



SANTA ANA COLLEGE

COURSE OUTLINE OF RECORD

CATALOG ENTRY

Discipline	Occupational Studies
Course Number	304
Course Title	Movement Theory & Analysis
Former Title	
Units	3
Lecture Hours	54
Scheduled Laboratory Hours	None
Arranged Laboratory Hours (TBA)	None
Total Semester Contact Hours	54

COURSE IDENTIFICATION NUMBER(S) (C-ID)

REQUISITES

Prerequisite

Limitation on Enrollment: Student must be admitted to the Occupational Studies program.

Corequisite

None

Recommended Preparation

None

CATALOG DESCRIPTION

Movement is a significant aspect of occupational performance. This course will focus on current theories of motor control and motor learning with an emphasis of how these theories can be applied to provide evidence-based practice to those with motor dysfunction.

Classification Code	Y
Transfer Code	C-Not transferable
SAM Priority Code	B - Advance Occupational
Repeatability	NR - Non-Repeatable
TOPS Code	1218.00 - Occupational Therapy Technology
Topics Course	No
Open Entry/Exit	No
Grading Options	Letter Grade or P/NP

Department Chair Approval Date: 12/05/16 by:Monica Zarske

Divison Chair Approval Date: 12/05/16 by:Monica Zarske

Curriculum and Instruction Council Chair Approval Date: 12/05/2016 by: Brian Sos
Last Revision Date:

COURSE OBJECTIVES

1. Compare and contrast theories of motor control including hierarchical, systems, reflex, motor planning, and ecological.
2. Investigate the physiology of motor control and the neurologic constraints on motor control.
3. Validate the importance theory in clinical interventions.
4. Analyze theories related to motor learning.
5. Describe the physiological basis of motor learning and recovery of function.
6. Examine development, contributing factors, and clinical management of postural control.
7. Analyze the role of motor control in functional mobility.
8. Investigate fine motor skills in terms of motor control, changes of fine motor function across lifespan, and clinical management of fine motor function.

COURSE CONTENT

(Include major topics of the course, time required, and what the student is expected to learn.)

I. Motor Control

A. Systems involved with motor control

1. Motor systems
2. Sensory systems
3. Cognition

B. Physiology of motor control

1. Motor systems
 - a. Motor cortex
 - b. Cerebellum
 - c. Basal ganglia
 - d. Brainstem
2. Sensory systems
 - a. Somatosensory
 - b. Visual
 - c. Vestibular

C. Motor control theory

1. Reflex theory
 - a. Hierarchical theory
 - b. Systems theory
 - c. Ecological theory

II. Motor Learning and Recovery of Function

- A. Define motor learning
- B. Theories on motor learning
 - 1. Schmidt's Schema Theory
 - 2. Ecological Theory
 - 3. Fitts and Posner Three Stage Model
 - 4. Gentile's Two Stage Model
 - 5. Bernstein's Three Stage Approach
- C. Impairments of motor learning
 - 1. Motor systems
 - 2. Sensory systems
- D. Neuroplasticity and learning
 - 1. Procedural learning
 - 2. Declarative learning
 - 3. Complex motor learning
- E. Recovery of function
 - 1. Axonal damage and regeneration (Peripheral and Central Nervous Systems)
 - 2. Central Nervous System response to injury
 - 3. Role of cortical maps
 - 4. Enhancing neuroplasticity
- F. Clinical management of motor control impairment
 - 1. Models of clinical practice
 - a. Evidence-based practice
 - 2. Motor systems
 - 3. Sensory systems
 - 4. Cognitive systems
 - 5. Task oriented approaches

III - Postural Control

- A. Development of Postural Control
 - 1. Motor milestones
 - 2. Theories
 - 3. Systems Perspective
 - a. Emergence of milestones
 - b. Transitions to independent control
 - c. Cognitive systems in postural development
- B. Normal Postural Control

1. Motor systems
2. Sensory systems
3. Cognitive systems

C. Problems in postural control

1. Motor, and sensory systems
 - a. Steady-state balance
 - b. Reactive balance
 - c. Anticipatory balance
2. Cognitive systems
 - a. Postural stability
 - b. Dual-task interference

D. Effect of Aging on Postural Control

1. Fall risks
2. Primary and secondary factors
3. Changes in motor, sensory, and cognitive systems with aging

E. Clinical management of disorders of postural control

1. Rehabilitation for balance
 - a. Safety
 - b. Participation
 - c. Strategies for balance
 - d. Task-oriented approach

IV. Mobility

A. History of OT in community-based mental health

B. Theory

C. Settings for community mental health

1. Partial hospitalization
2. Home health
3. Peer run programs
4. Supported education
5. Veterans support services
6. Transitional housing

D. Assertive Community Treatment

1. Supported employment
2. Supported housing

E. Funding

F. Substance use disorders

- 1. Impact on occupations
- 2. Community-based services
- G. Forensic practice within the community
 - 1. Community reintegration
 - 2. Public safety
- H. Evidence-based practices
- I. Role of the OT/OTA

V. Fine motor skills

- A. Issues related to accessibility
 - 1. Home
 - 2. Community
 - 3. Mobility
- B. Integration post illness/injury
 - 1. Work
 - 2. Leisure
- C. Wounded warrior project
- D. Independent living movement
 - 1. History and philosophy
 - 2. Independent living programs/centers – core services
 - 3. Role of OT/OTA in independent living centers
- E. Technology
 - 1. Universal design
 - 2. Mobility
 - 3. Communication
 - 4. Computer access
 - 5. Home modification

COURSE MATERIALS

Required texts and/or materials.(Include price and date of publication.)

Required:Shumway-Cook, A., & Woollacott, M.. *Motor Control: Translating Research into Clinical Practice*, 5th ed. Wolters-Kluwer, 2016, ISBN: 9781496302632.

Recommended readings and/or materials:

None

Other:

None

WHAT METHODS WILL BE EMPLOYED TO HELP STUDENTS LEARN?

Class Discussions

Electronic Delivery:

Use of Discussion Boards and Blog topics

Lecture

Media Presentations

Research Projects

Simulations:

Movement Analysis

Visual Aids

Other (Specify):

Application of problem solving/critical thinking/synthesis

- Individual and small group learning activities
- Collaborative Learning

WHAT LEARNING ACTIVITIES OR ASSIGNMENTS ARE REQUIRED OUTSIDE OF CLASS?
List activities and hours for each. (Must include reading and writing activities.)

Reading assignments are required and may include but are not limited to the following:

- Textbook
- Professional journals
- AOTA website

Writing assignments are required and may include but are not limited to the following:

- Analyzing community based practice in terms of trends in healthcare, legislation and the role of OT
- Research evidence for community practice in disciplines other than OT
- Develop a community integration plan for a client with a selected disability

Discussion Board/Blog Topics

- What are some ethical issues surrounding the use of spirituality in OT practice?
- Share personal feeling regarding working with people who have injuries related to military duty
- What are some of the difficulties related to forensic practice?

Group Project

Students will complete a small collaborative project related to the development of a community-based OT program. This will include but not be limited to:

- Working within a selected environment: analyze resources available in the community for a specified population, determine need, and develop a hypothetical community-based group intervention program including goals, theory, evidence, staffing and a plan for program evaluation.

STANDARDS OF ACHIEVEMENT

List graded activities.

- | | |
|---------------------------|-----|
| • Quizzes | 25% |
| • Group Project | 25% |
| • Written assignments | 40% |
| • Discussion boards/blogs | 10% |

How will student learning be assessed? (Multiple measures must be used.)

Student Learning Outcomes:

1. Students will apply theories of motor control to clinical practice with a variety of client populations.
2. Students will analyze motor learning and its application to recovery of function.
3. Students will describe the clinical management of postural control using motor, sensory, and cognitive processes of the client.
4. Students will develop clinical treatment plans for clients with motor dysfunction based on evidence from research on motor control.

Supplemental Forms	
New Course Proposal Form	
Course Title	OS 304 - Movement Theory & Analysis
Supplemental Forms Last Saved	
New Course Proposal Form Last Saved: , at By	
Approval Dates	
Curriculum and Instruction Council Chair: 12/05/2016	
Department Chair: 12/05/2016	
Division Dean: 12/05/2016	