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| Study program: Integrated academic studies in medicine | | | |
| Type and level of the study program: integrated academic studies | | | |
| Course title: Regenerative medicine (M5-REGM) | | | |
| Teacher: Dušan M. Marić, Bela Balint, Milan S. Stanković, Dragan D. Savić, Aleksandar D. Savić, Aleksandar N. Đorđević, Slobodan P. Grebeldinger, Tihomir R. Vejnović, Tomislav P. Cigić, Edita J. Stokić, Radovan Ž. Veljković, Pavle R. Kovačević, Radmila G. Jovanović, Vuk D. Sekulić, Branislava Belić, Jovanka L. Kolarević, Čongor L. Nad, Nikica Daraboš, Mihajla R. Đan, Svetlana I. Vojvodić, Lada V. Petrović, Dušica L. Marić, Mirela M. Erić, Vladan M. Popović, Janko J. Pasternak, Aleksandar M. Komarčević, Jelena B. Antić, Anna S. Uram Benka | | | |
| Course status: elective | | | |
| ECTS Credits: 3 | | | |
| Condition: - | | | |
| Course aim Regenerative medicine is a new branch of medicine that uses stem cells for research and clinical purposes. Nowadays, the need for donated organs and tissues is far bigger than available, and this field of medicine uses the ability of stem cells to divide and differentiate into more than 200 different types of human cells. Stem cells play a significant role in regenerative medicine where the diseases such as diabetes, osteoporosis, cancer and heart disease are treated by creating new healthy cells, thereby reducing the need for organ transplant. This elective course will provide acquisition of knowledge and development of critical and scientific thinking that is essential for independent research and independent practice. Students will learn about the latest scientific discoveries in the field of regenerative medicine. | | | |
| Expected outcome of the course: Basic studies of regenerative medicine will provide students knowledge and experience in this field. Through lectures and practical work, students learn to monitor and analyze the contemporary scientific literature, develop and lead original research, and to participate in the advancement of regenerative medicine and cell therapy. Students will be able to identify and solve scientific problems, learn about new techniques and approaches to scientifically established facts in practical work. They will learn to monitor and analyze the contemporary scientific literature, participate in original research, present their results at scientific meetings and in scientific journals. Under the guidance of a mentor, students will go through the study of all phases of scientific research. The knowledge and the results obtained will be used for writing and defense of their graduation thesis. | | | |
| Course description <i>Theoretical education</i> | | <ul style="list-style-type: none"> - Bone structure, function and formation of tissue stem cells in regenerative orthopedics - Nanotechnology in regenerative medicine - Regenerative medicine in maxillofacial and plastic surgery - Stem cells and cosmetic surgery - Regenerative medicine of the respiratory system - Stem cells in gynecology - Stem cells in the treatment of malignant conditions in childhood - Regenerative medicine in general surgery and urology | |
| <ul style="list-style-type: none"> - Embryonic stem cells - Bone marrow stem cells - Isolation of stem cells - technology - Stem cell therapy – hematologic issues - Regeneration of nervous tissue by stem cells - Genetically modified stem cells in experimental gene therapy - Intellectual property of human multi stem cells - Regenerative possibilities of heart tissue using stem cells - Stem cells in vascular surgery - Stem cell therapy: possibilities for diabetes? - Stem cells and autoimmune diseases: development of therapeutic procedures - Stem cell therapy in ophthalmology | | <i>Practical education: exercises, other forms of education, research related activities</i> <ul style="list-style-type: none"> - Use of polymers in bone regenerative procedures - Basic principles of laboratory research - Basic principles and techniques of stem cell isolation in experimental conditions - Basic principles of stem cell application | |
| Literature <i>Compulsory</i> 1. Wislet-Gendebien S. Advances in Regenerative medicine. In Tech 2011. <i>Additional</i> 1. Students will be informed about necessary literature for each unit. | | | |
| Number of active classes | | | Other: |
| Lectures: 15 | Practice: 30 | Other types of teaching: Research related activities: | |
| Teaching methods | | | |
| Student activity assessment (maximally 100 points) | | | |
| Pre-exam activities | points | Final exam | points |
| Lectures | 30 | Written | 30 |
| Practices | 20 | Oral | |
| Colloquium | | | |
| Essay | 20 | | |