MTech Course Curriculum [2024-26 batch]

1st Semester

Core courses (10 Credits)

Code	Course Title	L	T	P	C	Slot	Instructor(s)	
BB 600	Introduction to Biomedical Engineering	3	0	0	6	–	HV	Offered
BB 653	Experimental techniques in biomedical engineering	1	0	2	4	–	HV(*),DPaul, AKun, NT, DA	Offered
BB 899	Communication skills (PP/NP (*Credits over and above the required minimum of 160) (Guidelines)	1	2	0	6*	–	PVB(2w)+AKun(1w) + RPatkar(2w) + SNair(2w) + SSen(2w)+ NT (2w) + SS (1w) + PT (1w) + DA (1w)	Offered

Soft Core Courses (Compulsory courses based on background) (6 credits)

Code	Course Title	L	T	P	C	Slot	Instructor(s)	
For Bio. background students								
BB 619	Mathematics for biologists	2	0	1	6	–	SK	Offered
For Engg. background students								
BB 603	Physiology for engineers	3	0	0	6	–	NT*, VPS	Offered

Department Electives (18-24 credits to be completed over the first semester: extra credits may be tagged as additional learning)

FH: runs in First Half of the semester, SH: runs in Second Half of the semester

Note: M. Tech. students can take 3-4 half-semester courses in FH (9-12 credits) and 3-4 half-semester courses in SH (9-12 credits).

Code	Course Title	L	T	P	C	Slot	Instructor(s)	
BB 617	Biophysical Chemistry	3	0	0	6	–	Ak* + SMaji	Offered
BB 633 (FH)	Movement neuroscience	3	0	0	3	–	NK	Offered
BB 661 (FH)	Biopotentials I: Cellular Signals	3	0	0	3	–	RManch	Offered
BB 663 (FH)	Medical imaging physics	3	0	0	3	–	DPaul	Offered
BB 665 (FH)	Biomaterials	3	0	0	3	–	PT	Offered
BB 669 (FH)	Signals & systems in biomedical engineering	3	0	0	3	–	Akun	Offered
BB 601 (SH)	Introduction to bio-nanotechnology	3	0	0	3	–	RS	Offered
BM 659 (SH)	Elements of circuits and instrumentation	3	0	0	3	–	AKun	Offered
BB 677 (SH)	Introduction to Biomechanics	3	0	0	3	–	SSen	Not Offered
BB 679 (SH)	Drug delivery	3	0	0	3	–	PT	Offered
BB 805	Experimental Techniques – II	3	0	0	6	–	AK* + SS + SK	Offered

2nd Semester

Core Courses (10 Credits)

Code	Course Title	L	T	P	C	Slot	Instructor(s)	
BB 621	Biostatistics	3	0	0	6		AKun	Offered
BB 694	Credit seminar#	0	0	0	4	–	DPaul	Offered

Department Electives (24-18 credits to be completed over the second semester: extra credits may be tagged as additional learning)

FH: runs in First Half of the semester, SH: runs in Second Half of the semester

Code	Course Title	L	T	P	C	Slot	Instructor(s)	
BB 427	Introduction to Neural Engineering	3	0	0	6		NT	Offered
BB 606	Cellular electricity: physics & modeling	3	0	0	6		RM	Offered
BB 610	Biomedical microsystems	3	0	0	6		RS	Offered
BB 612	Cell mechanics and mechanobiology	3	0	0	6		SSen	Offered
BB 616	Cellular and tissue engineering	3	0	0	6		PT	Offered
BB 618	Medical instrumentation	3	0	0	6		SKalva	Offered
BB 624	Microfluidics: physics and applications	3	0	0	6		DPaul	Offered
BB 625	Motor control in health and disease	3	0	0	6		NK	Offered
BB 626	Modeling Biological Systems and Processes	3	0	0	6		RP	Offered
BB 655	Introduction to biomedical optics	3	0	0	6		HV	Offered
BB 667	Computational Physiology and Medicine	2	1	0	6		DA	Offered
BB 668	Engineering Principles in Surgical Reconstruction	1	0	4	6		VPS*, AKun	Offered
BB 670	Introduction to Biomedical Ultrasound	3	0	0	6		SKalva	Offered

3rd Semester

Institute Elective (6 credits)

Code	Course Title	L	T	P	C
	Institute elective (to be taken in the 3rd semester)	3	0	0	6

MTP Stage 1- Contact hours: 0; Credits: 44

Code	Course Title	L	T	P	C
BB 797	Project Stage I #	0	0	0	44

The department process for allotting Credit Seminar and MTP topics to students: **click here**

4th Semester

MTP Stage 2- Contact hours: 0; Credits: 48

Code	Course Title
BB 798	Project Stage II

Course Work and Credit Structure

Course work and Credits	Sem. 1	Sem. 2	Sem. 3	Sem. 4	Total
Core course (BB600 + BB653)	10	–	–	–	10
Core course (BB621 + BB694)	–	10	–	–	10
Soft core courses (One compulsory course based on background)	6	–	–	–	6
Department electives	12-18	24-18	–	–	36
Institute elective	–	–	6	–	6
Communication skills	PP/NP	–	–	–	PP/NP
Total course credits (A)	28-34	34-28	6	–	68
M. Tech. project credits (B)	–	–	44	48	92
Total credits for the program (A+B)					160

Note : Other than the courses listed above (i.e. Core course, Soft core, Department Elective and Institute Elective), any other course (within or outside department) can be taken as Additional Learning.