Human Motor Learning  
PTH 516 FALL 2017

Course Description
The basic principles and theories of motor learning will be studied. The neurological outcome, i.e., neuroplasticity resulting from motor learning will be analyzed. Motor learning applications to future physical therapy skills and practice will be made. Prerequisites: Physical Therapy Program good standing.

Course Objectives
Upon successful completion of the course, students will be able to:
1. Explain principles and theories of motor learning.
2. Describe the neurological outcome of motor learning.
3. Apply principles of motor learning, including feedback and practice schedules, to clinical settings.
4. Critically evaluate research on motor learning related to physical therapy practice

Credits
2 credit hours

Required Materials
Motor Learning and Control From Theory to Practice
William H. Edwards
ISBN 10: 0-495-01080-4

Meeting Days/Times
Cohort B: T/R 9-10:50
Cohort A: T/R 12-1:50
CGS room 110/113

Lindsey Palmen, DPT
Office
Physical Therapy 115
Phone
262.951.3048
Email
lpalmen@carrollu.edu
Office Hours
Tuesday 11 – 12 (CGS)
Tuesday 2-4 (CGS)
Thursday 11-12 (CGS)

Physical Therapy Program Goals
The goals of the Carroll University Physical Therapy Program and its individuals are:
1) To educate students to be clinicians, trained for general practice, who provide best care. respectful of patient/client values, grounded in evidence-based practice and clinical reasoning, and compliant with federal, state, professional, and institutional regulations and guidelines.
2) To engage in ongoing peer reviewed scholarly activity including the scholarship of teaching, discovery, integration, and application using qualitative and quantitative methodologies.
3) To engage in ongoing clinical practice that integrates learning and scholarship into the delivery of physical therapy services.
4) To engage in ongoing service to Carroll University, the Physical Therapy and related professions, and Waukesha County and surrounding communities.

Neurological Track Mission Statement
The aim of the neurological track is to produce an entry-level generalist clinician who is competent in:
1) neuroanatomic detail and relationship to behavior and motor function
2) application of motor control and motor learning principles and
3) proficient in evaluation, examination and management of persons with impairment, functional limitation or disabilities due to neurological pathology or injury.
**Topics Covered**

<table>
<thead>
<tr>
<th>Classification of Motor Skills</th>
<th>Motivation and Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Motor Skills</td>
<td>Instruction and Demonstration</td>
</tr>
<tr>
<td>Stages of Motor Learning</td>
<td>Feedback</td>
</tr>
<tr>
<td>Individual Differences</td>
<td>Scheduling the Learning Experience</td>
</tr>
<tr>
<td>Memory</td>
<td>Neuroplasticity</td>
</tr>
</tbody>
</table>

**Evaluation of Performance**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
<td>1-4</td>
</tr>
<tr>
<td>Assignments</td>
<td>30%</td>
<td>1-4</td>
</tr>
<tr>
<td>Motor Learning Project</td>
<td>20%</td>
<td>1-4</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
<td>1-4</td>
</tr>
</tbody>
</table>

**Grading Scale**

- A 100-89.95
- B 89.94-79.95
- C 79.94-69.95
- D 69.94-60
- F 59 and below

Linkages between these course student learning outcomes/objectives and the Entry-level of Physical Therapy program goals can be reviewed within the document entitled “Curriculum Matrix” found on the LMS DPT program web page.

**Quizzes**

Quizzes will be given throughout the semester at the beginning of class to evaluate understanding of course materials and/or assess student’s preparation for class.

**Assignments**

The purpose of the assignments is to increase understanding of course material through in class hands-on activities and independent written application questions completed outside of class time. You are expected to come to class prepared with assigned articles and textbook chapters read in order to fully participate in activities. Written assignments should demonstrate graduate level writing with sources cited as needed. In class assignments are due by the end of the class. Homework is due by 8am and should be uploaded onto Canvas as one document. **LATE WORK WILL NOT BE ACCEPTED.** No makeup work accepted for unexcused absences.

**Motor Learning Project**

The purpose of this project is to practice applying the theories and components of motor learning over the course of the semester while you learn a novice motor skill. Details about the project are posted on Canvas.

**Final Exam**

A final exam will be given on the last day of class to assess learning and understanding of course material.

Further class policies regarding attendance, assignments, academic standards, and general conduct are in accord with those outlined in the Entry-Level Physical Therapy Student Handbook.

---

The Carroll University Academic Integrity Policy is located in your student handbook. Students are encouraged to familiarize themselves with it. If a student violates this policy in any way, the instructor(s) reserve the right to impose a sanction of failure on the assignment/assessment or failure in the course. If you have questions about appropriate citations, please ask your instructors.

**Accommodation for Disabilities:** Any requests for accommodation must be made through the Director of Services for Students with Disabilities at Carroll University. Appropriate accommodations will be made once notification has been received from the Director.

**Modifications to the syllabus:** The instructors and the University reserve the right to modify, amend, or change the syllabus (course requirements, grading policy, schedule, etc.) as the curriculum and/or program requires(s).
## Preparing for Class

Preparing for class is critical to your success. You are expected to come to class each day prepared to discuss the topic listed on the timetable below. Chapter outlines will be available on the course site as well as a study guide to help you know what sections to focus on. There will also be articles related to the course material posted on Canvas that should be read prior to class and ready to discuss. Specific preparation for each class is listed under the specified class date on Canvas.

<table>
<thead>
<tr>
<th>Date</th>
<th>Agenda</th>
<th>Readings</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 7</td>
<td>Motor Learning</td>
<td>Chapter 1</td>
<td>Homework 1 Due Sept 12</td>
</tr>
<tr>
<td></td>
<td>Intro to Motor Learning Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept 12</td>
<td>Motor Skills</td>
<td>Chapter 2</td>
<td>Homework 2 Due Sept 14</td>
</tr>
<tr>
<td>Sept 14</td>
<td>Learning Motor Skills</td>
<td>Chapter 5</td>
<td>Homework 3 Due Sept 19</td>
</tr>
<tr>
<td>Sept 19</td>
<td>Stages of Learning</td>
<td>Chapter 7</td>
<td>Homework 4 Due Sept 21</td>
</tr>
<tr>
<td>Sept 21</td>
<td>Individual Differences</td>
<td>Chapter 8</td>
<td>Homework 5 Due Sept 26</td>
</tr>
<tr>
<td>Sept 26</td>
<td>Memory</td>
<td></td>
<td>Homework 6 Due Sept 28</td>
</tr>
<tr>
<td>Sept 28</td>
<td>Motivation and Attention</td>
<td>Chapter 9</td>
<td>Homework 7 Due Oct 3</td>
</tr>
<tr>
<td>Oct 3</td>
<td>Instruction and Demonstration</td>
<td>Chapter 10</td>
<td>Homework 8 Due Oct 5</td>
</tr>
<tr>
<td>Oct 5</td>
<td>Feedback</td>
<td>Chapter 12</td>
<td>Homework 9 Due Oct 10</td>
</tr>
<tr>
<td>Oct 10 &amp; 12</td>
<td>Scheduling the Learning Experience</td>
<td>Chapter 11</td>
<td>Homework 10 Due Oct 19</td>
</tr>
<tr>
<td>Oct 19</td>
<td>Neuroplasticity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct 24</td>
<td>Motor Learning Project discussion</td>
<td></td>
<td>10/24: Motor Learning Project</td>
</tr>
<tr>
<td>Oct 26</td>
<td>Final Exam</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>