

New Course Code and Title	BG6001 Advanced Biomaterials	
Details of Course The following subjects are to be covered in this course, 1. Introduction to various biomaterials and their applications in bioengineering, the importance of material selection and design considerations. 2. Classes of materials used in biomaterials; metals, polymers, ceramics and composites. Material preparation, chemical composition, properties and uses in medicine and biosciences, failure mechanisms. 3. Introduction and Basics on Nervous System 4. Brain Tissue/electrode interface, Blood Brain Barrier and CNS drug delivery 5. Challenges and strategies in neural tissue engineering and regenerative medicine	Summary of course content (<i>please note that this information provided will also be uploaded to the web for viewing at large</i>) In this course, the application of advanced materials in medicine and neural engineering will be introduced.	
	Rationale for introducing this course A better understanding on advanced biomaterials will help students solve basic and clinical problems related to materials.	
	Aims and objectives Students will learn about the chemical synthesis and characterization of materials with advanced nanostructure and properties, understand various classes of advanced biomaterials used in medicine and dentistry and distinguish materials suitable for specific applications. Students should be able to critically read and review the literature in the field of biomaterials and have developed their abilities to digest, organize, and effectively present technical material to a group of their peers.	
Assessment	<i>Final Examination:</i> <i>Participation, assignments and attendance</i> <i>Term Paper</i>	50% 25% 25%
	Total:	100 %
To be offered with effect from (state Academic Year and Semester)	2011 Sem1	
Cross Listing (if applicable)	N/A	
Prerequisites (if applicable)	An Introduction of Materials Science and Engineering	
Preclusions (if applicable)	N/A	
Mode of Teaching & Learning (Lectures, regular tests, Q&A, problem-based learning)	Lectures, Research-articles review and Team project.	
Basic Reading List <ul style="list-style-type: none"> • Compulsory Reading • Supplementary Reading 	<i>Electronic handouts will be provided.</i>	
Maximum Class Size	30	
Hours of Contact/Academic Units	39 hours / 3 AU	
Workload Per Week (The workload for a 3-AU course must add up to 39 hours of contact hours)	Lecture hours per week Tutorial hours per week Laboratory hours per week No. of hours per week for projects, fieldwork, Assignments, reading, etc.	3hrs N/A N/A
	Total hours per week	3hrs