased our weekly meeting time by 60 minutes, to 3 hours per week, bringing us closer to the true weekly instructional time commitment of the course.

Thank you for your time and please feel free to contact me if you should need any help or require additional information from us.

Sincerely,

Richard D. Andreatta, Ph.D., Associate Professor
Laboratory of Speech-Orofacial Sensorimotor Physiology.
Dept of Rehabilitation Sciences - Div of Communication Sciences & Disorders, & Rehabilitation Sciences Doctoral Program, College of Health Sciences.
Faculty Associate - Spinal Cord & Brain Injury Research Center - College of Medicine.
Wethington Bldg – Rm. 120-F,
University of Kentucky
Lexington, KY  40536-0200

E-mail: richard.andreatta@uky.edu
Office: (859) 323-1100, ext. 80523
Lab: (859) 323-1100, ext. 80525
REQUEST FOR COURSE CHANGE (MAJOR AND MINOR)

Complete 1a – 1f & 2a – 2c. Fill out the remainder of the form as applicable for items being changed.

1. General Information.
   a. Submitted by the College of: Health Sciences
   b. Department/Division: Rehabilitation Sciences - Rehab Sciences Doctoral Program
   c. Is there a change in “ownership” of the course? YES ☐ NO ☒
      If YES, what college/department will offer the course instead? ____
   d. What type of change is being proposed? ☒ Major ☐ Minor
t      (place cursor here for minor change definition)
   e. Contact Person Name: Richard Andreatta
      Email: randr2@uky.edu
      Phone: 859-323-1100
   f. Requested Effective Date: ☒ Semester Following Approval OR ☐ Specific Term: ____

2. Designation and Description of Proposed Course.
   a. Current Prefix and Number: RHB 710
      Proposed Prefix & Number: ____
   b. Full Title: NEUROPLASTICITY IN REHABILITATION.
      Proposed Title: ____
   c. Current Transcript Title (if full title is more than 40 characters):
      Proposed Transcript Title (if full title is more than 40 characters): ____
   d. Current Cross-listing: ☒ N/A OR Currently3 Cross-listed with (Prefix & Number): ____
      Proposed – ☐ ADD3 Cross-listing (Prefix & Number): ____
      Proposed – ☐ REMOVE3,4 Cross-listing (Prefix & Number): ____
   e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours5 for each meeting pattern type.
      Current: 32 hrs Lecture _____ Laboratory5 _____ Recitation _____ Discussion _____ Indep. Study
              _____ Clinical _____ Colloquium _____ Practicum _____ Research _____ Residency
              _____ Seminar _____ Studio _____ Other – Please explain: ____
      Proposed: 48 hrs Lecture _____ Laboratory _____ Recitation _____ Discussion _____ Indep. Study
              _____ Clinical _____ Colloquium _____ Practicum _____ Research _____ Residency
              _____ Seminar _____ Studio _____ Other – Please explain: ____
   f. Current Grading System: ☒ Letter (A, B, C, etc.) ☐ Pass/Fail
      Proposed Grading System: ☐ Letter (A, B, C, etc.) ☐ Pass/Fail
   g. Current number of credit hours: 2
      Proposed number of credit hours: 3

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1 See comment description regarding minor course change. Minor changes are sent directly from dean’s office to Senate Council Chair. If Chair deems the change as “not minor,” the form will be sent to appropriate academic Council for normal processing and contact person is informed.
2 Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
3 Signature of the chair of the cross-listing department is required on the Signature Routing Log.
4 Removing a cross-listing does not drop the other course – it merely unlinks the two courses.
5 Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)
h. **Currently, is this course repeatable for additional credit?**
   - Proposed to be repeatable for additional credit?
   - Maximum number of credit hours: ____
   - Will this course allow multiple registrations during the same semester?

i. **Current Course Description for Bulletin:**

   This course will examine the neurological principles utilized by each of the rehabilitation disciplines (PT, OT, SLP) in the context of current research data and determine whether these principles hold up to scientific examination. The format of this course will utilize formal lectures on current theories of neuroplasticity and class discussion on current literature in each of these areas. Case studies will be utilized to apply current theories to practical application within each of the listed disciplines.

   **Proposed Course Description for Bulletin:** ____

j. **Current Prerequisites, if any:**

   - Course in neuroanatomy. Admission to the Rehabilitation Sciences Doctoral Program or by consent of the instructor.

   **Proposed Prerequisites, if any:** ____

k. **Current Distance Learning (DL) Status:**
   - N/A
   - Already approved for DL*
   - Please Add*
   - Please Drop

   *If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box [X]) that the proposed changes do not affect DL delivery.

l. **Current Supplementary Teaching Component, if any:**

   - Community-Based Experience
   - Service Learning
   - Both

   **Proposed Supplementary Teaching Component:**

3. **Currently, is this course taught off campus?**
   - Proposed to be taught off campus?

4. **Are significant changes in content/teaching objectives of the course being proposed?**
   - If YES, explain and offer brief rationale:

5. **Course Relationship to Program(s).**

   a. **Are there other depts and/or pgms that could be affected by the proposed change?**
   - If YES, identify the depts. and/or pgms:

   b. **Will modifying this course result in a new requirement for ANY program?**
   - If YES, list the program(s) here:

6. **Information to be Placed on Syllabus.**

   a. **Check box if changed to 400G or 500.**
      - If changed to 400G- or 500-level course you must send in a syllabus and you must include the differentiation between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate

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6 You must also submit the Distance Learning Form in order for the course to be considered for DL delivery.

7 in order to change a program, a program change form must also be submitted.
REQUEST FOR COURSE CHANGE (MAJOR AND MINOR)

| students. (See SR 3.1.4.) |  |
REQUEST FOR COURSE CHANGE (MAJOR AND MINOR)

Signature Routing Log

General Information:

Course Prefix and Number: RHB 710

Proposal Contact Person Name: Richard Andreatta
Phone: 859-323-1100
Email: randr2@uky.edu

INSTRUCTIONS:
Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

<table>
<thead>
<tr>
<th>Reviewing Group</th>
<th>Date Approved</th>
<th>Contact Person (name/phone/email)</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHB PhD Division Director</td>
<td>3/2/2010</td>
<td>Carl Mattacola, Ph.D. / 859-323-1100 ext. 80860 / <a href="mailto:carlmat@uky.edu">carlmat@uky.edu</a></td>
<td>Carl Mattacola</td>
</tr>
<tr>
<td>Chair, Dept of Rehab Sci.</td>
<td>3/3/2010</td>
<td>Janice Kuperstein, Ph.D. / 859-323-1100 ext. 80593 / <a href="mailto:jkupe0@email.uky.edu">jkupe0@email.uky.edu</a></td>
<td>Janice Kuperstein</td>
</tr>
<tr>
<td>College of Health Sci.</td>
<td>3/14/2010</td>
<td>Sharon Stewart / 3-1100 / <a href="mailto:srstewa@email.uky.edu">srstewa@email.uky.edu</a></td>
<td>Sharon Stewart</td>
</tr>
</tbody>
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External-to-College Approvals:

<table>
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<tr>
<th>Council</th>
<th>Date Approved</th>
<th>Signature</th>
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<tr>
<td>Undergraduate Council</td>
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<td>Graduate Council</td>
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<tr>
<td>Health Care Colleges Council</td>
<td>4/20/10</td>
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<tr>
<td>Senate Council Approval</td>
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</table>

Comments:

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*Councils use this space to indicate approval of revisions made subsequent to that council’s approval, if deemed necessary by the revising council.*

Rev 8/09
RHB 710 - Neuroplasticity in Rehabilitation (3 hrs)
Fall 2010  Friday 2 – 5 pm  CTW 219

FACULTY
Richard D. Andreatta, Ph.D.  Patrick H. Kitzman Ph.D., PT
Office:  CTW 120-F  Office:  CTW 210-D
Phone:  859-323-1100 x 80523  Phone:  859-323-1100 x 80580
E-mail:  richard.andreatta@uky.edu  E-mail:  phkitz1@email.uky.edu

COURSE DESCRIPTION
Neuroplasticity is the manner in “which certain permanent functional transformations arise in particular systems of neurons as a result of appropriate stimuli or their combination, we shall call plasticity and the corresponding changes, plastic changes.” (Jerzy Konorski, 1948).

A great deal of the current treatment utilized by each of the rehabilitation disciplines is built on the theory that the central nervous system has the ability to change and reorganize in response to therapeutic intervention. As such, RHB 710 is a doctoral-level course designed to survey the processes of neural plasticity as seen (1) during normal development and the aging process, (2) as a reaction to injury, and (3) in response to rehabilitation interventions. In addition, the course will examine the neurological principles utilized by each of the rehabilitation disciplines in the context of current research data and determine whether these principles hold up to scientific examination. The format of this course will utilize formal lectures on current theories of neuroplasticity and class discussion on current literature in each topical areas.

COURSE OBJECTIVES
• Demonstrate the ability to comprehend and understand current theories of neuroplasticity as they apply to “normal” development and the aging process.
• Appreciate the history and genesis of the field of neuroplasticity.
• Discuss the current theories of neuroplasticity following injury to the central nervous system.
• Discuss the current research on the efficacy of rehabilitation methodology/practice (in each student’s specific field) on neuroplasticity and functional outcomes.
• Be able to relate and integrate your growing knowledge to discover weaknesses and gaps in the current research literature as it applies to the efficacy of rehabilitation methodology and practice relating to functional outcomes.

COURSE EXPECTATIONS
• Attendance is expected at each class during the semester.
• Students are expected to complete all reading assignments before class and be prepared for active participation in class discussions.
• All assignments must be completed and turned-in on time to receive a grade in the course.
• Collaborative teamwork with classmates is expected. Study groups are especially encouraged.
COURSE GRADING AND ASSIGNMENTS:
The course is worth a grand total of 400 points, accumulated throughout the semester through the completion of each of the following assignments/experiences:

1. **Exams:** Two major exams and a Final Exam will be given during the semester, each is worth 100 points. You will have the full class period to complete each exam. Please see weekly schedule for exact dates.

2. **Research Paper:** Each student will research a topic on the efficacy of rehabilitation methodology/practice (within their professional field) in the context of neuroplasticity. This research paper will be submitted to the instructors in manuscript form (minimum of 10 pgs. not including references, DS, using either AMA or APA style). The research paper is due the first Monday after the Thanksgiving holiday.

GRADING:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points per assessment</th>
<th>Final grade based on accumulated points</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>100</td>
<td>A = 360 - 400</td>
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<tr>
<td>Exam 2</td>
<td>100</td>
<td>B = 320 - 359</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
<td>C = 280 - 319</td>
</tr>
<tr>
<td>Research Paper</td>
<td>100</td>
<td>E = less than 279</td>
</tr>
</tbody>
</table>

COURSE POLICIES

- Attendance in class is mandatory.
- Specific course expectations will be provided in writing as needed and students will be informed of their progress during the semester.
- Discuss with either professor any problems you may have in meeting assignment deadlines or attendance as soon as possible.
- Make-up opportunities for missed class content is the responsibility of the student. The student is expected to obtain all notes and handouts if a class is missed. If an exam is missed (due to an emergency such as illness), the student must notify the instructors within 24 hours of the missed exam to reschedule a time that is mutually acceptable to all parties. In addition, a missed exam will require some form of verification in order to make up the test (i.e., note from personal physician or UHS note, etc).
- **Excused absences:** Acceptable reasons for excused absences are listed in Student Rights and Responsibilities, Section 5.2.4.2. Briefly, these include illness, death of someone in the student’s immediate family, University sponsored trips, major religious holidays, and other circumstances that the instructors find reasonable. Acceptance of an excused absence is up to the discretion of the course faculty.
- **Inclement weather:** In case of inclement weather or emergencies, class will be held unless the University administration cancels classes. Since many of you drive long distances to attend class, students should use their own judgment about weather to decide about coming to class.
- All students will engage in civil discourse and foster a community of sharing ideas and respect for all points of view.
- All cell phones should be set to vibrate to avoid class disruption.
- **Cheating and plagiarism:** Descriptions of what constitutes cheating and plagiarism are found in Students Rights and Responsibilities, Sections 6.3.1 and 6.3.2. Be aware that the minimum punishment for either of these offenses is an “E” in the course.
• **ADA Statement:** The University of Kentucky seeks to provide reasonable accommodations for all qualified individuals with disabilities. The RHB program will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to register with The Disability Resource Center in a timely manner to arrange for appropriate accommodations.
  - *If you have specific physical, psychological or learning disabilities and require accommodations, it is important to let The Disability Resource Center or your course instructor know early in the semester so that your learning needs may be appropriately met.*

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## Lecture Topics

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>Aug 27th</td>
<td>Introductions &amp; Review of neuroanatomy and neurophysiology</td>
<td>Kitzman</td>
</tr>
<tr>
<td>Sep 3rd</td>
<td>The lay of the land: Functional Organization of Perception &amp; Movement</td>
<td>Andreatta</td>
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<tr>
<td>Sep 10th</td>
<td>Neuroplasticity during development: Basic wiring and guidance processes in the embryonic nervous system.</td>
<td>Kitzman</td>
</tr>
<tr>
<td>Sep 17th</td>
<td>Getting up to speed: Review of “classic” neuroplasticity data in the mammal CNS – 1980 to 2000</td>
<td>Andreatta</td>
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<td>Sep 24th</td>
<td>Activity/Experience Dependent Plasticity</td>
<td>Andreatta</td>
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<tr>
<td>Oct 1st</td>
<td><strong>Exam 1</strong></td>
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<tr>
<td>Oct 8th</td>
<td>Neuroplasticity following Stroke</td>
<td>Kitzman</td>
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<td>Oct 15th</td>
<td>The Aging Brain</td>
<td>Harrison</td>
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<td>Oct 22nd</td>
<td>Neuroplasticity following Spinal Cord Injury</td>
<td>Kitzman</td>
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<tr>
<td>Oct 29th</td>
<td>Neuroplasticity following Traumatic Brain Injury</td>
<td>Livingston</td>
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<td>Nov 5th</td>
<td>Mechanisms and consequences of chronic pain: Syndromes &amp; neuroplastic consequences.</td>
<td>Kitzman</td>
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<td>Nov 12th</td>
<td><strong>Exam 2</strong></td>
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<tr>
<td>Nov 19th</td>
<td>Principles of Learning &amp; Memory</td>
<td>Andreatta</td>
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<tr>
<td>Nov 26th</td>
<td><strong>THANKSGIVING BREAK</strong></td>
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<tr>
<td>Dec 3rd</td>
<td>Brain Mapping &amp; Neuroimaging: The Grand Tour</td>
<td>Andreatta</td>
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<tr>
<td>Dec 10th</td>
<td>Challenging assumptions and rationales for current rehab treatment strategies: A Round Table Discussion</td>
<td>Andreatta, Kitzman &amp; invited faculty</td>
</tr>
</tbody>
</table>
ASSIGNED READINGS FOR RHB 710

(Subject to changes and updates in accordance with scientific discovery)

Dr. Kitzman Readings

Neuroanatomy & Neurophysiology review packet.


Dr. Andreatta Readings

Note: **Required** readings are to be accomplished **BEFORE** the day of lecture. **At your own pace** readings do not need to be done before the day of lecture (although it would be very helpful to you if they were), but still need to be completed before the exam.

**Required**


**At your own pace**


