ADAMAS UNIVERSITY

SCHOOL OF ENGINEERING AND TECHNOLOGY

B. Tech (Bio-Medical Engineering)

Course Structure

Academic Year 2026 - 27

ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING AND TECHNOLOGY
B. Tech (Bio-Medical Engineering)
Course Structure

FIRST YEAR

SEMESTER I								
S. No	**Type**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory (BSC)	MTH11501	Engineering Mathematics-I	3	1	0	4	4
2	Theory (BSC)	PHY11201	Applied Science	2	0	0	2	2
3	Theory (ESC)	MEE11002	Engineering Mechanics	2	1	0	3	3
		GEE11001	Electrical and Electronics Technology	2	1	0	3	3
4	Theory (HSSM)	ENG11053	English Communication	1	0	2	3	2
	Theory	GEE11012	Disruptive Technology Innovations	1	0	2	3	
5	Theory (BSC)	BIT11003	Life Sciences	2	0	0	2	2
6	Theory (Mandatory)	DGS11001	Design Thinking	1	0	2	3	2
	Theory (ESC)	CSE11001	Introduction to Programming	2	0	0	2	2
7	Practical (BSC)	PHY12202	Applied Science Lab	0	0	4	4	2
8	Practical (ESC)	CSE12002	Programming Lab	0	0	4	4	2
		GEE12002	Electrical and Electronics Technology Lab	0	0	2	2	1
9	Practical (ESC)	CEE12001	Engineering Drawing and CAD	0	0	4	4	2
		MEE12001	Engineering Workshop	0	0	4	4	
Total				11/12	2	16/18		

SEMESTER II								
S. No	**Type**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1.	Theory (BSC)	MTH11502	Engineering Mathematics– II	3	1	0	4	4
2.	Theory (ESC)	MEE11002	Engineering Mechanics	2	1	0	3	3
	Theory (ESC)	GEE11001	Electrical and Electronics Technology	2	1	0	3	3
3.	Theory (BSC)	EVS11107	Environmental Studies	2	0	2	4	3
4.	Theory (Mandatory)	DGS11001	Design Thinking	1	0	2	3	2
	Theory (ESC)	CSE11001	Introduction to Programming	2	0	0	2	2
5.	Theory	GEE11012	Disruptive Technology Innovations	1	0	2	3	2
	Theory (HSSM)	ENG11053	English Communication	1	0	2	3	
6.	Theory (Mandatory)	EIC11001	Venture Ideation	2	0	0	2	2
7		CLL	TBD	0	0	2	2	1
8.	Practical (ESC)	GEE12002	Electrical and Electronics Technology Lab	0	0	2	2	1
		CSE12002	Programming Lab	0	0	4	4	2
9	Practical (ESC)	MEE12001	Engineering Workshop	0	0	4	4	2
		CEE12001	Engineering Drawing and CAD	0	0	4	4	
			Total	11/12	2	12	25/23	

SEMESTER III

S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/wk	Credits
1	Theory (BSC)	MTH11526	Engineering Mathematics – III (Transform Calculus & Special functions)	3	1	0	3	4
2	Theory (PCC)	BME11001	PC- I (Analog and Digital Electronics)	3	1	0	3	4
3	Theory (PCC)	BME11002	PC- II (Anatomy and Physiology)	3	0	0	3	3
4	Theory (PCC	BME11003	Prof. Core – III (Signals and Network Analysis)	3	1	0	4	4
5	Theory (PCC	BME11004	PC- IV Biomedical sensors and Transducers	3	0	0	3	3
6	Practical (PCC)	BME12005	PC-III Lab (Signals and Network Analysis Lab)	0	0	2	2	1
7	Practical (PCC)	BME12006	PC-I Lab (Analog and Digital Electronics Lab)	0	0	2	2	1
8	Practical (PCC)	BME12007	PC-II Lab Basic Anatomy and Physiology Lab	0	0	2	2	1
9	Practical (Mandatory)	IDP14001	Interdisciplinary Project	0	0	0	6	3
10	Practical (Mandatory)	SOC14100	Community Service	0	0	0	0	1
11		CLL	TBD	0	0	2	2	1

Total				15	3	6	26	26
SEMESTER IV								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory (PCC)	**BME11008**	**PC- V (Basic Clinical Science)**	**3**	**0**	**0**	**3**	**3**
2	Theory (PCC)	**BME11009**	**PC- VI (Biomedical Signal acquisition and processing)**	**3**	**1**	**0**	**3**	**4**
3	Theory (PCC)	**BME11010**	**PC- VII (Microcontroller and Interfacing)**	**3**	**1**	**0**	**4**	**4**
4	Theory (PCC	**BME11011**	**PC- VIII (Biomaterials)**	**3**	**0**	**0**	**3**	**3**
5	Theory (PCC	**BME11012**	**PC- IX Medical Imaging**	**3**	**0**	**0**	**3**	**3**
6	Practical (PCC)	**PSG11021**	**Human Values and Professional Ethics**	**2**	**0**	**0**	**2**	**2**
7	Practical (PCC)	**BME12013**	**PC- VI Lab (Biomedical Signal Processing Lab)**	**0**	**0**	**2**	**2**	**1**
8	Practical (PCC)	**BME12014**	**PC- VII Lab (Microcontroller and Interfacing Lab)**	**0**	**0**	**2**	**2**	**1**
9	Practical (PCC)	**BME12015**	**PC-V Basic Clinical Science Lab**	**0**	**0**	**2**	**2**	**1**
10		CLL	TBD	0	0	2	2	1
Total				**17**	**2**	**6**	**26**	**23**

SEMESTER V								
S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/wk	Credits
1	Theory (PCC)	BME11016	PC- XI (Biomechanics)	3	1	0	4	4
2	Theory (PCC)	BME11017	PC- XII Troubleshooting and Quality Control of Medical Devices	3	0	0	3	3
3	Theory (PCC)	BME11018	PC- X (Biomedical Instrumentation – I)	3	0	0	3	3
4	Theory (PEC)	BME11019 BME11020 ECE11017	PE- I 1. Modelling and Simulations of Biomedical Systems 2. Digital System Design 3. Foundation on Artificial Intelligence and Machine Learning	3	0	0	3	3
5	Theory (PEC)	BME11021 BME11022 BME11023	PE – II 1.Bio-fluid mechanics 2.Bioinformatics 3.Hospital management system	3	0	0	3	3
6	Practical (PCC)	BME12024	PC- X Lab (Biomedical Instrumentation – I Lab)	0	0	2	2	1
7	Practical (PCC)	BME12025	PC- IX Lab (Biomechanics Lab)	0	0	2	2	1
8	Practical (PEC)	BME12026 BME12027 ECE12046	PE-I Lab Digital System Design Lab Modelling and Simulations of Biomedical Systems Lab Artificial Intelligence and Machine Learning Lab	0	0	2	2	1
9	Seminar (P/S/I)	BME15033	TECHNICAL SEMINAR	0	0	2	2	1
10		CLL	TBD	0	0	2	2	1
Total				15	2	8	25	21

SEMESTER VI								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory (PCC)	**BME12028**	**PC- XII (Biological Control Systems)**	**3**	**1**	**0**	**4**	**4**
2	Theory (PCC)	**BME11029**	**PC- XIII (Digital Image Processing)**	**3**	**1**	**0**	**4**	**4**
3	Theory (HSSM)	**ECO11505**	**Economics for Engineers**	**3**	**0**	**0**	**3**	**3**
4	Theory (PEC)	**BME11030** **BME11031** **BME11032**	**Prof. Elective – III** **1. Internet of Medical Things (IoMT)** **2.Drug delivery system** **3. Laser and fiber optics in medicine**	**3**	**0**	**0**	**3**	**3**
5	Theory (PEC)	**BME11033** **BME11034** **BME11035**	**Prof. Elective – IV** **1. Rehabcare Engineering** **2. Biofabrication** **3. BioMEMs and Biomicrofluidics**	**3**	**0**	**0**	**3**	**3**
6	Theory (OEC)	**ECE11034** **CEE11029** **BME11036**	**Open Elective- I** **Internet of Things** **Disaster Management** **Radiotherapy and Nuclear Medicine**	**3**	**0**	**0**	**3**	**3**
7	Practical (PCC)	**BME12037**	**PC- XII Lab (Biological Control Systems Lab)**	**0**	**0**	**2**	**2**	**1**
8	Practical (PCC)	BME12038	**PC- XIII Lab (Digital Image Processing Lab)**	**0**	**0**	**2**	**2**	**1**
9	Practical (PEC)	BME12039 BME12040	**Prof. Elective – Lab** **1. Internet of Medical Things Lab**	**0**	**0**	**2**	**2**	**1**

		BME12041	**2. Drug delivery system Lab 3. Laser and fiber optics in medicine Lab**					
10		CLL	TBD	0	0	2	2	1
Total				**18**	**2**	**6**	**26**	**24**

SEMESTER VII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory (HSSM)	MGT11402	Industrial Management	3	0	0	3	3
2	Theory (PCC)	BME11042	PC – XIV (Biomedical Instrumentation-II)	3	1	0	4	4
3	Theory (PEC)	 BME11043 BME11044 BME11045	Prof. Elective- V 1. Telemedicine 2. Tissue Engineering & Design of Implants 3. Artificial Intelligence and Machine Learning Applications in Biomedical Engineering	3	0	0	3	3
4	Theory (OEC)	 BME11047 BME11049	Open Elective – II Biomedical Device Design Biomedical Nano Technology	3	0	0	3	3
5	Theory (OEC)	 ECE11037 ECE11038	Open Elective – III Mobile Communication Optical fiber Communication	3	0	0	3	3
6	Practical (PCC)	BME12050	PC Lab – XIV (Biomedical Instrumentation-II Lab)	0	0	2	2	1

7	Practical (PEC)	BME12051 BME12052 BME12053	Prof. Elective Lab 1. Telemedicine Lab 2. Tissue Engineering and Design of Implants Lab 3. Artificial Intelligence and Machine Learning Applications in Biomedical Engineering Lab	0	0	2	2	1
8	Practical (PCC)	BME14035	Summer Internship	0	0	0	2	2
9	Practical (PCC)	BME14036	Minor Project	0	0	6	6	3
10		CLL	TBD	0	0	2	2	1
Total				15	1	10	28	24

SEMESTER VIII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Practical (PCC)	BME14037	Industry Work Experience / SIRE* / Major Project	0	0	12	12	6
2	Practical (PCC)	BME14038	Comprehensive Viva Voce	0	0	0	0	2
Total				0	0	12	12	8

***SIRE: Scientific Investigation & Research Experience**

Total Credits (4th Year) = 31 Credits

Total Credits Distribution Semester wise: (B. Tech)

Semester	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**Total Credits**
Credits	**20**	**21**	**26**	**23**	**21**	**24**	**24**	**08**	**167**