Name of the course: RESEARCH ON THE NEURAL BASIS OF SPORTS ACTIVITIES

Teacher(s): Ilić B. Duško, Filipović R. Saša, Mrdaković D. Vladimir

Course status: elective

Number of ECTS points: 10

Requirement: completed subjects Measurements and evaluation in physical education and sports

Course objective:

To provide students with knowledge about:

(1) neurophysiological techniques and other measurement methods used in research into neural bases and individual differences in (a) motor skills, (b) endurance and pain tolerance, and (c) decision-making, in sports activities, with reference to practical implementation of standard measurement methods and techniques;

(2) interpretation of the results of research on the neural basis of sports activities;

(3) analysis of scientific literature and implementation of knowledge in the field of neural bases of sports activities in research practice, as well as integration of knowledge with content that is thought in other subjects within doctoral studies.

Outcome of the course:

It is expected that each student will be able to critically analyse the scientific literature, precisely define and set the experimental paradigm, interpret the results obtained and conceptualize methods in the implementation of experiments related to research on the neural basis of sports activities.

It is expected that each student will be able to participate in the implementation of methods and procedures used in research on the neural basis of sports activities.

Content of the course:

• Definitions of research terms in study of the neural basis of sports activities.

• Neural bases of learning and improving motor skills in sport (organization of neural structures that participate in the realization of motor skills, neurophysiological and cognitive mechanisms of learning motor skills in sports).

• Neural foundations of endurance and pain tolerance in sport (organization of neural structures involved in pain experience, neurophysiological and cognitive mechanisms of pain experience control).

• Neural bases of decision making in sports activities (organization of neural structures involved in situation assessment, decision making, error correction and planning; neurophysiological and cognitive mechanisms involved in the implementation of these activities).

Recommended literature

Neurophysiological basis of movement. Latash ML. Publisher: Human Kinetics, 2008.

Principles of Cognitive Neuroscience (2nd Edition). Purves D et al. Sinauer Associates, 2013.

Original and review scientific papers for each area covered.

Number active classes	Theory: 4	Practice:

Course delivery methods

Theoretical lectures; Laboratory work; Independent research work

Knowledge assessment (maximum number of points 100)

Class activity - 30

Colloquium, laboratory work - 20

Seminar paper - 20

Oral exam - 30

Testing ways may vary: (written exams, oral exams, project presentations, seminars, etc. .....)

*maximum length 1 A4 page