

Course Title	<b>Regenerative medicine</b>				
Course Code	MD290				
Course Type	Elective				
Level	1 <sup>st</sup> Cycle (MD)				
Year / Semester	2 <sup>nd</sup> Year / 3 <sup>rd</sup> Semester				
Teacher's Name	TBA				
ECTS	3	Lectures / week	1 hr / 14 weeks	Laboratories / week	0 hr / 14 weeks
Course Purpose and Objectives	The course will focus on exploiting the body's own repair mechanisms to replace or heal damaged tissues and organs. RM will effectively address the shortage and rejection of transplanted donor organs in the future. This multidisciplinary course will incorporate stem cell biology, tissue engineering, biomaterials engineering, and transplantation biomedical science.				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> <li>• Basic stem cell biology as well as cellular programming and reprogramming will be covered.</li> <li>• Clinical applications of stem cell therapies on diseases, such as e.g. Parkinson's, diabetes and cancer will be discussed as well as cell and gene therapy.</li> <li>• Biobanking of stem cells and the ethical considerations in regenerative medicine will be discussed, and current clinical applications will be illustrated.</li> <li>• Development of novel approaches for enhancement, replacement or repair of cells as well as tissues and organs using bioengineered cellular methods and next generation biomaterials will be covered during the course.</li> <li>• Criteria in good laboratory/manufacturing practice (GLP/GMP) for applications in regenerative medicine will be discussed as well as policies and commercial development.</li> </ul>				
Prerequisites	None	Co-requisites	None		
Course Content	-Current perspectives in Regenerative Medicine/Introduction				
	-Cellular Aspects of Regenerative Medicine. Concept of Stem Cells				

	<ul style="list-style-type: none"> <li>-Adult Stem Cells</li> <li>-Embryonic Stem Cells</li> <li>-Induced Pluripotent Stem Cells</li> <li>-Hematopoietic Stem Cells</li> <li>-Cell Reprogramming</li> <li>-Tissue Engineering: Basics and Applications</li> <li>-Biomaterials for Regenerative Medicine</li> <li>-Regenerative Medicine: From Research to Clinical Practice - Overview of Enabling Technologies Diseases impacted by Regenerative Medicine /Replacement Therapy</li> <li>-Ethics and Patentability</li> </ul>						
Teaching Methodology	Face-to-face						
Bibliography	<p>Anthony Atala Robert Lanza Tony Mikos Robert Nerem (eds). Principles of Regenerative Medicine. Academic Press</p> <p>Regina Coeli dos Santos Goldenberg Antonio Carlos Campos de Carvalho, / eBook ISBN: 9780123914415 / Hardcover ISBN: 9780124160125</p> <p>The Miracle of Regenerative Medicine: How to Naturally Reverse the Aging Process by <a href="#">Ph.D. Lottor, HMD, Elisa, Ph.D., M.D. Goldstone, Judi, M.D. (Foreword by)</a></p>						
Assessment	<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Examinations:</td> <td style="text-align: right;">70%</td> </tr> <tr> <td>Assignment/Lab</td> <td style="text-align: right;">20%</td> </tr> <tr> <td>Class Participation:</td> <td style="text-align: right;">10%</td> </tr> </table>	Examinations:	70%	Assignment/Lab	20%	Class Participation:	10%
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Language	English						