

BIOMEDICAL ENGINEERING TECHNICAL ELECTIVES * (updated Fall 2008)

Below are 5 lists of Technical Elective Areas, it is recommended that students meet with a Biomedical Engineering Faculty to plan their Electives.

<u>Bioinstrumentation</u>			<u>Biomaterials</u>		
BE4110	Neuroengineering	3	BE4100/5100	Cell & Tissue Mechanics	3
BE4660	Active Implantable Devices	3	BE4110	Neuroengineering	3
BE4700	Biosensors: Fabrication & Applications	3	BE4300	Advanced Polymeric Biomaterials	3
BE4930	Biomedical Microcontrollers	3	BE4600	Drug and Gene Delivery	3
MY4240	Intro to MEMS	4	BE4660	Active Implantable Devices	3
MY4710	Materials science of Electronic Devices	3	BE4800	Biomaterials Interfaces	3
EE2150	Intro to Signal Processing	3	BE4940	Intro to Tissue Engineering	3
EE3130	Electronics	3	MY3100	Materials Processing I	4
EE3140	Electromagnetics	3	MY3110	Materials Processing II	4
EE3170	Microcontroller Applications	3	MY3200	Materials Characterization I	4
EE3221	Introduction to Motor Drives	4	MY3210	Materials Characterization II	4
EE4232	Electronic Applications	3	MY3400	Mechanical Properties of Materials	3
EE4257	Digital Image Processing	3	MY4140	Science of Ceramic Materials	3
EE4261	Classical Control Systems	3	MY4150	Composite Materials	2
EE4262	Digital and Non-linear Control	3	MY4160	Corrosion and Environmental Effects	2
EE4272	Computer Networks	3	MY4200	Scanning Electron Microscopy	2
EET3353	Sensors, Data Acquisition and Control	3	MY4240	Introduction to MEMS	4
CS4321	Introduction to Algorithms	3	MY4710	Materials science of Electronic Devices	3
CS4711	Introduction to Software Engineering	3	MY4800	Materials & Process Selection	3
			CM/CH4610	Intro to Polymer Science	3
			CM/CH4620	Polymer Chemistry	3
			CM4650	Polymer Rheology	3
			MEEM4635	Design with Plastics	3
			MEEM4640	Micromanufacturing Processes	3
<u>Biomechanics - Thermal Sciences</u>			<u>General</u>		
BE4400	Bioheat and Mass Transfer	3	BE4000	Independent Study (requires departmental approval)	**
MEEM3210	Fluid Mechanics	3	BE4110	Neuroengineering	3
MEEM4210	Computational Methods in Thermal Science	3	BE4510	Cardiovascular Engineering	3
			BE5750	Nanotechnology for Biomedicine	2
			EE3160	Linear Systems and Controls	3
<u>Biomechanics - Solid Mechanics</u>			MEEM3501	Product Realization I	3
BE4100/5100	Cell & Tissue Mechanics	3	MEEM3502	Product Realization II	3
BE4300	Advanced Polymeric Biomaterials	3	MEEM4403	Computer Aided Design Methods	4
BE4940	Intro to Tissue Engineering	3	UN2600	Fundamentals of Nanoscale Science and Engineering	2
MEEM2500	Integrated Design and Manufacturing	4	MEEM4990	Human Factors in Engineering	3
MEEM2700	Dynamics	3			
MEEM3700	Mechanical Vibrations	3			
MEEM4150	Intermediate Mechanics of Materials	3			
MEEM4170	Failure of Material in Mechanics	3			
MEEM5110	Fund of Mechanics/Elasticity	3			
MEEM5150	Advanced Mechanics of Material	3			
MEEM5160	Experimental Stress Analysis	3			
MEEM5170	Finite Element and Variational Methods in Engineering	3			
MY3400	Mechanical Properties of Materials	2			
MY4150	Composite Materials				

NOTES:

* Some courses have prerequisites. It is your responsibility to take the prerequisites or contact the department offering the course to get it waived.

** No more than 6 credits allowed under technical and science electives combined.

BIOMEDICAL ENGINEERING SCIENCE ELECTIVES * (updated Fall 2008)

BE4000	Independent study (requires departmental approval)	**	CH2410	Organic Chemistry I	3
BE4200	Biology for Engineers II	3	CH2411	Organic Chemistry Lab I	1
BE4930	Principals & Analysis of Cellular Processes	3	CH2420	Organic Chemistry II	3
BL2100	Principles of Biochemistry	3	CH2421	Organic Chemistry Lab II	2
BL2200	Genetics	3	CH3510	Physical chemistry I	3
BL2940	Human Nutrition	3	CH3511	Physical Chemistry Lab I	2
BL3070	Biology & Occupational Hygiene	3	CH3520	Physical Chemistry II	3
BL3210	General Microbiology	4	CH3521	Physical Chemistry Lab II	2
BL3640	General Immunology	3	CH/CM4620	Polymer Chemistry	3
BL4380	Cardiopulmonary Physiology	3	EH4210	Exercise Physiology	3
BL4010	Biochemistry	3	FW3075	Plant Biotechnology	3
BL4020	Biochemistry	3	MA4515	Intro to Partial Differential Equations	3
BL4320	Histology	4	PH2200	University Physics II	3