

Study program: Doctoral academic studies biomedical sciences
Name of the subject: DEVELOPMENTAL PHYSIOLOGY
Teacher(s): Jelena Ž. Popadić Gaćeša, Nada M. Naumović, Dea I. Karaba Jakovljević, Miodrag P. Drapšin, Aleksandar V. Klašnja, Vedrana V. Karan Rakić
Status of the subject: elective
Number of ECTS points: 20
Condition: -
<p>Goal of the subject Students will familiarize with the specificities of growth and development of human body and organ systems through childhood and adolescence; specificities of fetal behavior; importance of physical activity during physiological growth and maturation</p>
<p>Outcome of the subject</p> <p>Knowledge Gaining knowledge about specificities of physiological growth and development through different organ systems and in different ages during childhood and adolescence; learning about the latest knowledge from developmental physiology and education about adequate approach to physiological variations in child's growth and maturation; physiological changes of children's functional capacity during growth and maturation and influence of physical activity on some functional parameters</p> <p>Skills Approach to healthy child and importance of counseling in all age groups until adulthood; recognizing specificities of psychomotor and physical development in adolescence; specificities in functional capacity assessment in childhood in relation to physical activity levels</p>
<p>Content of the subject</p> <p><i>Theoretical lectures</i></p> <ul style="list-style-type: none"> - Cellular mechanisms of growth and development - Fetal behavior - Specificities of musculoskeletal system development - Specificities of cardiovascular system development - Specificities of respiratory system development - Specificities of urinary system development - Specificities of immune system development - Specificities of endocrine system development - Specificities of sensory and neural system development - Adolescence - Importance of physical activity in children and adolescents <p><i>Practical lectures</i></p> <ul style="list-style-type: none"> - Methods for body composition analysis in childhood - Functional testing in childhood (respiratory, cardiovascular, musculoskeletal, metabolic) - Methods for neurophysiological testing in childhood - Seminars with presentation
<p>Recommended literature</p> <p><i>Obligatory:</i></p> <ol style="list-style-type: none"> 1. Popadić Gacesa J. Musculoskeletal system development – functional aspects. Monographic publication. Faculty of Medicine, University of Novi Sad, 2018. in Serbian 2. Naumović N. Fetal behaviour. In: Belopavlović Z. Ultrasound of fetal anomalies: principles and clinical practice. Monographic publication. Faculty of Medicine, University of Novi Sad, Partenon MAM system Belgrade, Special edition. 2016, pp. 88-112. in Serbian 3. Kliegman R, Stanton B, St. Geme J, Schor N. Nelson Textbook of Pediatrics, 2-Volume Set, 20th Edition, Elsevier, 2015. 4. MacGregor J. Introduction to the anatomy and physiology of children: a guide for students of nursing, child care and health. 2nd Ed. Routledge, Taylor and Francis Group, London and New York, 2008. <p><i>Additional:</i></p> <ol style="list-style-type: none"> 1. Naumović N. Interaction of fetus and mother organism. In: Belopavlović Z. 3D-ultrasound in gynecology and perinatology:

- principles and clinical practice. Special edition, University of Novi Sad, Faculty of Medicine, 2019. in Serbian
2. Kenney LW. Children and adolescents in sport and exercise. In: Physiology of sport and exercise. Eds. Kenney LW, Wilmore JH, Costill DL. 6th ed. Human Kinetics, Champaign, IL, 2015, 437-455.
 3. Popadic Gacesa J, Barak O. Influence of physical activity on adolescents' health. In: Roncevic NP, Kristiforovic MJ. Thematic scientific meeting Academy of medical sciences Serbian Medical Society. Adolescents' health – problems and needs. Novi Sad 2010, 107-129. In Serbian
 4. Popadic Gacesa J, Grujic N. Physical activity and sport in adolescents' development. In: Roncevic N, Stojadinovic A. Development and health of adolescents. Red Cross of Vojvodina, Novi Sad 2008, 129-138. In Serbian

Number of active classes	Theory: 60	Practice: 45
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Methods of delivering lectures
Lectures; lab work and seminars with the discussion as part of the study research work (SRW)

Evaluation of knowledge (maximum number of points 100)
activities during lectures: 25
SRW: 15
Seminars: 10
written test: 50