NANYANG TECHNOLOGICAL UNIVERSITY
NATIONAL INSTITUTE OF EDUCATION
PHYSICAL EDUCATION & SPORTS SCIENCE
Course Outline (MSc)

COURSE CODE: MES816

COURSE TITLE: Motor Control

COURSE DURATION: 39 HOURS (3 HOURS x 13 WEEKS)

COURSE DESCRIPTION

This course provides an overview of various neural subsystems involved in controlling human motor behavior. Brain structures specifically involved in motor function include sensory-motor cortex, basal ganglia, cerebellum and spinal cord. Anatomy and function of these structures will be discussed in the class.

Lesions on specific locations in the brain and resulted movement change serve as a guide to infer the roles of the involved brain structures. Therefore, the main focus of this course will be placed on describing and interpreting observed behavioral changes in relation to their structural changes.

COURSE OBJECTIVES

Upon completion of this module, the student should be able to:

• Situate motor control/learning research issues appropriately within the extant literature.

• Summarize a motor control or learning research article in a coherent way.

• Provide an educated opinion about how movements become coordinated over time, based on a solid understanding of contemporary paradigms and its relation with motor control at the neuromuscular level.

ASSESSMENTS

1. Term test individual (30%)

~ Mainly on Summers & Anson (2009), and Williams & Ford (2009), plus contents on neuromuscular aspects of motor control and learning.

2. Research article summary slides – pair work (20% on slides production)

~ Find a research study on motor control or learning (not a review) in Journal of Motor Behavior or Motor Control.

Read it in detail and explain to your peers in the form of an online presentation.
3. View all Research article summary slides and respond to online questions on summary slides individual (15%).

4. Final reflection essay on the topic of “How do movements become coordinated over time?” 1000 to 1500 words maximum, excl. references. individual (25%).

5. Attendance and participation/homework individual (10%)

REFERENCES


*denotes content in the paper will be examined in the term test, so read in detail.

Other references will be listed as the module progresses.