BIOMEDICAL ENGINEERING TECHNICAL ELECTIVES * (updated Fall 2010)

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

Bioinstrumentation

BE4110	Neuroengineering	3
BE4660	Active Implantable Devices	3
BE4700	Biosensors: Fabrication & Applications	3
BE4770	Biomedical Microcontrollers	3
BE4800	Biomaterials Interfaces	3
MY4240	Intro to MEMS	4
MY4710	Materials science of Electronic Devices	3
EE2150	Intro to Signal Processing	3
EE3130	Electronics	3
EE3140	Electromagnetics	3
EE3170	Microcontroller Applications	3
EE3221	Introduction to Motor Drives	4
EE4232	Electronic Applications	3
EE4257	Digital Image Processing	3
EE4261	Classical Control Systems	3
EE4262	Digital and Non-linear Control	3
EE4272	Computer Networks	3
CS4321	Introduction to Algorithms	3
CS4711	Software Processes and Management	3

Biomechanics - Thermal Sciences

MEEM3210	Fluid Mechanics	3
MEEM4210	Computational Methods in Thermal Science	3

Biomechanics - Solid Mechanics

BE4100	Cell & Tissue Mechanics	3
BE4300	Polymeric Biomaterials	3
BE4940	Intro to Tissue Engineering	3
MEEM2500	Integrated Design and Manufacturing	4
MEEM2700	Dynamics	3
MEEM3700	Mechanical Vibrations	3
MEEM4150	Intermediate Mechanics of Materials	3
MEEM4170	Failure of Material in Mechanics	3
MEEM5170	Finite Element and Variational Methods in Engineering	3
MY3400	Mechanical Properties of Materials	3
MY4155	Composite Materials	3

Biomaterials

BE4100	Cell & Tissue Mechanics	3
BE4110	Neuroengineering	3
BE4300	Polymeric Biomaterials	3
BE4600	Drug and Gene Delivery	3
BE4660	Active Implantable Devices	3
BE4800	Biomaterials Interfaces	3
BE4940	Intro to Tissue Engineering	3
MY3100	Materials Processing I	4
MY3110	Materials Processing II	4
MY3200	Materials Characterization I	4
MY3210	Materials Characterization II	4
MY3400	Mechanical Properties of Materials (*MY4300 in 2011*)	3
MY4140	Science of Ceramic Materials	3
MY4155	Composite Materials	3
MY4165	Corrosion and Environmental Effects	3
MY4200 & 4201	Intro to Scanning Electron Microscopy + Lab	3
MY4240	Introduction to MEMS	4
MY4600	Introduction to Polymer Engineering	3
MY4970	Practical Sanning Probe Microscopy	3
CM/CH4610	Intro to Polymer Science	3
CM4650	Polymer Rheology	3
MEEM4635	Design with Plastics	3
MEEM4640	Micromanufacturing Processes	3

General

BE4000	Independent Study (requires departmental approval)	**
BE4110	Neuroengineering	3
BE4510	Cardiovascular Engineering	3
EE3160	Linear Systems and Controls	3
MEEM3230	Heat Transfer	3
MEEM3501	Product Realization I	3
MEEM3502	Product Realization II	3
MEEM3900	Engineering Design Processes	3
MEEM4403	Computer Aided Design Methods	4
MEEM4630	Human Factors in Engineering	3

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 2010)

BE4000	Independent study (requires departmental approval)	**
BE4200	Biology for Engineers II	3
BE4880	Principals & Analysis of Cellular Processes	3
BL2100	Principles of Biochemistry	3
BL2200	Genetics	3
BL2940	Human Nutrition	3
BL3070	Biology & Occupational Hygiene	3
BL3210	General Microbiology	4
BL3640	General Immunology	3
BL4380	Cardiopulmonary Physiology	3
BL4010	Biochemistry I	3
BL4020	Biochemistry II	3
BL4320	Histology	4
CH2212	Quantative Analysis	5
CH2400	Principles of Organic Chemistry	4
CH2410	Organic Chemistry I	3
CH2411	Organic Chemistry Lab I	1
CH2420	Organic Chemistry II	3
CH2421	Organic Chemistry Lab II	2
CH3510	Physical chemistry I	3
CH3511	Physical Chemistry Lab I	2
CH3520	Physical Chemistry II	3
CH3521	Physical Chemistry Lab II	2
CM/CH4620	Polymer Chemistry	3
EH4210	Exercise Physiology	3
FW3075	Intro to Biotechnology	3
MA4515	Intro to Partial Differential Equations	3
PH2200	University Physics II	3
PH2230	Electronics for Scientists	4
PH4210	Electricity and Magnetism I	3
PH4211	Electricity and Magnetism II	3