

Study Plan for the B.Sc. Degree in Biomedical Engineering

First year

First semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--------------|---------------------|-----------|--------------------|
| CIS 100 | Computer skills | 3 | ---- |
| MATH 101 | Calculus I | 3 | ---- |
| PHYS 101 | General physics I | 3 | ---- |
| CHEM 101 | General chemistry I | 3 | ---- |
| Eng 111 | English Language | 3 | Passing Eng 99/--- |
| MS 100 | Military science | 3 | ---- |
| Total | | 18 | |

Second semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--------------|------------------------|-----------|------------------|
| Eng 112 | Communication skills 2 | 3 | Eng 111 |
| Arb 101 | Arabic 1 | 3 | ---- |
| Arb 103 | Arabic language lab | 1 | ---- |
| PHYS 102 | General physics II | 3 | PHYS 101 |
| PHYS 107 | General Physics lab. | 1 | ---/PHYS 102 |
| CHEM 102 | General chemistry II | 3 | CHEM 101/--- |
| CHEM 107 | General chemistry lab. | 1 | ---/CHEM 102 |
| MATH 102 | Calculus II | 3 | MATH 101/--- |
| Total | | 18 | |

Second Year

First semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--------------|------------------------------------|-----------|-----------------------|
| BIO 103 | General biology | 3 | ---/--- |
| BIO 107 | General biology practical | 1 | ---/BIO 103 |
| CS 115 | Programming in C++ language | 3 | CIS 100/--- |
| ME 101 | Engineering workshops | 2 | ---/--- |
| ME 101A | Engineering workshops Lab | 0 | ---/ME 101 |
| EE 202 | Communication skills for engineers | 2 | Completion of 90 C.H. |
| MATH 201 | Intermediate analysis | 3 | MATH 102/-- |
| MATH 203 | Ordinary differential equations | 3 | MATH 102/-- |
| Total | | 17 | |

Second semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--------------|---|-----------|----------------------|
| EE 212 | Electric circuits analysis | 3 | PHYS 102/ MATH 203 |
| EE 240 | Introduction to linear systems | 3 | CS 115, MATH 201/--- |
| ME 215 | Engineering mechanics | 3 | PHYS 101/--- |
| CHEM 217 | Organic chemistry | 3 | CHEM 102/--- |
| ME 200 | Engineering drawing A | 1 | CIS 100/--- |
| CPE 254 | Digital logic design and computer architecture (for non CPE students) | 3 | CIS 100/--- |
| Total | | 16 | |

Third Year

First semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--------------|--|-----------|------------------------|
| MED 236A | Physiology | 3 | BIO 107/--- |
| MED 236B | Physiology lab | 1 | ---/MED 236A |
| BME 321A | Analysis of biomedical signals and systems | 3 | EE 240/--- |
| EE 213 | Electric circuits lab | 1 | EE 212/--- |
| BME 311 | Medical electronics I | 3 | EE 212/--- |
| ME 343 | Fluid mechanics | 3 | PHYS 101, MATH 203/--- |
| IE 341 | Engineering economy | 2 | Math 201/--- |
| Total | | 16 | |

Second semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--------------|-------------------------------------|-----------|-----------------------|
| CHEM 262 | Biochemistry | 3 | CHEM 217, BIO 103/--- |
| CHEM 266 | Biochemistry lab | 1 | ---/CHEM 262 |
| BME 312 | Medical electronics II | 3 | BME 311/--- |
| BME 317 | Medical electronics lab. | 1 | EE 213/BME 312 |
| ChE 340 | Thermodynamics | 3 | Math 203/--- |
| BME 302 | Statistics for biomedical engineers | 3 | ---/BME 321A |
| EE 305 | Numerical methods for engineers | 3 | CS 115, MATH 203/--- |
| Total | | 17 | |

Forth Year

First semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--|--|-----------|--------------------------|
| University requirement elective course | Of student's choice | 3 | ---- |
| BME 411 | Biomedical instrumentation I | 3 | BME 312, MED 236A/--- |
| EE 440 | Control systems | 3 | BME 321A/--- |
| CPE 353 | Microprocessors systems (for non CPE students) | 3 | CPE 254/--- |
| ChE 400 | Professional ethics for engineers | 1 | Fourth year standing/--- |
| BME 421 | Digital signal processing | 3 | BME 321A/BME 302 |
| Total | | 16 | |

Second semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--|--|-----------|--|
| University requirement elective course | Of student's choice | 3 | ---- |
| EE 442 | Control systems lab | 1 | EE 440/--- |
| BME 412 | Biomedical Instrumentation II | 3 | BME 411/--- |
| BME 442A | Introduction to biomedical materials | 3 | CHEM 262, ME 215/--- |
| BME 452 | Biomedical transport phenomenon | 3 | BME 302, MED 236A, EE 305, ChE 340/--- |
| BME 418 | Biomedical instrumentation lab I | 1 | BME 411/BME 412 |
| BME 438 | Digital logic design and computer architecture lab | 1 | CPE 353/--- |
| Total | | 15 | |

Summer Semester

| Course # | Course Title | C.H. | Pre/Co Requisite |
|----------|----------------------|------|------------------------------------|
| BME 490 | Engineering training | 3 | Completion of 117 Credit hours/--- |

Fifth Year

First semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|--|-----------------------------------|-----------|------------------------------------|
| University requirement elective course | of student's choice | 3 | ---- |
| Track elective course | of student's choice | 3 | Choice dependent |
| Track elective course | of student's choice | 3 | Choice dependent |
| BME 531A | Physiological modeling | 3 | BME 452/--- |
| BME 517 | Biomedical instrumentation lab II | 1 | BME 418/--- |
| BME 591 | Graduation project I | 1 | Completion of 114 C.H, BME 412/--- |
| Total | | 14 | |

Second semester

| Course # | Course title | C.H. | Pre/Co Requisite |
|-----------------------|-----------------------------------|----------|------------------|
| Track elective course | of student's choice | 3 | Choice dependent |
| Track elective course | of student's choice | 3 | Choice dependent |
| BME 592 | Graduation project II | 3 | BME 591/--- |
| BME 594 | Seminar in biomedical engineering | 0 | ---/BME 591 |
| Total | | 9 | |

Distribution of credit hours over academic year and semester standing

| Year standing | First semester | Second semester | Summer semester | Total |
|---------------|----------------|-----------------|-----------------|------------|
| First | 18 | 18 | 0 | 36 |
| Second | 17 | 16 | 0 | 33 |
| Third | 16 | 17 | 0 | 33 |
| Forth | 16 | 15 | 3 | 34 |
| Fifth | 14 | 9 | 0 | 23 |
| Total | | | | 159 |

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