Medicinski fakultet u Rijeci

IZVEDBENI NASTAVNI PLAN
2025/2026

Za kolegij

Regeneration Medicine

Studij:	**Medical Studies in English (R)** (izborni) Sveučilišni integrirani prijediplomski i diplomski studij
Katedra:	**Zavod za anatomiju**
Nositelj kolegija:	**prof. dr. sc. Jerković Kraljić Romana, dr. med.**
Godina studija:	**1**
ECTS:	**1.5**
Stimulativni ECTS:	**0 (0.00%)**
Strani jezik:	**Mogućnost izvođenja na stranom jeziku**

Podaci o kolegiju:

Popis obvezne ispitne literature:

Popis dopunske literature:

Nastavni plan:

Predavanja popis (s naslovima i pojašnjenjem):

L1 Introductory lecture

To acquaint course participants with the regenerative capacity of different types of tissues, the potency of body cells and their ability to grow and differentiate into various cell types, methods of cell and gene therapy, previous results of cell and gene therapy in tissue regeneration, possibilities of clinical application, and regenerative medicine as a means of slowing down the aging of cells, tissues, and the organism.

Definition of regenerative medicine, the most important discoveries and insights, possibilities and limitations.

Mitotic/postmitotic cells, cell cycle, cell potency, differentiation, cell culture. Stem cells (embryonic, mesenchymal, origin, markers, manipulation, application of stem cells in therapy)

Seminari popis (s naslovima i pojašnjenjem):

Cell and gene therapy

Types of therapy, vectors. Application, examples. Advantages/disadvantages. Immunological aspect

Tissue engineering

Cell lines, manipulation. 3D biomaterials/scaffolds/bioreactors (growth factors). Vascular prostheses.

Regeneration of skeletal musculature

The student will get acquainted with seminars on satellite stations, SP stations. Extracellular matrix. Skeletal muscle as a secretory organ.

Wound healing

The student will learn about the types of wounds and the stages of wound healing.

Regeneration of bone, cartilage, and tendons

The student will become familiar with methods of regenerating bone, cartilage, and tendons.

Pancreas regeneration

The student will give a presentation on diabetes and therapy.

Regeneration of the cardiovascular system

The student will learn the ways in which the cardiovascular system can be regenerated.

Regeneration of the nervous system

The student will be introduced to the knowledge of the application of cellular and gene therapy in modern regenerative medicine.

Kidney regeneration

The student will learn about kidney regeneration methods

Tooth regeneration

Getting acquainted with the procedure of tooth regeneration

"Anti-aging" theory

Protein synthesis and aging. Hormones, growth factors, and cytokines. Oxidative damage to cells (ROS). The impact of lifestyle.

Obveze studenata:

Ispit (način polaganja ispita, opis pisanog/usmenog/praktičnog dijela ispita, način bodovanja, kriterij ocjenjivanja):

Ostale napomene (vezane uz kolegij) važne za studente:

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SATNICA IZVOĐENJA NASTAVE 2025/2026
Regeneration Medicine

Predavanja (mjesto i vrijeme / grupa)	**Seminari** (mjesto i vrijeme / grupa)

Popis predavanja, seminara i vježbi:

PREDAVANJA (TEMA)	Broj sati	Mjesto održavanja
L1 Introductory lecture	2	
Definition of regenerative medicine, the most important discoveries and insights, possibilities and limitations.	3	

SEMINARI (TEMA)	Broj sati	Mjesto održavanja
Cell and gene therapy	2	
Tissue engineering	2	
Regeneration of skeletal musculature	2	
Wound healing	1	
Regeneration of bone, cartilage, and tendons	2	
Pancreas regeneration	2	
Regeneration of the cardiovascular system	2	
Regeneration of the nervous system	2	
Kidney regeneration	2	
Tooth regeneration	1	
"Anti-aging" theory	2	

ISPITNI TERMINI (završni ispit):