

Structure of 2-year 4-semester M. Tech. course in Biomedical Instrumentation					
		Marks	L	P	Credits
SEMESTER - 1					
MTBMI-11	Mathematical and statistical methods in Instrumentation	50	3	0	3
MTBMI-12	Essentials of Anatomy and Physiology (for non medical students) Applied Electronics (for medical doctors)	50	3	0	3
MTBMI-13	Automation and control in Instrumentation	50	3	0	3
MTBMI-14	Optics and imaging techniques	50	3	0	3
MTBMI-15	Sensors & Transducers for biomedical instrumentation	50	3	0	3
MTBMI-16	Biochemistry & Biomaterials	50	3	0	3
PRACTICAL					
MTBMI P-I	Applied Electronics, sensors and transducers (for Doctors) Mini project based on analog electronic circuits (for non-doctors)	50	0	6	4
MTBMI P-II	Digital Electronics and microprocessor (for doctors) Mini project based logic microprocessor (for non-doctors)	50	0	6	4
		400	18	12	26
SEMISTER II					
MTBMI-21	Digital image processing	50	3	0	3
MTBMI-22	Advanced Signal Processing	50	3	0	3
MTBMI-23	Fundamentals of Lasers and Fiber optics	50	3	0	3
MTBMI-24	Controller and Communication protocols for Instrumentation	50	3	0	3
MTBMI-25	Analytical instruments	50	3	0	3
MTBMI-26	Clinical Laboratory Instruments	50	3	0	3
PRACTICAL					
MTBMI P-III	Optical instruments and lasers	50	0	6	4
MTBMI P-IV	Clinical Laboratory Instruments	50	0	6	4
		400	18	12	26
SEMESTER - III					
MTBMI-31	Medical imaging systems (X-ray, USG, CT, MRI)	50	3	0	3
MTBMI-32	Optical and laser based instrumentation for biomedical applications	50	3	0	3
MTBMI-33	Cardio vascular and Pulmonary Instruments	50	3	0	3

MTBMI-34	Radioisotopes and Nuclear Medicine	50	3	0	3
MTBMI-35	Urological and Renal Instrumentation	50	3	0	3
	PRACTICAL				
MTBMI P-V	Hospital Training	50	0	6	4
MTBMI P-VI	Patient Monitoring and Life Support System	50	0	6	4
MTBMI PJ-I	Project –preliminary	50	0	0	5
		400	15	12	28
SEMESTER IV					
MTBMI-41	1. Medical Ethics and good laboratory practice 2. Hospital management, Telemetry and Telemedicine	50	3	0	3
MTBMI-42	Elective Paper (Select any One) 1. Ophthalmological Instruments and advanced microscopy 2. Specifications and procurement of Biomedical Equipments 3. Pollution Control and Hospital waste management 4. Implants and artificial organs 5. Forensic science	50	3	0	3
MTBMI-43	Comprehensive VIVA	50	3	0	4
MTBMI PJ-II	Project Final: Thesis presentation	150	0	0	10
		300	6	0	20
	Total	1500			100