Competency Statement	Sample Learning Objectives	Associated Learning Activities	Associated Assessment Strategies
Domain IV: Movement Science			
1. Apply motor control theories to predict the nature and cause of impairments, both primary/direct and secondary/indirect, that may limit a patient's movement and function.	Compare and contrast various motor control theories used to examine a person's movement and function.	In small groups, have students view videos (patient cases, YouTube videos) of individuals with varying medical diagnoses performing movements (e.g. transfer, gait, sit to stand). Small group discussion describing the individual's movement in the context of pre-selected motor control theories, e.g., influence of seat height and presence of arm rests from ecological theory.	Case-based multiple-choice or short answer exam questions; or, release a key for student self-assessment.
	Analyze how underlying biomechanical and neural factors relate to the patient's difficulty in performing task-activities relevant to the patient/client's participation roles and responsibilities	Based on a patient case, students must produce a problem list at all levels of the ICF model, then write a comprehensive and coherent evaluation summary (i.e. assessment statement)	Pass/Fail assignment where the goal is to provide feedback on student documentation. Problem list should detail at least one (1) BSF-level impairment, one (1) activity limitation, and one (1) participation restriction. The evaluation summary should specify how the BSF-level impairments relate to and

	Demonstrate safe and effective tests and measures that examine underlying factors of a patient/client's movement problem(s)	Lab instruction and practice. Students are provided time to review tests and measures that have been introduced in class and practice methods of examination (over the course of the semester). At mid-term (or later), students are expected to demonstrate competency with testing procedures.	explain particular movement problems. Rubric may comprise the following; position of the practitioner, position of the patient/client (simulated student), clarity and accuracy of instructions, description of positive/negative findings, clarity and accuracy of interpretation of findings

2. Perform systematic movement and task analyses guided by and inclusive of:
• Theoretical frameworks (e.g., Hedman et. al. movement continuum, Quinn et. al's movement analysis, Gentile's taxonomy)
• Contextual factors
  ○ Environmental factors
  ○ Personal factors (e.g., neuromuscular, sensory-perceptual, cognitive, cardiovascular)
• Knowledge and implications of the pathological effects of central and peripheral nervous system disease and injury.
	Interpret the findings from a neurologic screening examination to:
	- list potential location(s) of lesion(s)
	- develop a differential diagnosis list
		Students working individually or in small groups are provided a patient case with key information from the patient history (mode/speed of onset and pattern of progression of symptoms) as well as test and measure results performed in a neurologic screening examination (e.g., mental status, cranial nerve assessment, reflexes, motor function, etc.). Students will list potential location(s) of lesions along the neuroaxis to explain each presenting sign and/or symptom. Based on case presentation, students describe the most likely location and develop a list of medical diagnoses.	Summative assessment(s) can be used as the students complete the worksheet. Polling questions or "clickers" can be used to informally assess student learning. An answer key can be disseminated to students for a self-review, during class. Following the self-review, an instructor-led discussion may be used to summarize key points related to clinical neuroanatomy.

	Hypothesize potential components of movement (body structure function / impairment) that are contributing to movement dysfunction.	In small groups, students view videos (patient cases, YouTube videos) of individuals with varying diagnoses performing tasks (e.g. transfer, gait, sit to stand). Using the Motor Control Framework, students write out	Written component of practical examination, specific questions (oral or written) to hypothesize potential impairments contributing to the individual's movement problem.

		the movement problem throughout the stages of movement, hypothesize the clinical components, primary / secondary underlying factors contributing to the movement problem. Come back together as a larger group to compare / contrast in a faculty facilitated discussion.	
3. Design, implement, and modify evidence-based interventions that incorporate contemporary: • Motor control theories, • Motor learning principles (e.g., motivation, attention, types and schedules of practice, feedback), • Principles of neuroplasticity, and • Exercise physiology principles	Summarize evidence for the efficacy of an intervention in a specific patient population.	Students complete a PICOT question assignment (intervention for specific patient case, with articulated patient goals.). and the assignment requires the student to provide treatment rationale using the evidence (i.e., methodological quality of the supporting literature/article and applicability to the patient case). Within assignment, students must also write a patient centered goal that reflects the outcomes of the interventional study and how this aligns with the patient's stated goal., Community based volunteer series (if not available, faculty	Rubric with the following criteria: patient's goal, one (1) activity-level limitation and outcome measure, one (1) BSF-level impairment and outcome measure, patient-centered goal, appropriate PICOT question, brief description of intervention, appraisal of the study quality, appraisal of the applicability to the patient case Rubric with specific expectation of the paper. Can follow up with

		role play with a patient case): This can be set up in multiple session / day series. After performing an examination with an individual with a neurological diagnosis (including understanding patient-centered goals), students/small groups of students will write a brief paper outlining a plan of care for the patient case, including summary of current literature supporting the choices of interventions in relationship to patient centered goals.	a small group discussion asking follow-up and clarification questions in a faculty led discussion.
	Select appropriate intervention based on contemporary knowledge of motor learning principles.	One-on-one discussion with instructor, where students are expected to develop clinical reasoning and oral communication skills in a 20-minute discussion with instructor. Each student discusses a treatment plan, based on patient case, providing rationale for relatedness to factors underlying movement problems and patient goals. Student must also provide description of and rationale for progression and	Rubric: student must clearly and accurately articulate the following; underlying factor(s) to movement problem(s), outcome measure(s) for relevant underlying factor(s) and task activity, description of intervention, equipment used for safety and efficacy, description of and rationale for progression and regression of intervention, evidence supporting intervention, instructions to the patient, and demonstrate

		regression of intervention(s). As an alternative to a separate assessment, this could form the basis for a lab practical exam. (Continuation of series above): Community based volunteer series (if not available, faculty role play with a patient case): This can be set up in multiple session / day series. After performing an examination with an individual with a neurological diagnosis (including understanding patient-centered goals), students will write a paper outlining a plan of care for the patient case, including summary of current literature supporting the choices of interventions in relationship to patient centered goals. Specific section outlining how they will integrate motor learning principles into intervention plan of care.	professional interaction using professional language Rubric with specific expectation of the paper. Can follow up with a small group discussion asking follow-up and clarification questions in a faculty led discussion.

	Demonstrate safe implementation of evidence-based interventions that are consistent with the treatment goals and the patient/client's personal and environmental capacities and constraints.	Patient role plays / simulations (e.g. faculty role plays, student pairs for role plays) of patient cases in student labs, integrating foundational skills into more complex interventions. This could focus on specific interventions, such as balance or gait training.	Immediate feedback provided for students by the patient role player. Discussion to address identifying "success " targets, intervention progression or modification when target is unmet. No formal assessment required.
	Evaluate the outcome of a comprehensive plan of care (inclusve of educational interventions).	(Continuation of series above): Community based volunteer series (if not available, faculty role play with a patient case): This can be set up in multiple session / day series. Implementation of plan of care over one or multiple sessions with community volunteer or role player.	Documentation of interventions session including all aspects of SOAP note. Feedback provided and rubric of specific expectations provided.
		Continuation of series above): Community based volunteer series (if not available, faculty role play with a patient case): after the intervention sessions noted above, students are	Documentation of interventions session including all aspects of SOAP note. Rubric includes specific expectations for evaluation of the outcome of the

		provided written outcome data. Students will reflect on intervention effectiveness based on these results. Small group discussion or paper discussing the patient outcomes and consideration of modifications to the plan of care.	session in the assessment section of the SOAP note, as well as the plan with noted modifications or changes to the plan of care.