ADAMAS UNIVERSITY

SCHOOL OF ENGINEERING & TECHNOLOGY

Department of Biomedical Engineering

SoET 2.0

(Engineering +)

Course Structure

B. Tech in Biomedical Engineering (BME)

(2020-21)

ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPT. OF BME
FIRST YEAR

S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
			SEMESTER I					
1	Theory	**MTH11501**	Engineering Mathematics-I	3	1	0	4	4
2	Theory	**PHY11201**	Applied Science	3	0	0	3	3
3	Theory	**CSE11001 / GEE11001**	Introduction to Programming / Electrical and Electronics Technology	3	0	0	3	3
4	Theory	**ENG11053**	HSSM –I (English Communication- I)	3	0	0	3	3
5	Theory	**BIT11003**	Life Sciences	3	0	0	3	3
6	Practical	**PHY12202**	Applied Science Lab	0	0	3	3	2
7	Practical	**CSE12002 / GEE12002**	Programming Lab / Electrical and Electronics Technology Lab	0	0	3	3	2
8	Practical	**CEE12001/ MEE12001**	Engineering Drawing and CAD/Engineering Workshop	0	0	3	3	2
9	Practical	**ENG11043**	Communication and Collaboration Skill -I	0	0	2	2	1
10	Project	**GEE14003**	Capstone Project-I	0	0	2	2	1
11	Theory	**DGS11001**	Design Thinking	2	0	0	2	2
			Total	**17**	**1**	**13**	**31**	**26**

S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
			SEMESTER II					
1.	Theory	**MTH11502**	Engineering Mathematics– II	3	1	0	4	4
2.	Theory	**GEE11001 / CSE11001**	Electrical and Electronics Technology/ Introduction to Programming	3	0	0	3	3
3.	Theory	**MEE11002**	Engineering Mechanics	3	1	0	4	4
4.	Theory	**EVS11107**	Environmental Science	3	0	0	3	3
5.	Practical	**GEE12002/ CSE12002**	Electrical and Electronics Technology Lab/ Programming Lab	0	0	3	3	2
6.	Practical	**MEE12001/ CEE12001**	Engineering Workshop/Engineering Drawing and CAD	0	0	3	3	2
7.	Practical	**ENG12044**	Communication and Collaboration Skill -II	0	0	2	2	1
8.	Project	**GEE14004**	Capstone Project-II	0	0	2	2	1
9.	Project	**IDP14001**	Interdisciplinary Project	0	0	5	5	3
			Total	**12**	**2**	**15**	**29**	**23**

Total Credits (First Year): 49

SECOND YEAR

SEMESTER III

S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
1	Theory	MTH11526	Engineering Mathematics– III (Transform Calculus & Special functions)	3	0	0	3	3
2	Theory	ECO11505	HSSM –IV (Economics for Engineers)	3	0	0	3	3
3	Theory	BME11001	Prof. Core- I (Analog and Digital Electronics)	3	0	0	3	3
4	Theory	BME11002	Prof. Core- II (Anatomy & Physiology)	3	0	0	3	3
5	Theory	BME11003	Prof. Core- III (Signals and Network Analysis)	3	0	0	3	3
6	Practical	BME12004	Prof. Core Lab (MATLAB & Simulink)	0	0	2	3	2
7	Practical	BME12005	Prof. Core-I Lab (Signals and Network Analysis Lab)	0	0	3	3	2
8	Practical	BME12006	Prof. Core-III Lab (Electronics Lab)	0	0	3	3	2
9	Project	GEE14005	Capstone Project-III	0	0	2	2	1
10	Internship	SOC14100	Community Service#	--	--	-	--	1
11	Theory	EIC11001	Venture Ideation	2	0	0	2	2
			Total	**17**	**0**	**10**	**28**	**25**

 # CS Activity will be taken up during the summer break after 2nd semester, and will be evaluated in the 3rd semester.

SEMESTER IV

S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
1	Theory	MTH11527	Engineering Mathematics– IV (Probability, Statistics and Numerical Methods)	3	0	0	3	3
2	Theory		Prof. Core- IV (Basic Clinical Science)	3	0	0	3	3
3	Theory		Prof. Core- V (Biomedical Signal acquisition & processing)	3	0	0	3	3
4	Theory		Prof. Core- VI (Microprocessors and Microcontrollers)	3	0	0	3	3
5	Theory		Prof. Core- VII (Biomaterials)	3	0	0	3	3
6	Theory	PSG11021	Human Values and Professional Ethics	2	0	0	2	2
8	Practical		Prof. Core- V Lab (Digital Signal Processing Lab)	0	0	3	3	2
9	Practical		Prof. Core- VI Lab (Microprocessors and microcontrollers Lab)	0	0	3	3	2
10	Project	GEE14006	Capstone Project -IV	0	0	2	2	1
			Total	**17**	**0**	**8**	**25**	**22**

Total Credits (Second Year):   47

THIRD YEAR

			SEMESTER V					
S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
1	Theory		Prof. Core- VIII (Biomechanics)	3	0	0	3	3
2	Theory		Prof. Core- IX (Digital System Design)	3	0	0	3	3
3	Theory		Prof. Core- X (Biomedical Instrumentation – I)	3	0	0	3	3
4	Theory		Prof. Core- XI (Medical Imaging Systems)	3	0	0	3	3
5	Theory		Prof. Elective- I (Bio-fluid mechanics/Design of Medical Devices & Implants)	3	0	0	3	3
7	Practical		Prof. Core- VIII Lab (Biomechanics Lab)	0	0	3	3	2
6	Practical		Prof. Core- IX (Digital System Lab)	0	0	3	3	2
7	Practical		Prof. Core- X Lab (Biomedical Instrumentation – I Lab)	0	0	3	3	2
8	Project	GEE14007	Capstone Project -V	0	0	2	2	1
			Total	**15**	**0**	**11**	**26**	**22**

			SEMESTER VI					
S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
1	Theory		Prof. Core- XII (Measurements and Control Systems)	3	0	0	3	3
2	Theory		Prof. Core- XIII (Digital Image Processing)	3	0	0	3	3
3	Theory		Prof. Elective- II (Rehabcare Engineering/ Stem Cell Biotechnology)	3	0	0	3	3
4	Theory		Prof. Elective- III (Biomedical Instrumentation-II/Microfluidics and BioMEMS)	3	0	0	3	3
5	Theory		Open Elective- I (Data Structures and Algorithms/FEA-CFD)	3	0	0	3	3
6	Practical		Prof. Core- XII Lab (Measurements and Control Systems)	0	0	3	3	2
7	Practical		Prof. Core- XIII Lab (Digital Image Processing Lab)	0	0	3	3	2
8	Seminar		Technical Seminar	0	0	2	2	1
			Total	**15**	**0**	**8**	**23**	**20**

Total Credits (Third Year): 42

FOURTH YEAR

			SEMESTER VII					
S. No	Type	Course Code	Course Title	L	T	P	Contact Hrs/wk	Credits
1	Theory	MGT11402	HSSM –V (Industrial Management)	3	0	0	3	3
2	Theory		Prof. Elective- IV (Telemedicine/Biofabrication)	3	0	0	3	3
3	Theory		Prof. Elective- V (Modelling and simulation of biomedical systems/ Tissue Engineering)	3	0	0	3	3
4	Theory		Open Elective- II (Introduction to Python)	3	0	0	3	3
5	Theory		Open Elective- III (AI-ML/Robotics)	3	0	0	3	3
6	Internship/Training		#Summer Internship	--	--	--	--	2
7	Project		Minor Project	0	0	6	6	3
			Total	**15**	**0**	**6**	**21**	**20**

 # Summer Internship for minimum 30 days will be taken at the end of 6th semester, and will be evaluated in the 7th semester.

			Semester-VIII					
S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Project	ECE14042/ ECE14043/ ECE14044	Industry Work Experience / SIRE* / Major Project	0	0	6	6	4
2.	Viva	ECE15045	Comprehensive Viva Voce		------		------	2
			Total	**0**	**0**	**6**	**6**	**6**

*SIRE: Scientific Investigation & Research Experience

Total Credits (Fourth Year): 25

Total Credits (Over four years): 49+47+42+26 = 164