

**Bachelor of Science in Biomedical Engineering
Study Plan (Fall Start) 2022-2023
First Year (Freshman)**

Total Credit Hours: 136

Semester 1

Code	Title	Cr.	Prerequisite
ARL101(A)	Comm. Skills in Arabic Lang.	3	Nil
ECS200	Intro. to Engr. & Computing	3	Nil
MTT102	Calculus I	3	Math Placement Test or MTT101 (C grade)
STT100	General Statistics	3	Nil
ISL100(A)	Islamic Culture	3	Nil
FWS100(E)	Academic Skills for Success	3	Nil

Total Credit Hours 18

Semester 2

Code	Title	Cr.	Prerequisite
BIO 205	General Biology	3	(Co) ENG 102/ ENG 200
BIO 205L	General Biology Lab	1	BIO 205 (Co-req)
ENG200	English II	3	IELTS average score of 6 or EMSAT average score of 1400 or passing grade in ENG 102 (FWS100(E)/ USS001 as co-req if placed in ENG200)
PHY102	Physics & Engr. Applications I	3	MTT102
PHY102L	Physics & Engr. Applications I Lab	1	MTT102, PHY102(co)
MTT200	Calculus II	3	MTT102
COE101	Introductory Artificial Intelligence	3	STT100

Total Credit Hours 17

Second Year (Sophomore)

Semester 3

Code	Title	Cr.	Prerequisite
FWS205	UAE and GCC Society	3	ENG102 (P) & FWS100 (E)/ USS001 as pre-requisite FWS100(E)/ USS001 as co-requisite if students enter to ENG200 directly
EEN210	Digital Circuits	3	ECS200
CSC201	Computer Programming I	3	MTT101 or higher
CHE205	General Chemistry I	3	ENG200/ENG102(co)
CHE201L	Chemistry lab	1	CHE205(co)
BME380	Human Biology I	3	CHE 205, BIO 205

Total Credit Hours 16

Semester 4

Code	Title	Cr.	Prerequisite
BME301	Applied Molecular & Cellular Biology for Engineers	3	BIO205
BME381	Human Biology II	3	BME380
CEN201	Electric Circuits I	3	ECS200 or PHY201
COE202	Engineering Ethics, Economy, and Law	3	ENG200, MTT102
MTT205	Differential Equations	3	MTT200, MTT204(co)
MTT204	Introduction to Linear Algebra	3	MTT200

Total Credit Hours 18

Third Year (Junior)

Semester 5

Code	Title	Cr.	Prerequisite
BME320	Biosystems and Signals	3	MTT 205, CEN201
BME401	Introduction to Biotechnology	3	BME301
BME325	IoT for Bioengineers: Foundation& Design	3	CSC 201, EEN210
FWS305	Tech. Comm. for Workplace	3	ENG 200 + min 45 Credits
CEN304	Electronic Circuits and Devices	3	CEN 201

Total Credit Hours 15

Semester 6

Code	Title	Cr.	Prerequisite
BME330	Physiological Modeling	3	BME380, BME320
CEN324	Digital and Analog Electronics	3	CEN304
BME310	Biomedical Instrumentation	3	CEN324 (Co), BME380
CEN330	Probability and Stochastic Processes	3	MTT200, STT100
BME425	IoT for Bioengineers: Applications & Security	3	BME325
BME312	Medical Device Design	3	BME380

Total Credit Hours 18

Summer Semester

Code	Title	Cr.	Prerequisite
BME399i	Internship in Biomedical Engineering I	2	90 Credit Hours

Total Credit Hours 2

Fourth Year (Senior)

Winter Semester

Code	Title	Cr.	Prerequisite
BME399ii	Internship in Biomedical Engineering II	1	BME399i

Total Credit Hours 1

Semester 8

Code	Title	Cr.	Prerequisite
EEN365	Control Systems	3	MTT204, BME320
CEN454	Computer Vision and Machine Learning	3	BME320
BME492	Biomedical Engineering Design Project II	2	BME491
FWS310	Fund. of Innovation & Entrepreneurship	3	ENG200 + min 60 credits
ME2	Major Elective II	3	

Total Credit Hours 14

Semester 7

Code	Title	Cr.	Prerequisite
BME464	Digital Bio-Signal Processing	3	BME320
BME413	Biomedical Sensors and Transducers	3	BME310
BME441	Medical Imaging Systems	3	BME320
ME1	Major Elective I	3	-
OE	Open Elective	3	-
BME491	Biomedical Engineering Design Project I	1	Senior level, BME312, BME425
BME310L	Biomedical Instrumentation Lab	1	BME310

Total Credit Hours 17