

Medicinski fakultet u Rijeci

**IZVEDBENI NASTAVNI PLAN  
2025/2026**

Za kolegij

**Regeneration Medicine**

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

**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

<b>Predavanja</b> (mjesto i vrijeme / grupa)	<b>Seminari</b> (mjesto i vrijeme / grupa)
<b>02.03.2026</b>	
L1 Introductory lecture: <ul style="list-style-type: none"><li>• ONLINE (18:00 - 20:15) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul>	
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>03.03.2026</b>	
Definition of regenerative medicine, the most important discoveries and insights, possibilities and limitations.: <ul style="list-style-type: none"><li>• ONLINE (17:00 - 18:30) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul>	
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>04.03.2026</b>	
	Cell and gene therapy: <ul style="list-style-type: none"><li>• P03 - INFORMATIČKA UČIONICA (16:30 - 19:30) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul> Tissue engineering: <ul style="list-style-type: none"><li>• P03 - INFORMATIČKA UČIONICA (16:30 - 19:30) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul>
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>06.03.2026</b>	
	Regeneration of skeletal musculature: <ul style="list-style-type: none"><li>• ONLINE (16:30 - 20:15) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul> Wound healing: <ul style="list-style-type: none"><li>• ONLINE (16:30 - 20:15) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul>
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>13.03.2026</b>	
	Regeneration of bone, cartilage, and tendons: <ul style="list-style-type: none"><li>• ONLINE (16:30 - 20:15) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul> Pancreas regeneration: <ul style="list-style-type: none"><li>• ONLINE (16:30 - 20:15) <sup>[133]</sup><ul style="list-style-type: none"><li>◦ RM</li></ul></li></ul>
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>16.03.2026</b>	

	<p>Regeneration of the cardiovascular system:</p> <ul style="list-style-type: none"> <li>• P03 - INFORMATIČKA UČIONICA (16:30 - 20:15) <sup>[133]</sup> <ul style="list-style-type: none"> <li>◦ RM</li> </ul> </li> </ul> <p>Regeneration of the nervous system:</p> <ul style="list-style-type: none"> <li>• P03 - INFORMATIČKA UČIONICA (16:30 - 20:15) <sup>[133]</sup> <ul style="list-style-type: none"> <li>◦ RM</li> </ul> </li> </ul>
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>18.03.2026</b>	
	<p>Kidney regeneration:</p> <ul style="list-style-type: none"> <li>• P03 - INFORMATIČKA UČIONICA (16:30 - 19:30) <sup>[133]</sup> <ul style="list-style-type: none"> <li>◦ RM</li> </ul> </li> </ul> <p>Tooth regeneration:</p> <ul style="list-style-type: none"> <li>• P03 - INFORMATIČKA UČIONICA (16:30 - 19:30) <sup>[133]</sup> <ul style="list-style-type: none"> <li>◦ RM</li> </ul> </li> </ul>
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	
<b>20.03.2026</b>	
	<p>"Anti-aging" theory:</p> <ul style="list-style-type: none"> <li>• ONLINE (16:30 - 18:00) <sup>[133]</sup> <ul style="list-style-type: none"> <li>◦ RM</li> </ul> </li> </ul>
prof. dr. sc. Jerković Kraljić Romana, dr. med. <sup>[133]</sup>	

### Popis predavanja, seminara i vježbi:

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

<b>SEMINARI (TEMA)</b>	<b>Broj sati</b>	<b>Mjesto održavanja</b>
Cell and gene therapy	2	P03 - INFORMATIČKA UČIONICA
Tissue engineering	2	P03 - INFORMATIČKA UČIONICA
Regeneration of skeletal musculature	2	ONLINE
Wound healing	1	ONLINE
Regeneration of bone, cartilage, and tendons	2	ONLINE
Pancreas regeneration	2	ONLINE
Regeneration of the cardiovascular system	2	P03 - INFORMATIČKA UČIONICA
Regeneration of the nervous system	2	P03 - INFORMATIČKA UČIONICA
Kidney regeneration	2	P03 - INFORMATIČKA UČIONICA
Tooth regeneration	1	P03 - INFORMATIČKA UČIONICA
"Anti-aging" theory	2	ONLINE

**ISPITNI TERMINI (završni ispit):**

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