



## Syllabus

**Term:** 2025/26/2      **Subject name:** Motor Learning Motor Control      **Subject code:** ENAEDZN0601

---

**Unit (Unit code)** (TESTNEV)

**Lecturer responsible for the course:** Dr. ATLASZ Tamás

**Requirement:** Exam

**Classes per week :** 2/0/0

**Classes per term:** 26/0/0

---

### Purpose of education:

Motor control is concerned with issues of control and coordination of such fundamental motor activities as posture, locomotion, multi-joint reaching movement

### Contents:

1. Brief history of motor learning and motor control. Physiologic anatomy of skeletal muscle. Contraction of skeletal muscle. Excitation-contraction coupling. Electromyography (EMG).
2. The neurological bases of human movement. Organization of the nervous system. Resting membrane potentials. Action potentials.
3. Basic functions of synapses and neurotransmitters.
4. Neuromuscular transmission. Motor endplate and motor unit. Electromyography (ECG).
5. Receptors in the nervous system, receptor potentials. The spinal cord. Dermatomes.
6. Reflex arc. Spinal reflexes. Patellar reflex, flexor & cross extensor reflex. Golgi tendon reflex.
7. Somatosensory mechanisms. Thalamus. Somatosensory cortex.
8. The cerebral cortex: structure and function.
9. Somatomotor system. Primary motor cortex, which executes voluntary movements. Supplementary motor areas and premotor cortex, which select voluntary movements. Posterior parietal cortex. Dorsolateral prefrontal cortex. The pyramidal system.



## Syllabus

**Term:** 2025/26/2

**Subject name:** Motor Learning Motor Control

**Subject code:** ENAEDZN0601

### Contents:

10. The extrapyramidal systems I. Basal ganglia.
11. The extrapyramidal systems II. The cerebellum.
12. Principles of learning motor skills. Methods of motoric control: positive- negative feedback.
13. Preparing learners for practice: Motivation and attention.

### System of examing and valuation:

Attending lectures is highly recommended.

Written exam is based on lectures, accessible electronic sources and lecture materials.

Written test.

Grades:

0–50% fail

51–64% acceptable

65–74% average

75–84% good

85–100% excellent

### Bibliography:



## Syllabus

**Term:** 2025/26/2

**Subject name:** Motor Learning Motor Control

**Subject code:** ENAEDZN0601

### **Bibliography:**

*Schmidt and Wrisberg: Motor Learning and Performance (Third Edition),*

*Schmidt and Lee: Motor Control and Learning (Third Edition)*

*Gayton and Hall: Medical Physiology*

*Pocock and Richards: Human Physiology, The Basis of Medicine*

*Larry R. Squire: Fundamental Neuroscience*

*Heimer: The Human Brain and Spinal Cord (Second Edition)*

### **Bibliography:**