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| Study Programme : BSc in Biology | | | | |
| Degree level: Bachelor degree | | | | |
| Course Title: Histology and Embryology | | | | |
| Professor: Milica Matavulj, Vesna Rajković | | | | |
| Required/Elective Course: Required Course | | | | |
| Number of ECTS: 7 | | | | |
| Prerequisites: Courses of: Cell biology | | | | |
| Course Objective: The goal of this course is to provide understanding of structure and function of animal tissues and organs and the analysis of developmental processes such as fertilization, embryonic cleavage and cell determination and differentiation in selected species. | | | | |
| Course Outcome: After completing this course, the student will: (1) become familiar with the microscopic anatomy of cells, tissues and organs, (2) understand how structural features of cells, tissues and organs correlate with their specific physiological functions and (3) become familiar with basic principles of developmental biology e.g. embryology. | | | | |
| Course Content: | | | | |
| <i>Theoretical part</i> | | | | |
| Lectures on Histology and Embryology covers three main topics: 1. Structure of Tissues. Epithelial tissues (simple and stratified epithelium, glandular epithelium, sensory epithelium). Muscle tissue (smooth muscle, sceletal muscle, cardiac musle). Connective tissue (mesenchymal tissue, mucous connective tissue, dense irregular connective tissue, loose connective tissue, dense regular connective tissue, adipose tissue, blood, cartilage, bone and osifications). Nerve tissue (nerve cells, neuroglial cells, synapses). 2. Structure of the organ systems. Cardiovascular system. Limphatic system. Digestive system. Respiratory system. Nerve system. Sense organs. Endocrine organs. Urinary system. Male and female reproductive system. 3. Embryology. Overview of animal development. Gametogenesis (spermatogenesis and oogenesis). Fertilization. Early cell division. Cleavage pattern. Blastulation. Gastrulation. Morphogenesis in the embryo. Extraembryonic structure. Neurultion and axis induction. Development of the organ systems: digestive systems, cardiovascular system, limphatic system, respiratory system, nerve system, sense organs, endocrine organs, urinary system, male and female reproductive system. | | | | |
| <i>Practical part</i> | | | | |
| Laboratory practice covers: light microscopy examinations of structure of animal tissues (epithelial tissue, connective tissue, musle tissue, nerve tissue) and organs (cardiovascular system, limphatic system, digestive system, respiratory system, nerve system, sense organs, endocrine organs, urinary system, male and female reproductive system) using permanent prepares. | | | | |
| Reading List: | | | | |
| 1. Anđelković Z, Somer, LJ., Matavulj., M., Lačković, V., Lalošević D., Nikolić, I., Milosavljević, Z., Danilović, V. (2002). Cell and tissue. Bonafides, Nis. (in Serbien) | | | | |
| 2. Anđelković, Z., Somer, LJ., Petović, M., Avramović, V., Milenkova, LJ., Kostovska, N., Petrović, A. (2002). Histological structure of organs. Bonafides, Nis. (in Serbien) | | | | |
| 3. Nikolić, I., Rančić, G., Radenković, G. Lačković, V., Todorović, V., Mitić, D.(2004). Embriology. Faculty of Medecine, University of Niš, Niš (in Serbien) | | | | |
| 4. Matavulj, M. Tissues (script). (2008). Faculty of Sciences, University of Novi Sad, Novi Sad (in Serbien) | | | | |
| 5. Matavulj, M. Embryology (script). (2007). Faculty of Sciences, University of Novi Sad, Novi Sad (in Serbien) | | | | |
| Total hours: | | | | |
| Lectures: 3 | Practices: 3 | Other: - | Student research work: - | |
| Methods of instruction: | | | | |
| lectures, laboratory practice, seminars | | | | |
| Assessment (maximum number of points 100) | | | | |
| Requirements | points | Final exam | points | |
| Active participation in lectures | 5 | Practical exam | 30 | |
| Active participation in practicals | 5 | Oral exam | - | |
| Test(s) or | 60 | | | |
| Pre-exam testing | - | | | |
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| Remark: - | | | | |