Course Title: Pathophysiology and Differential Diagnosis of Neuromuscular Conditions
Course Number: PHTH 722
Credit Hours: 2 credits
Semester: Summer 2017

COURSE INSTRUCTOR INFORMATION
Course Instructor: Chris Schieffer, PT, DPT
Email Address: Chris.Schieffer@usd.edu
Phone: (612) 709-3123
Virtual Office Hours: By appointment made via email

COURSE DESCRIPTION
Graduate Catalog Description/Expanded Course Description
This course examines medical/systemic conditions whose signs and/or symptoms present as neuromuscular systems problems. Students will describe common clinical manifestations that occur with common neuromuscular conditions. Students will also describe factors that influence the prognosis for patients and clients with neuromuscular conditions. Additional emphasis will be placed on identifying signs and symptoms of common neuromuscular conditions that should prompt referral for further consultation or diagnostic testing. The course provides an in-depth overview of related pathophysiology and the mechanisms of common neuromuscular diseases and disorders.

Course Teaching Methodology/Instruction Methods
As this is an online course, we will not be meeting face-to-face; the teaching methodology/instructional methods will be accomplished through the following requirements: completion of assigned readings, reading and/or viewing the supplemental materials, participating in on-line discussions, completing written assignments, and completing open-note exams.

REQUIRED TEXTS

Other Course Resources

The following is a link to the online resource guide handbook available to USD Physical Therapy (USDPT) students. You may find it helpful throughout the curriculum and in clinical practice. http://libguides.usd.edu/pt
**STUDENT LEARNING OUTCOMES**

*Upon completion of this course, students will:*

<table>
<thead>
<tr>
<th>Activity</th>
<th>APTA’s Preferred Curricular Model for the tDPT Program</th>
<th>APTA Competencies of the tDPT Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply knowledge of anatomical structure and function to explain the signs and symptoms of common neuromuscular conditions and injuries.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Describe the pathological alterations in structure and function of the neuromuscular system that occurs with common neuromuscular conditions.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Identify early signs and symptoms of common neuromuscular conditions that should prompt referral for further consultation or diagnostic testing.</td>
<td>1, 18</td>
<td>8, 9, 10</td>
</tr>
<tr>
<td>Describe the diagnostic testing and criteria for diagnosis of common neuromuscular conditions.</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Describe factors that influence the prognosis for patients and clients with neuromuscular conditions.</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>Identify appropriate strategies for primary and secondary prevention as they relate to neuromuscular conditions.</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>Identify common clinical manifestations and complications associated with common neuromuscular conditions.</td>
<td>1, 18</td>
<td>1, 9</td>
</tr>
<tr>
<td>Identify valid, reliable and responsive outcome measures that can be used to assess and guide physical therapy management of neuromuscular conditions.</td>
<td>9, 19</td>
<td>5, 9, 15</td>
</tr>
<tr>
<td>Identify evidence based physical therapy interventions for neuromuscular conditions.</td>
<td>9, 21</td>
<td>5, 14</td>
</tr>
<tr>
<td>Identify any special considerations for exercise prescription that apply to individuals with neuromuscular conditions</td>
<td>21, 27</td>
<td>13, 14</td>
</tr>
<tr>
<td>Compare traditional and contemporary interventions for neuromuscular conditions.</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>Describe the impact of technological advances in the medical, surgical and physical therapy management of neuromuscular conditions.</td>
<td>9, 21</td>
<td>5, 14</td>
</tr>
</tbody>
</table>

The identified student learning outcomes (above) are related to the following modules of the **APTA’s Preferred Curricular Model for the tDPT Program and Learner** (key):

- #1 Tissue Biology and Pathology in the Neuromuscular System
- #9 Evidence-Based Clinical Decision-Making
- #18 Systems Review
- #19 Tests and Measures
- #20 Evidenced-Based Prognosis, Prevention and Plan of Care
- #21 Coordination and Provision of Evidenced-Based Interventions Across the Lifespan: Neuromuscular System
- #26 Use and Interpretation of Outcome Measures
- #27 Risk Reduction

The following student learning outcomes (above) are related to the following **APTA Competencies of the tDPT Graduate** (key):

1. Foundational and Clinical Sciences
   - Use knowledge in the foundational and clinical sciences related to structure, movement dysfunction, response to injury and disease and promotion of health and wellness to enhance physical therapy outcomes.
5. Critical Inquiry and Clinical Decision Making
   • Demonstrate clinical decision making skills, including clinical reasoning, clinical judgment, and reflective practice.
   • Critically evaluate published studies related to physical therapy and demonstrate the ability to apply knowledge from these studies in a scientific manner and to appropriate populations.
   • Secure and critically evaluate information in a timely manner related to new and established techniques and technology, legislation, policy, and environments related to physical therapy practice.

8. Screening
   • Identify health risks when patients/clients need further examination or consultation by a physical therapist or when they need to be referred to other health professionals or community resources.

9. Examination
   • Examine patients/clients by obtaining a history, by performing systems reviews, and by selecting and administering valid and reliable age-related tests and measures.

10. Evaluation
    • Synthesize data from the examination and analyze data to make clinical judgments regarding patient/client management.

11. Diagnosis
    • Determine a diagnosis that guides patient/client management.

12. Prognosis
    • Determine patient/client prognosis.

13. Plan of Care
    • Monitor and adjust the plan of care in response to patient/client status.

14. Intervention
    • Provide physical therapy interventions to achieve patient/client goals and outcomes.

15. Outcomes Assessment
    • Implement a method to assess individual and collective outcomes of patients/clients using valid and reliable measures that take into account the setting in which patients/clients are receiving services, the variables of cultural competence, and the effect of societal factors such as reimbursement.

COURSE REQUIREMENTS:

Exams:
Three (3) each worth 20% of the total course grade (total 60%)
Three content exams will be given throughout the course. Each of the exams will be administered through D2L. It is expected that each student complete the exams independently; however, use of written resources such as course notes, textbooks, articles, etc. will be permitted. It is also expected that the exams be completed within the time frame specified. The dates and times the exams are due to be completed are posted on the course schedule document.

Technological Advancements in Management of Neuromuscular Conditions Assignment:
Worth 13% of the total course grade
Complete the written evidence-based assignment focusing on the technological advancements in the
medical, surgical and/or physical therapy management of a specific disease/pathology. You must declare your topic by Sunday, June 25, 2017, 11:59 pm CST, on the discussion board under the title “Written Assignment Topics”. A list of acceptable topics will be provided under course content. Addressing topics not listed may be possible with the permission of the course director. Duplicates will not be allowed; please work out any ownership issues with your cohort through the discussion board. This paper should consider recent advancements in condition management that may be new to practice or areas of ongoing research. Your paper should focus on one specific technological advancement and should attempt to answer the following questions: What is the purpose of this technology? How does it work? What is the evidence supporting implementation of this technology? How does or will this technology impact on physical therapy management of individuals with this disease/pathology? How does or will this technology impact on physical therapy management of this condition?

This assignment needs to be typewritten in a font size 11-12, and must be double spaced. Appropriate length would be between two and four pages but this will vary depending upon the topic. Reference formatting must be done to comply with AMA. Please consider this scientific writing, and ensure that there are no grammatical errors. An example has been provided to you under the content section titled “Assignment Examples”. You will need to upload the assignment into the D2L Drop Box by July 23, 2017, 11:59 pm CST.

**Discussion Board Posts:**
**9 Worth 3% each of the total course grade each (total 27%)**
As this is a “student-centered/adult learner class,” the success of this course is dependent upon the participation of each individual enrolled in the course. Each student is expected to contribute to class discussions and activities. Class participation in the discussion board is worth **27% of your overall course grade**. Each student will be expected to read weekly assignments that may include the following: lecture notes, journal articles assigned by your instructor and peers, or other media. Each week your instructor will post discussion questions relevant to that week’s topics. Students are expected to answer at least one of the discussion questions and respond to at least two classmates’ posts in a thoughtful manner. In addition, each student is expected to read **ALL** of the posts for that week. There will be **9 weeks of discussion boards, plus one introduction post**. Unless noted otherwise, each student should make initial posts before Thursday at 11:59 PM CT. Read all other postings and meaningfully respond to at least 2 postings of fellow classmates by Sunday at 11:59 PM CT of the same week. All posts, whether the original post or posting to a classmate’s post, should be creative, thought provoking, and appropriately referenced. Do not use postings such as “ditto”, “good”, or “nice job.” Reference articles in AMA format, as appropriate. Each student’s weekly discussion board postings and responses, unless noted otherwise by the Course Director, will be graded utilizing the rubric in Appendix A.

**Summary of Evaluative Items**

<table>
<thead>
<tr>
<th>Evaluative Item</th>
<th>Due Date</th>
<th>%Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECIFIC ASSIGNMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 1</td>
<td>May 21</td>
<td>3%</td>
</tr>
<tr>
<td>Week 2</td>
<td>May 28</td>
<td>3%</td>
</tr>
<tr>
<td>Week 3</td>
<td>June 4</td>
<td>3%</td>
</tr>
<tr>
<td>Week 4</td>
<td>June 11</td>
<td>3%</td>
</tr>
<tr>
<td><strong>EXAMS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exam I</td>
<td>June 18</td>
<td>20%</td>
</tr>
<tr>
<td>Week 6</td>
<td>June 25</td>
<td>3%</td>
</tr>
</tbody>
</table>
Week 7  |  July 2  |  3%  
--- | --- | ---  
Exam II  |  July 9  |  20%  
Week 9  |  July 16  |  3%  
Technology Assignment  |  July 23  |  13%  
Week 10  |  July 23  |  3%  
Week 11  |  July 30  |  3%  
Exam III  |  August 4  |  20%  

| Total Course Grade | 100% |

**Student Assessment**

| A  | B  | C  | D  | E  | F  |
| --- | --- | --- | --- | --- | ---  
| 100.00-90.00 % | 89.99-80.00 % | 79.99-70.00 % | 69.99-60.00 % | 59.99-50.00 % |  |
| Points = | Points = | Points = | Points = | Points = |  |

**COURSE REQUIREMENTS**

**Performance Standards**
The student is referred to the USDPT Student Handbook for all academic performance expectations and professional behavior requirements. Each student should complete all reading and writing assignments. Each assignment should be turned in by the due date and time. Late submissions will result in a 10% reduction in the assignment grade for each in-session academic calendar day the assignment is late, unless prior approval is given by the instructor.

**FEEDBACK**

Within the discussion board an area has been designated to post questions and comments about the course and/or content. Students should submit their discussion posts directly to the discussion board for discussion purposes. All individual assignments should be submitted to the instructors via the Dropbox option in D2L. Feedback will be provided via the feedback portion of the Dropbox, unless otherwise noted. The examinations will be submitted through the Quizzes Function on D2L. It is my goal to have all items graded within 2 weeks of due date. Grades for each graded item will be posted on D2L under the Grades function.

**POLICIES**

**Professional Behavior**

This syllabus serves as contract between the student and instructor but may be modified if deemed appropriate by the instructor. The student is referred to the Department of Physical Therapy Student Handbook, Section 2-IIC, for Physical Therapy Program expectations regarding Professional Behavior Requirements.

Students, when posting questions or statements on D2L for discussion purposes, please show courtesy and professionalism to all those in the class. When discussing a patient case (i.e. using the case as an exemplar to a point you are trying to make), please maintain patient confidentiality. Finally, please submit discussions on time, type in complete sentences, utilize proper AMA formatting (when appropriate), use appropriate grammar, and follow the discussion board guidelines.
Communication
This is an on-line program and therefore communication with the instructors is vitally important. I will do my best to respond to emails within 24-hours on business days and within 48-hours on weekends. We have the same expectation of the students. Please send all email correspondence to: Chris.Schieffer@usd.edu and not through the D2L email function.

Attendance and Make-up Policy
The student is expected to view and complete all readings/assignments. As this is an on-line environment, you are responsible for your progress in this course. If there are any conflicts with dates and times for assignments, please contact the course instructor. The student is referred to the Department of Physical Therapy Student Handbook Section II-A for further information regarding Attendance and Course of Study Preparedness.

Freedom in Learning
Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.

ADA Policy
Any student who feels s/he may need academic accommodations or access accommodations based on the impact of a documented disability should contact and register with Disability Services during the first week of class. Disability Services is the official office to assist students through the process of disability verification and coordination of appropriate and reasonable accommodations. Students currently registered with Disability Services must obtain a new accommodation memo each semester. For information contact: Ernetta L. Fox, Director; Disability Services; Room 119 Service Center; (605) 677-6389; dservices@usd.edu.

Inclusiveness & Diversity
The University Senate approves and endorses the following statement: “The University of South Dakota strives to foster a globally inclusive learning environment where opportunities are provided for diversity to be recognized and respected.”

The University of South Dakota, School of Health Sciences is committed to an environment of inclusiveness in classroom and clinical settings that honors the richness of diverse perspectives and inter-professional practice through valuing diverse traditions, heritages, and experiences.

Plagiarism and Academic Dishonesty
Plagiarism is defined as using the words and/or ideas of another and representing them to be your own, without proper credit to the author or source. Whether intentional or unintentional, plagiarism will result, at a minimum, in a grade of zero for that assignment.

Academic dishonesty is defined as, but not limited to the following: copying a classmate’s work, using crib notes during a test, stealing or conveying examination questions, informing classmates of information on practical examination, maintaining library materials so that classmates cannot utilize the materials, falsely representing clinical cases, turning in written assignments that are not authentic,
not referencing sources used in assignments (including websites), claiming work that you did not do, or fabrication of any sort.

The University of South Dakota Board of Regents has established a policy for plagiarism that is firmly upheld by the USD Physical Therapy Program. No credit can be given for a dishonest assignment. At the discretion of the instructor, a student caught engaging in any form of academic dishonesty, including plagiarism, may be:

- Given a zero for that assignment.
- Allowed to rewrite and resubmit the assignment for credit.
- Assigned a reduced grade for the course.
- Dropped from the course.
- Failed in the course.

The USD Physical Therapy Program reserve the right to expel a student, based upon the severity of the academic transgression. Students are referred to the Department of Physical Therapy Student Handbook, Section 2-V, for Physical Therapy Program expectations regarding Academic Integrity.

ADDITIONAL INFORMATION

When I have a question, who should I contact?
- Course questions: Dr. Schieffer via email -- Chris.Schieffer@usd.edu
- E-mail/Login/Password Issues: USD Help Desk (605) 677-5028 or helpdesk@usd.edu
- D2L Issues: USD Help Desk (605) 677-5028 or helpdesk@usd.edu
- Computer Issues: USD Help Desk (605) 677-5028 or helpdesk@usd.edu
- To answer many of your questions, please review the “On-Line Orientation Guide” @ http://www.usd.edu/continuing-and-distance-education/upload/Online-Orientation-Guide.pdf
<table>
<thead>
<tr>
<th>POINTS</th>
<th>Technology Chosen</th>
<th>Purpose of Technology</th>
<th>Explanation of Technology</th>
<th>Evidence</th>
<th>Impact on Patient</th>
<th>Impact on Physical Therapy</th>
<th>Organization</th>
<th>AMA Referencing</th>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Technology selected is clearly stated and relevance to the disease / condition is clear.</td>
<td>Clearly identifies the purpose of the technology.</td>
<td>Clearly describes technology and how it works in a way that is understandable to the audience.</td>
<td>Clearly examines current research evidence regarding the use of this technology with this population.</td>
<td>Clearly explores and identifies the current and potential impact of this technology on patients with the chosen disease process.</td>
<td>Clearly explores and identifies the current and potential impact of this technology on the physical therapy management of patients with the chosen disease process.</td>
<td>Paper is well organized, double spaced with font size 11-12. No grammar or spelling errors are present.</td>
<td>Utilizes appropriate AMA referencing and formatting throughout the paper and reference list</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Technology selected is clearly stated, but relevance to the disease / condition is not clear.</td>
<td>Purpose identified with minimal deficits.</td>
<td>Describes technology and how it works with minimal deficits.</td>
<td>Examines current research evidence regarding the use of this technology with this population minimal deficits.</td>
<td>Minimal deficits in the exploration and identification of the current and potential impact of this technology on patients with the chosen disease process.</td>
<td>Minimal deficits in the exploration and identification of the current and potential impact of this technology on the physical therapy management of patients with the chosen disease process.</td>
<td>Minimal deficits in organization of paper, grammar and spelling errors are minimal.</td>
<td>Minimal deficits in AMA referencing and formatting throughout the paper and reference list</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Technology selection is vague OR Technology selected is not relevant to the disease / condition.</td>
<td>Purpose identified with moderate deficits.</td>
<td>Describes technology and how it works with moderate deficits.</td>
<td>Examines current research evidence regarding the use of this technology with this population moderate deficits.</td>
<td>Moderate deficits in the exploration and identification of the current and potential impact of this technology on patients with the chosen disease process.</td>
<td>Moderate deficits in the exploration and identification of the current and potential impact of this technology on the physical therapy management of patients with the chosen disease process.</td>
<td>Moderate deficits in organization of paper, grammar and spelling errors are moderate.</td>
<td>Moderate deficits in AMA referencing and formatting throughout the paper and reference list</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Technology selection is vague AND not relevant to the disease or condition.</td>
<td>Purpose identified with substantial deficits or not identified.</td>
<td>Describes technology and how it works with substantial deficits and/or does not give consideration to comprehension of the audience.</td>
<td>Examines current research evidence regarding the use of this technology with this population substantial deficits.</td>
<td>Substantial deficits in the exploration and identification of the current and potential impact of this technology on patients with the chosen disease process.</td>
<td>Substantial deficits in the exploration and identification of the current and potential impact of this technology on the physical therapy management of patients with the chosen disease process.</td>
<td>Substantial deficits in organization of paper, grammar and spelling errors are substantial.</td>
<td>Substantial deficits in AMA referencing and formatting throughout the paper and reference list</td>
<td></td>
</tr>
</tbody>
</table>

**Possible Points = 50**
<table>
<thead>
<tr>
<th>INITIAL POSTINGS</th>
<th>Level 5</th>
<th>Level 4</th>
<th>Level 3</th>
<th>Level 2</th>
<th>Level 1</th>
<th>Level 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance of initial postings</td>
<td>5 points Provides complete substantive posting to both questions</td>
<td>4 points Provides postings to both questions, but minor improvements could be made to breadth and/or depth of one of the postings</td>
<td>3 points Provides postings to both questions, but minor improvements could be made to breadth and/or depth of both of the postings or provides substantive posting to</td>
<td>2 points Provides posting to one of the questions, but minor improvements could be made to breadth and/or depth</td>
<td>1 point Answers a question or questions, but major improvements to breadth and/or depth needed</td>
<td>0 points Does not provide substantive posting</td>
</tr>
<tr>
<td>SUBSTANCE OF RESPONSE</td>
<td>Level 5</td>
<td>Level 4</td>
<td>Level 3</td>
<td>Level 2</td>
<td>Level 1</td>
<td>Level 0</td>
</tr>
<tr>
<td>Substances of response to peer postings</td>
<td>5 points Provides complete substantive response to two peer postings</td>
<td>4 points Provides responses to two peer postings, but minor improvements could be made to breadth and/or depth of one of the responses</td>
<td>3 points Provides responses to two peer postings, but minor improvements could be made to breadth and/or depth of both of the responses or provides substantive response</td>
<td>2 points Provides response to one of the peer postings, but minor improvements could be made to breadth and/or depth of the response</td>
<td>1 point Provides a response to at least one peer posting, but major improvements to breadth and/or depth of the response needed</td>
<td>0 points Does not provide a substantive response</td>
</tr>
<tr>
<td>READING OF PEER POSTINGS</td>
<td>Level 5</td>
<td>Level 4</td>
<td>Level 3</td>
<td>Level 2</td>
<td>Level 1</td>
<td>Level 0</td>
</tr>
<tr>
<td>Reading of peer postings and responses</td>
<td>5 points Read 100% of peer postings and responses</td>
<td>4 points Read 80% of peer postings and responses</td>
<td>3 points Read 60% of peer postings and responses</td>
<td>2 points Read 40% of peer postings and responses</td>
<td>1 point Read 1 - 24% of peer postings and responses</td>
<td>0 points Did not read any peer postings and responses</td>
</tr>
</tbody>
</table>