COURSE OUTLINE

Course Number  
PTA 205

Course Title  
Motor Development

Credits  
1

Hours: lecture/Lab/Other  
1/0/0

Pre-requisite  
PTA 210, PTA 211

Co-requisite:  
PTA 213

Implementation  
Spring 2021

Catalog description:

Introduces developmental milestones, lifespan motor development, motor control, motor learning, recovery of function, neuroplasticity, reflexes and reactions, adaptive equipment and various treatment approaches used to treat neurological impairments.

Required texts/other materials:

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Ed</th>
<th>Publisher</th>
<th>Date</th>
<th>ISBN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin S</td>
<td>Neurologic Intervention for PTA</td>
<td>4th</td>
<td>Elsevier/Saunders</td>
<td>2007</td>
<td>0-7216-0427-7</td>
</tr>
</tbody>
</table>

Revision date:  
Spring 2021

Course coordinator:  
Holly Kaiser, 609-570-3478, Kaiserh@mccc.edu

Information resources:

This course makes use of the required texts for the course and in addition, uses the resources of the Web.

Course Competencies/Goals:

Following the successful completion of this course with a grade of C+ or higher, the learner will be able to:

1. Recognize that there is interaction among multiple body systems in the performance of movement to accomplish specific functions.
2. Explain the changes that occur within the motor system across the lifespan and the variability of motor performance between individuals.
3. Discuss how genetic, congenital, and acquired disorders can impact the development of motor skills.
4. Discuss the physical therapy approaches to interventions with the patient with neuro-motor deficits.

Course-specific General Education Knowledge Goals and Core Skills.

MCCC Course Outline; Approved by the Curriculum Committee 12/6/07
General Education Knowledge Goals

Goal 1. Communication. Students will communicate effectively in both speech and writing.

Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Goal 5. Social Science. Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.

Goal 8. Diversity. Students will understand the importance of a global perspective and culturally diverse peoples.


MCCC Core Skills

Goal A. Written and Oral Communication in English. Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.

Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.

Goal C. Ethical Decision-Making. Students will recognize, analyze and assess ethical issues and situations.

Goal D. Information Literacy. Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.

Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations.

Goal G. Intra-Cultural and Inter-Cultural Responsibility. Students will demonstrate an awareness of the responsibilities of intelligent citizenship in a diverse and pluralistic society, and will demonstrate cultural, global, and environmental awareness.

Units of study in detail:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Goals:</th>
<th>Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1</td>
<td>Motor Control</td>
<td>C1.1, C1.2, C2.1, C3.1, C3.2, C3.3, C3.7, C4.1, P1, P2, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 2</td>
<td>Motor Learning, Recovery of Function, Neuroplasticity</td>
<td>C1.1, C1.3-1.5, C1.13, C1.14, C2.2, C2.3, C2.6, C3.1, C3.2, C3.4-3.6, C4.2, C4.3, C5.1, C6.1, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 3</td>
<td>Motor Development, Reflexes/Reactions</td>
<td>C1.1, C1.7-1.9, C2.3-2.5, C3.1, C3.2, C4.4, C4.5, C5.2, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 4</td>
<td>Adaptive Equipment</td>
<td>C1.10-1.12, C3.1, C3.7, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 5</td>
<td>Life Span Motor Development</td>
<td>C1.6, C1.15, C2.7-2.9, C3.1, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 6</td>
<td>Treatment Approaches</td>
<td>C1.16, C3.1, C3.7, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 7</td>
<td>Development and Aging</td>
<td>C3.1, P3, P4, P5</td>
</tr>
</tbody>
</table>

Learning Objectives have been identified in each of the following domains of learning: The student will be able to...

Cognitive:
The learner will be able to successfully:

C1. Knows specific facts (Remember)
   C1.1 Define motor control, motor learning and motor development
   C1.2 Describe the stages of motor control
   C1.3 Describe plasticity and discuss its relationship to recover of function
   C1.4 Describe Fitts & Posner’s three-stage theory of motor learning
   C1.5 Describe the differences between recovery and compensation
   C1.6 Define the life span concept of motor development
   C1.7 Identify important motor accomplishments for the first three years of life
   C1.8 Describe the acquisition and refinement of fundamental movement patterns during childhood
   C1.9 Describe the purpose of a reflex
C1.10 Identify factors considered when choosing adaptive equipment for the school-based population
C1.11 Compare and contrast adaptive equipment options for the school-based population
C1.12 Identify functional limitations, potential precautions and contraindication, and treatment options related to pediatric case studies
C1.13 Define neuroplasticity
C1.14 Define contextual interference
C1.15 List complications of bed rest
C1.16 Recall methods of treating a variety of neurological impairments

C2. Comprehends basic concepts and principles (Understand)
C2.1 Describe how factors related to the individual, the task, and the environment affect the organization and control of movement
C2.2 Summarize factors that have an impact on the structure of practice and describe their effect on performance versus learning
C2.3 Relate pathophysiology to the process of motor learning
C2.4 Understand the relationship between cognition and motivation to motor development
C2.5 Discriminate between normal and abnormal reflex responses from a child
C2.6 Gives an example of how contextual interference can be used to maximize rehabilitation outcomes
C2.7 Describe changes that occur with the aging process and outcome measurement tools appropriate for various patient populations
C2.8 Differentiate between symptoms of depression, delirium and dementia in older adults
C2.9 Differentiate between medically complex elders and frail elders

C3. Applies basic concepts and principles to new situations (Apply)
C3.1 Integrate knowledge from PTA 105, 107, 112, 201, 227, 210 and 211 into the new material in this PTA 205 course during, classroom case studies, quizzes and written exams
C3.2 Relates motor development, motor control and motor learning to each other
C3.3 Relate motor control to the clinical treatment of patients with movement pathology
C3.4 Define intrinsic versus extrinsic feedback, give examples of each, and discuss their importance in teaching motor skills
C3.5 Relate the concept of neuroplasticity to rehabilitation
C3.6 Determine which components of a treatment session can be adjusted to maximize motor learning and how adjustments can be made
C3.7 Correlate a given diagnosis with motor function, positioning needs, and treatment techniques to address the probable impairments and functional limitations

C4. Demonstrates the ability to analyze procedures to determine if organizational principles are being followed (Analyze)
C4.1 Compare and contrast the following theories of motor control: reflex, hierarchical, systems and ecological
C4.2 Analyze the similarities and differences between learning, performance and recovery of function
C4.3 Compare and contrast implicit and explicit forms of learning and give examples of each
C4.4 Differentiate between types of reflexes
C4.5 Observe a stretch reflex in multiple subjects and identify consistent characteristics

C5. Applies thinking skills when judging data and performance (Evaluate)
C5.1 Evaluate a treatment session from the first clinical affiliation course for its effectiveness in its practice structure
C5.2 Describe how developmental reflexes relate to developmental milestones and functional movement patterns
C6. Uses knowledge to create new methods necessary to gather data (Create)
   C6.1 Rearrange a treatment session from the first clinical affiliation course to maximize effectiveness of the practice structure

Psychomotor:
The learner will be able to successfully:

P1. Identify the four stages of motor control by watching videos of various movement tasks
P2. Create a treatment plan to address a physical therapy goal while utilizing the four stages of motor control
P3. Observe normal movements and describe it in terms of initiation, weight shift, direction, sequence, dissociation, and prime movers
P4. Research a provided topic and present findings to the class
P5. Complete a community service project

Affective:
The learner will be able to successfully:

A1. Demonstrate professional behaviors consistent with the values of the profession (Generic Abilities)
   A1.1 Utilize professional and respectful communication styles utilized in a professional setting
   A1.2 Demonstrate a commitment to learning by attending class consistently and showing up on time
   A1.3 Demonstrate a commitment to learning by preparing for each class
   A1.4 Demonstrate the ability to manage time and resources effectively by completing assignments in a timely manner
   A1.5 Demonstrate the ability to receive feedback in a non-defensive and receptive manner
   A1.6 Take responsibility for the outcomes of personal and professional actions
   A1.7 Exhibit appropriate and professional conduct consistent with the values of the profession
   A1.8 Identify sources of stress and implement effective coping behaviors.
   A1.9 Demonstrate a commitment to the physical therapy profession

Evaluation of student learning

<table>
<thead>
<tr>
<th>% of grade</th>
<th>Activity</th>
<th># within course</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Written Exams</td>
<td>3</td>
</tr>
<tr>
<td>NA</td>
<td>Quizzes</td>
<td>0</td>
</tr>
<tr>
<td>NA</td>
<td>Article Reviews</td>
<td>0</td>
</tr>
<tr>
<td>39</td>
<td>Assignments</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Presentation(s)</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Generic Abilities Assessment</td>
<td>Continuous</td>
</tr>
<tr>
<td>NA</td>
<td>Practical Exam</td>
<td>0</td>
</tr>
<tr>
<td>NA</td>
<td>Competency Tests</td>
<td>0</td>
</tr>
</tbody>
</table>

Academic Integrity Statement: There is a zero tolerance policy for plagiarism. Any work that violates the MCCC Academic Integrity policy will receive a grade of “0” and the learner will be reported to the College’s Academic Integrity Committee consistent with College policies. See http://mlink.mccc.edu/omb/OMB210.pdf