

**13. Courses of Study and Scheme of Assessment
BE BIOMEDICAL ENGINEERING**

(2019 Regulations)

Course Code	Course Title	Periods / week			Maximum Marks				
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER VII									
19D701	Machine Learning	3	0	0	3	50	50	100	PC
19D702	Biofluidics and Thermodynamics	3	0	0	3	50	50	100	PC
19D___	Professional Elective III	3	0	0	3	50	50	100	PE
19D___	Professional Elective IV	3	0	0	3	50	50	100	PE
19___	Open Elective II	3	0	0	3	50	50	100	OE
19D710	Bio Modeling and Simulation Laboratory	0	0	2	1	50	50	100	PC
19D711	Data Analytics Laboratory	0	0	2	1	50	50	100	PC
19D720	Project Work I	0	0	4	2	50	50	100	EEC
Total 23 periods		15	0	8	19	400	400	800	
SEMESTER VIII									
19D___	Professional Elective V	3	0	0	3	50	50	100	PE
19D___	Professional Elective VI	3	0	0	3	50	50	100	PE
19D820	Project Work II	0	0	8	4	50	50	100	EEC
Total 14 periods		6	0	8	10	150	150	300	

CA Continuous Assessment
FE Final Examination

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PROFESSIONAL ELECTIVES

Device and Application Development

- 19D001 Electromagnetic Fields in Biology and Medicine
- 19D002 Medical Optics
- 19D003 Ultrasound in Medicine
- 19D004 Magnetic Resonance Imaging
- 19D005 Embedded System Design
- 19D006 Advanced Medical Equipments
- 19D007 Hospital Systems Management

Biosystems and Biological Engineering

- 19D008 Engineering of Nanomaterials
- 19D009 Drug Delivery Systems
- 19D010 Bioanalytical Techniques and Characterization
- 19D011 Cell Biology and Tissue Engineering
- 19D012 Modeling of Physiological Systems
- 19D013 Computational Biology and Bioinformatics

Healthcare Technologies

- 19D014 Wearable Technologies
- 19D015 Telemedicine and Healthcare Delivery
- 19D016 Mobile Application Development
- 19D017 Medical Robotics
- 19D018 Rehabilitation Engineering
- 19D019 Occupational Biomechanics and Ergonomics

Computational Methods for Biomedical Engineering

- 19D020 Pattern Recognition and Neural Networks
- 19D021 Advanced Digital Signal Processing
- 19D022 Database Management Systems
- 19D023 Artificial Intelligence
- 19D024 Advanced Machine Learning
- 19D025 Security for Medical Devices
- 19D026 Computer Aided Drug Design

LANGUAGE ELECTIVES

- 19G001 Communication Skills for Engineers
- 19G002 German- Level A1.1
- 19G003 French Language Level 1
- 19G004 Basic Japanese

ONE-CREDIT COURSES

BIOMEDICAL ENGINEERING

- 19DF01 Radiation Protection in Medical Technology
- 19DF02 Radiation Oncology Physics
- 19DF03 Respiratory Physiology
- 19DF04 Speech Production and Processing
- 19DF05 Medical Textiles
- 19DF06 Medical Regulatory Standards
- 19DF07 Data Mining in Healthcare

19DF08 Internet of Things for Healthcare
 19DF09 Biopolymers in Biomedical Applications

ENGLISH

19GF01 Interpersonal and Organizational Communication
 19GF02 Human Values Through Literature

HUMANITIES

19OFA1 Export – Import Practices
 19OFA2 Insurance - Concepts and Practices
 19OFA3 Public Finance
 19OFA4 Security Analysis and Portfolio Management

Summary of Credit Distribution

BE BIOMEDICAL ENGINEERING										
S. No	Course Category	Credits Per Semester								Total Credits
		1	2	3	4	5	6	7	8	
1	HS	3	2	3	0	0	0	0	0	8
2	BS	10	10	4	4	0	0	0	0	28
3	ES	8	7	8	2	0	0	0	0	25
4	PC	0	0	9	17	18	14	8	0	66
5	PE	0	0	0	0	3	3	6	6	18
6	OE	0	0	0	0	0	3	3	0	6
7	EEC	0	0+2	0	1	2	3	2	4	14
8	MC	-	-	-	-	-	-	-	-	-
	TOTAL	21	19+2	24	24	23	23	19	10	165

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