

New Course Code and Title	BG6003 Advanced Biomedical Instrumentation	
Details of Course	Summary of course content (<i>please note that this information provided will also be uploaded to the web for viewing at large</i>) This course introduces various types of biomedical instrumentation used in clinical setting. Knowledge on relevant physiology, biopotential, biosensor, and electric circuits will be taught. Instrument prototyping using LabVIEW software will be covered, and a programming assignment will be given. Instruments in intensive care unit will be covered, as well as the instruments related with brain function such as EEG and fMRI. Principles of optical microscopy will be also covered, including confocal microscopy, fluorescence lifetime imaging microscopy (FLIM), and total internal reflection fluorescence microscopy (TIRF).	
	Rationale for introducing this course Knowledge in biomedical instrumentation is vital for bioengineers since it is the tool we are providing medical doctors for better diagnosis, monitoring, and treatment, and it has to be taught to MSc level students.	
	Aims and objectives Deeper understanding of working principles behind many common biomedical instruments, and practicing of instrument prototyping using LabVIEW software	
Assessment	<i>Final Examination:</i> <i>LabVIEW assignment</i> <i>Attendance</i>	<i>60%</i> <i>30%</i> <i>10%</i>
	Total:	100 %
To be offered with effect from (state Academic Year and Semester)	AY 11/12	
Cross Listing (if applicable)	N/A	
Prerequisites (if applicable)	N/A	
Preclusions (if applicable)	N/A	
Mode of Teaching & Learning (Lectures, regular tests, Q&A, problem-based learning)	Lectures	
Basic Reading List <ul style="list-style-type: none"> • Compulsory Reading • Supplementary Reading 	None Webster, "Medical Instrumentation", 4 th Ed, Wiley	
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	3
	Tutorial hours per week	0
	Laboratory hours per week	0
	No. of hours per week for projects, fieldwork, Assignments, reading, etc.	0
	Total hours per week	3