

Table 2-1: Biomedical Engineering Curriculum - First Year – Preparatory

1 st Semester			
Course #	Course Title	Cr & Cont Hrs Cr ; Lc ; Tr/Lb	Pre- Requisite
ISLM 181	Creed and Family in Islam	2 ; 2 ; 0	Admission
ENGL 101	General English Language*	7 ; 15 ; 5 (IP)	Admission
MATH 111	Math I	3 ; 3 ; 0	Admission
ARCH 121	Basic Design Studio (1)	3 ; 0 ; 4	Admission
LRSK 141	Learning & Searching Skills	2 ; 2 ; 0	Admission
PHEDU 162	Physical Education	1 ; 0 ; 2	Admission
Total Credits & Contact Hours:		18 ; 22 ; 11	
2 nd Semester			
Course #	Course Title	Cr & Cont Hrs Cr ; Lc ; Tr/Lb	Pre- Requisite
ARAB 182	Arabic Language Skills	2 ; 2 ; 0	Admission
ENGL 102	English for Academic and Specific purpose	3 ; 12 ; 0	ENGL 101
MATH 112	Math II	3 ; 3 ; 0	MATH 111
ARCH 122	Basic Design Studio (2)	3 ; 0 ; 4	ARCH 121
PHYS 132	Physics	3 ; 3 ; 0	Admission
LRSK 142	Communication Skills	2 ; 2 ; 0	Admission
COMP 131	Computer Skills	2 ; 0 ; 4	Admission
Total Credits & Contact Hours:		18 ; 22 ; 8	

Cr: Credit Hours

Lc: Lecture Hours;

Tr: Tutorial Hours;

Lb: Laboratory Hours

*: General English Language course is on annual basis.

Table 2-2: Biomedical Engineering Curriculum - Second Year – Freshman

1 st Semester			
Course #	Course Title	Cr & Cont Hrs Cr ; Lc ; Tr/Lb	Pre- Requisite
HIST 281	History and Civilization of Kingdom	2 ; 2 ; 0	None
HUMN 201	Library Skills	1 ; 0 ; 2	None
ENGL 211	English Composition	3 ; 3 ; 0	None
CHEM 221	General Chemistry	3 ; 2 ; 2	None
MATH 261	Calculus I	4 ; 4 ; 0	None
PHYS 271	Physics I	4 ; 3 ; 2	None
ENG 251	Introduction to Engineering	1 ; 0 ; 2	None
Total Credits & Contact Hours:		18 ; 14 ; 8	
2 nd Semester			
Course #	Course Title	Cr & Cont Hrs Cr ; Lc ; Tr/Lb	Pre- Requisite
ISLM 282	Islamic Ethics and Values	2 ; 2 ; 0	None
MATH 262	Calculus II	4 ; 4 ; 0	MATH 261
PHYS 272	Physics II	4 ; 3 ; 2	PHYS 271
COMP 212	Computer Programming	2 ; 1 ; 2	None
ENG 222	Engineering Drawings	3 ; 1 ; 4	None
ENG 232	Statics	3 ; 3 ; 0	PHYS 271
Total Credits & Contact Hours:		18 ; 14 ; 8	

Cr: Credit Hours

Lc: Lecture Hours;

Tr: Tutorial Hours;

Lb: Laboratory Hours

Table 2-3: Biomedical Engineering Curriculum - Third Year – Sophomore

1st Semester			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-Requisite
BUS 381	Entrepreneurship	2 ; 2 ; 0	None
HUMN 301	Oral Communication & Public Speaking	1 ; 0 ; 2	None
MATH 331	Differential Equations	3 ; 2 ; 2	MATH 262
ENG 311	Dynamics	2 ; 2 ; 0	ENG 232
BIOL 341	Biology for Engineers	3 ; 2 ; 2	CHEM 221
ENG 331	Electrical Circuits	3 ; 2 ; 2	PHYS 272
COMP 361	Advanced Computer Programming	2 ; 1 ; 2	COMP 212
Total Credits & Contact Hours:		16 ; 11 ; 10	
2nd Semester			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-requisite
MATH 302	Linear Algebra	3 ; 2 ; 2	MATH 262
BIOL 302	Physiology & Anatomy for Engineers	3 ; 2 ; 2	BIOL 341
BIOL 342	Biochemistry and Molecular Biology	2 ; 1 ; 2	CHEM 221
ENG 322	Electronic Devices & Circuits	3 ; 2 ; 2	ENG 331
ENG 352	Thermodynamics	3 ; 3 ; 0	ENG 311
BIOEN 312	Foundation of Biomechanics	2 ; 1 ; 2	BIOL 341
Total Credits & Contact Hours:		16; 11 ; 10	
1st Summer Training – One Month			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-Requisite
BIOEN 333	Summer Training I	0 ; 0 ; 0	Dpt Consent

Cr: Credit Hours

Lc: Lecture Hours;

Tr: Tutorial Hours;

Lb: Laboratory Hours

Table 2-4: Biomedical Engineering Curriculum - Fourth Year – Junior

1 st Semester			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-Requisite
ENG 401	Technical Writing	2 ; 2 ; 0	ENGL 211
MATH 411	Probability & Statistics	3 ; 2 ; 2	None
BIOEN 441	Fluid Dynamics	2 ; 1 ; 2	ENG 352
ENG 451	Digital Design	3 ; 2 ; 2	ENG 322
BIOEN 421	Biomaterials	2 ; 2 ; 0	BIOL 341
BIOEN 431	Biomed. Electronics & Measurement	3 ; 2 ; 2	CR: BIOEN 461
BIOEN 461	Signals & Systems In BME	3 ; 2 ; 2	ENG 322
Total Credits & Contact Hours:		18 ; 13 ; 10	
2 nd Semester			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-requisite
HUMN 402	Research Methodology	1 ; 1 ; 0	HUMN 201
ENG 412	Engineering Economics	2 ; 2 ; 0	None
ENG 442	Introduction to Communication Systems & Networks	2 ; 2 ; 0	ENG 322
BIOEN 432	Biomed Instrumentation Design	3 ; 2 ; 2	BIOEN 461
BIOEN 442	Microprocessors	3 ; 2 ; 2	ENG 451
BIOEN 452	Safety & Maintenance in Healthcare	2 ; 2 ; 0	None
MATH 472	Numerical Methods	3 ; 3 ; 0	MATH 331
Total Credits & Contact Hours:		16; 14 ; 4	
2 nd Summer Training – Two Months			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-Requisite
BIOEN 444	Summer Training II	0 ; 0 ; 0	Dpt Consent

Table 2-5: Biomedical Engineering Curriculum - Fifth Year – Senior

1 st Semester			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-Requisite
HUMN 501	Professional Practice and Ethics	2 ; 2 ; 0	ENG 251
BIOEN 511	Project Management	1 ; 1 ; 0	None
BIOEN 521	Design of Medical Devices	2 ; 1 ; 2	BIOEN 432
BIOEN 531	Senior Design Project I	2 ; 0 ; 4	HUMN 402
BIOEN 541	Control Systems in BME	3 ; 2 ; 2	ENG 331
BIOEN 551	Biomedical Equipment	4 ; 3 ; 2	BIOEN 431
BIOEN 5xx	Technical Elective I*	3 ; Varies	**
Total Credits & Contact Hours:		17 ; Varies	
2 nd Semester			
Course #	Course Title	Cr Cont Hrs Cr ; Lc ; Tr/Lb	Pre-requisite
HUMN 502	Global Business Culture	2 ; 2 ; 0	None
BIOEN 532	Senior Design Project II	4 ; 0 ; 8	BIOEN 531
BIOEN 5xx	Elective II*	3 ; Varies	**
BIOEN 5xx	Elective III*	3 ; Varies	**
BIOEN 5xx	Elective IV*	3 ; Varies	**
Total Credits & Contact Hours:		15 ; Varies	

Cr: Credit Hours Lc: Lecture Hours; Tr: Tutorial Hours; Lb: Laboratory Hours

* Selection of technical electives should be done under the supervision of the student advisor.

** Specific course pre-requisite should be fulfilled.

Table 2-6: Biomedical Engineering Curriculum – Electives (All are 3 Credit Hours)

Electives (All are 3 Credit Hours)		
Course #	Course Title	Pre-Requisite
BIOEN 503	Digital System Design	Dpt Consent
BIOEN 513	Biomedical Digital Signal Processing	Dpt Consent
BIOEN 533	Digital Control Systems	Dpt Consent
BIOEN 523	Biomedical Electromagnetic	Dpt Consent
BIOEN 585	Medical Laser	Dpt Consent
BIOEN 595	Entrepreneurial Issues in Biomedical Engineering	Dpt Consent
BIOEN 506	Advanced topics in Biomedical Engineering	Dpt Consent
BIOEN 553	Biomedical Imaging Systems	Dpt Consent
BIOEN 563	Medical Image Processing & Communication	Dpt Consent
BIOEN 573	MRI	Dpt Consent
BIOEN 583	Ultrasound	Dpt Consent
BIOEN 593	X-ray and CT	Dpt Consent
-BIOEN 504	Introduction to Biomedical Optics	Dpt Consent
BIOEN 514	Bio-Optical Imaging	Dpt Consent
BIOEN 554	Software Engineering	Dpt Consent
BIOEN 564	Networks & Distributed Processing	Dpt Consent
BIOEN 594	Introduction to Safety Engineering	Dpt Consent

* Selection of technical electives should be done under the supervision of the student advisor.

** Specific course pre-requisite should be fulfilled.