



Indian Institute of Information Technology - Allahabad

Deoghat, Jhalwa- 211015, Prayagraj, Uttar Pradesh

Department of Applied Sciences

M.Tech Curriculum 2026 Onwards

Department of Applied Science

(NEP based Curriculum)

PC- Programme Core, PE- Programme Elective, ES- Engineering Science, BS- Basic Science, OE- Open Elective, HM- Humanities and Management, MR- Minor, HR- Honor, AC- Audit Course

L-T-P-S (hr)

Lecture (L): 1 Credit = 1 hr/ week, Tutorial (T): 1 Credit = 1hr/week, Practical (P): 1 credit = 2 hr/week, [Self study \(S\): 1Credit=1 h/week](#)

The credits for all courses are given in LTP format. L stands for Lecture, T for Tutorial, P for Practice/Practical. L=3 signifies 3 hours of Lectures per week, T=1 signifies 1 hour of Tutorial per week, and P=1 corresponds to 2 hours Practice/Practical per week. For M. Tech. students, T and P need not be explicitly mentioned in the Time Table. The Practice/Practical component of the course could also be a Term paper or Term Paper along with the lab. The discretion is left to the Teacher teaching the course.

The dual degree M.Tech.-Ph.D. Programme has been kept reserved. This is in tune with the spirit of NEP 2020. It is envisaged with a target towards research leading to a PhD programme with a minimum duration of 04 years, and with a possible exit for the award of MTech degree and/or PG Diploma after securing required credits.

Please refer to the M.Tech. and Ph.D. Ordinance for the other details of the M. Tech. and Ph.D. programs that is available at the following link: <https://aaa.iiita.ac.in/>

The AS Department is offering the following specializations in each group:



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M. Tech Biomedical Analytics and Engineering

The M. Tech **Biomedical Analytics and Engineering (BMAE)** program at IIIT-Allahabad is designed to provide students with a comprehensive understanding of the interdisciplinary field that combines principles of engineering, medicine, and biology. The mission of the **Biomedical Analytics and Engineering program** at IIIT-A is to build up clinically adaptable solutions for human health by educating the next generation of biomedical engineers, cultivating leaders, and nurturing the amalgamation of science, engineering, and medicine in a discovery-focused environment. The main educational objective is to offer a systematic training in the fundamentals of engineering science, design, **analytics** and biology. The curriculum is planned to endow with concepts essential to understanding living systems from the molecular and cellular levels. The curriculum further incorporates principles of straight up integration, leading to the choice of a technical area (biomedical imaging and instrumentation, cellular engineering, computational biomedical engineering, or biomechanics), and culminates in a biomedical device design experience. With state-of-the-art facilities and a team of experienced faculty members, IIIT-Allahabad is committed to offering students a stimulating and nurturing learning environment.

Total Credit Distribution

Semester	Semester I	Semester II	Summer Semester	Semester III	Semester IV	Total Credits
M. Tech	18	19	0	15	12	64
PG Diploma	18	19	5	-	-	42



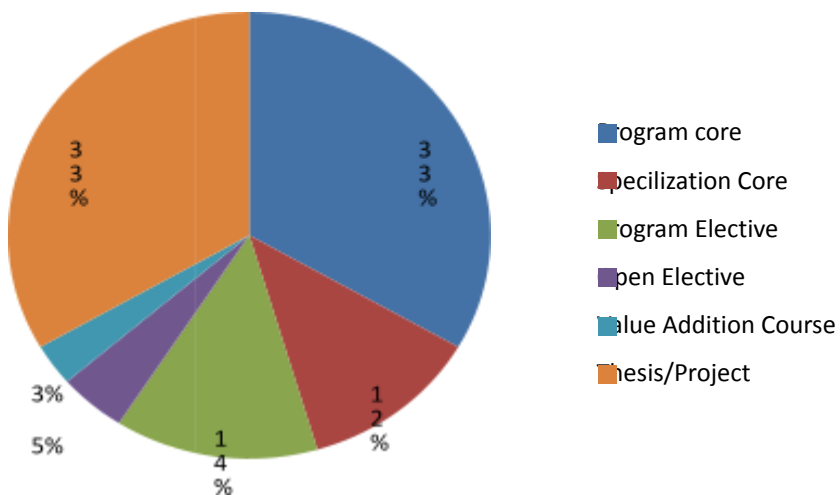
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M. Tech BMAE, Credit Distribution

M. Tech BI		I	II	III	IV	Total Credits	
1.	Program core	8	14			22	33%
2.	Specialization Core	8				8	12%
3.	Program Elective		3	6		9	14%
4.	Open Elective			3		3	5%
5.	Value Addition Course		2			2	3%
6.	Thesis/Project		2	6	12	20	31.25%





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Table 1: First Semester

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Biomedical Circuits and Instrumentation	AS512	PCC	4	3-0-2-0
2.	Biomechanics	AS513	PCC	4	3-0-2-0
3.	Tools for Research	AS505	ELC	2	2-0-0-0
4.	Elective I			4	3-0-2-0
5.	Elective II			4	3-0-2-0
Total Credit:				18	24 Hrs./week

The students have to select Elective I & Elective II from the **softcore elective basket** 1/2 (a single basket has to be chosen)

List of Softcore Electives/Soft-Core Subjects (Choose a single basket for I & II)

Basket 1: For students with Biology background

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Biosignal Processing	AS514	PCC	4	3-0-2-0
2.	Mathematics and Statistics for Biology	AS515	PCC	4	3-0-2-0
Total Credit:				8	10 Hrs./week

Basket 2: For students without Biology background

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Molecular Biology	AS516	PCC	4	3-0-2-0
2.	Anatomy & Physiology	AS517	PCC	4	3-0-2-0
Total Credit:				8	10 Hrs./week

In the first semester, Dual Degree students have to do the Research Methodology-2 Course besides the regular courses prescribed above in consultation with the HOD/Supervisor, to satisfy the minimum credit requirement as per PhD ordinance.

Table 2: Second Semester

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Soft Computing Tools	AS519	PCC	4	3-0-2-0
2.	Biomedical Imaging	AS520	PCC	4	3-0-2-0
3.	Medical Sensors and Actuators	AS521	PCC	4	3-0-2-0
4.	Elective III		PEC	3	3-0-0-0
5.	Dissertation I	AS509	ELC	2	0-0-4-0
6.	HSMC		VEC	2	2-0-0-0
Total Credit:				19	24 Hrs./week

EXIT: After the end of second Semester, after clearing all the papers, the M. Tech student may eligible for PG Diploma in Biomedical Engineering. However, these students have to secure **additional 5 credits** from summer semester for awarding PG diploma, which is mandatory. For regular M. Tech students there is no need of summer semester.

Table 3: Summer Semester (for PG-Diploma)

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Summer Project	AS610	ELC	2	0-0-4-0
2.	Medical Instrumentation Course/NPTEL	AS622	PCC	3	3-0-0-0
Total Credit:				5	7 Hrs./week

Table 4: Third Semester

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Elective IV		PEC	3	3-0-0-0
2.	Elective V		PEC	3	3-0-0-0
3.	Open Electives		OEC	3	3-0-0-0
4.	Dissertation II	AS601	ELC	6	0-0-12-0
Total Credit:				15	21 Hrs./week

Table 5: Fourth Semester

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	M. Tech Thesis	AS605	ELC	12	0-0-24-0
Total Credit:				12	²⁴ Hrs./week



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Table 6: List of Electives (for elective III, IV and V)

Sl. No.	Course Name	Code	Type	Credit	Hours
					L-T-P-S
1.	Bioelectronics	AS635	PEC	3	3-0-0-0
2.	Biomaterials and Tissue Engineering	AS616	PEC	3	3-0-0-0
3.	Image Processing Fundamentals for Medical Systems	IT696	PEC	3	3-0-0-0
4.	Nanobiotechnology and Nanoinformatics	AS617	PEC	3	3-0-0-0
5.	Bio-MEMs	AS618	PEC	3	3-0-0-0
6.	Artificial Organs and Implants	AS619	PEC	3	3-0-0-0
7.	Engineering Processes in Biological Systems	AS620	PEC	3	3-0-0-0
8.	Survival Analysis	AS621	PEC	3	3-0-0-0
9.	Computational Methods for Biomedical Engineers	AS622	PEC	3	3-0-0-0
10.	Modeling of Biomedical Engineering Systems	AS623	PEC	3	3-0-0-0
11.	Telemedicine	AS624	PEC	3	3-0-0-0
12.	Immunotechnology	AS625	PEC	3	3-0-0-0
13.	Medical Information Systems and PCS	AS626	PEC	3	3-0-0-0
14.	Machine Learning for Medical Systems	AS627	PEC	3	3-0-0-0
15.	Computer Aided Drug Designing	AS628	PEC	3	3-0-0-0
16.	Clinical Biochemistry	AS629	PEC	3	3-0-0-0
17.	Infectious Disease Modeling	AS630	PEC	3	3-0-0-0
18.	Material Informatics	AS631	PEC	3	3-0-0-0
19.	Instrumentations	AS632	PEC	3	3-0-0-0
20.	Biomedical Engineering for Space	AS633	PEC	3	3-0-0-0
21.	Fluid Mechanics for Biological Systems	AS634	PEC	3	3-0-0-0
22.	All the electives provided in M. Tech BI basket are also available for M. Tech BMAE students				
	OPEN ELECTIVES				

	23	Open Elective		OE	3	
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