

<b>New Course Code and Title</b>	BG6101 Tissue Engineering & Gene Therapy	
<b>Details of Course</b> <u>Tissue Engineering Part (first half):</u> Definitions of Tissue Engineering, Engineered Tissue, Engineered Therapeutics and Regenerative Medicine; Therapeutic Cells Delivery and Settlement for Tissue Engineering; Tissue Engineering Scaffolding with Functional Biomaterials; Tissue Engineering Strategy with Developmental Biology; Engineered/Native Tissue Integration; and Model/Clinical Applications and Evaluations of Engineered Tissues. <u>Gene Therapy Part (second half):</u> Definitions of Gene Therapy and Genetic Therapeutics; Related Criteria, Standards, R&D Regulations and Ethics; Gene Delivery: Viral and Non-Viral Vectors; Therapeutic and Regenerative Remedies by Transfer of Genes and Antisense; and Applications and Application Perspectives of Gene Therapy.	<b>Summary of course content</b> ( <i>please note that this information provided will also be uploaded to the web for viewing at large</i> )  Fundamental knowledge and technology of tissue engineering and gene therapy for engineered regenerative medicine.	
	<b>Rationale for introducing this course</b>  Tissue engineering and gene therapy related research and applications have become more and more popular and important in medical and biomedical areas. This course is developed to deliver the fundamental knowledge about gene/cell/tissue therapeutics and the typical applications in clinical practice. This course is designed for bioengineering students on Master of Science level.	
	<b>Aims and objectives</b> To introduce the concepts of tissue engineering and gene therapy; to deliver background knowledge required to develop gene and cell based biotherapy	
<b>Assessment</b>	<i>Final Examination:</i>	60%
	<i>Mid-term Quiz:</i>	40%
	<b>Total:</b>	100 %
<b>To be offered with effect from</b> (state Academic Year and Semester)	Semester 2.	
<b>Cross Listing</b> (if applicable)		
<b>Prerequisites</b> (if applicable)		
<b>Preclusions</b> (if applicable)		
<b>Mode of Teaching &amp; Learning</b> (Lectures, regular tests, Q&A, problem-based learning)	Lectures	
<b>Basic Reading List</b> <ul style="list-style-type: none"> <li>• <b>Compulsory Reading</b></li> <li>• <b>Supplementary Reading</b></li> </ul>	<i>Lecture notes.</i>  <i>W. Mark Saltzman. <b>Tissue Engineering</b> (Principles for the Design of Replacement Organs and Tissues), Oxford University Press, Inc., New York City, New York 10016, 2004. ISBN 0-19-514130-X.</i> <i>K.K.Jain. <b>Textbook of Gene Therapy</b>, Hogrefe &amp; Huber Publishing, Cambridge, MA 02139, USA, 1998. ISBN: 978-0889371903</i>	
<b>Maximum Class Size</b>	50	
<b>Hours of Contact/Academic Units</b>	39 hours / 3 AU	
<b>Workload Per Week</b> (The workload for a 3-AU course must add up to 39 hours of contact hours)	Lecture hours per week	3
	Tutorial hours per week	0
	Laboratory hours per week	0
	No. of hours per week for projects, fieldwork, Assignments, reading, etc.	0
	<b>Total hours per week</b>	3