

## Course Structure for M.Tech. (2-Year), M.Tech. + Ph.D. Dual Degree in Biomedical Engineering (from AY 2023-2024)

### Minimum Educational Qualification (MEQ) (For Indian applicants):

i. B.E./B.Tech. /AMIE or equivalent in Biomedical Engineering (BM), Biotechnology (BT), Chemical Engineering (CH), Computer Science and Engineering/ Information Technology (CS), Electrical Engineering (EE), Electronics/Telecommunications Engineering (EC), Engineering Physics (EP), Instrumentation Engineering (IN), Mechanical Engineering (ME), Metallurgy & Materials Science (MT), Pharmaceutical Technology (PY), Other Engineering (ZE) (with the first division as defined by the awarding Institute/University)

OR

ii. M.Sc. or equivalent in Biochemistry (BY), Biophysics (BP), Biotechnology (BT), Ceramics (CG), Chemistry (CY), Electronics / Electronic Sciences (EC), Ergonomics (ER), Materials Science (MS), Mathematics (MA), Molecular Biology (MG), Physics (PH), Physiology (PS), Other Science (ZS) (with the first division as defined by the awarding Institute/University)

OR

iii. \*\* Health Sciences such as MBBS (Medicine) / BDS (Dental), B.Pharm/B.V.Sc., B.P.Th. ,B.O.Th., B.ASLP) (Duration 4 years or more) (with the first division as defined by the awarding Institute/University)

### Minimum Educational Qualification (MEQ) (For International applicants):

Four-year Bachelor's degree or five-year integrated degree (with the first division as defined by the awarding Institute/University) in Biomedical Engineering/ Instrumentation Engineering/ Electrical Engineering/ Mechanical Engineering/ Engineering Sciences/ Biotechnology/ Life Sciences/ Physics/ Chemistry.

### Qualifying Examination (QE):

(a) **Indian applicants:** Valid GATE score in any discipline for engineering and science graduates (for i and ii above)

\*\* All India level post graduate entrance examination for corresponding disciplines such as INI\_CET/NEET-PG/NEET-MDS/JIPMER/PGI Chandigarh/AFMC-Pune/DNB Part-I for MBBS/BDS, GPAT/ All India level selection examination for B.Pharm.,

All India level post graduate entrance examination for M.V.Sc., M.P.Th., M.O.Th. and M.ASLP, or GATE examination for all such health science background.

Eligibility/rank certificates for all such All India level entrance examinations are required (for iii, above). The candidate should have qualified the entrance exam (as per the qualification criterion of the respective exam for that exam year and category) and the score obtained should be valid (as per the duration of validity for the respective exam) at the time of application to the M.Tech. program.

The admission of students (under the TA category) to M.Tech. in Biomedical Engineering program will be based on :

a) their qualifying discipline and the corresponding valid GATE score and written test or interview or both.

b) for, non-GATE candidates, admission will be based on valid score in respective qualifying exam and written test or interview or both.

**(b) International applicants:** Valid GRE or TOEFL or IELTS score

**Categories of Admission:**

**(a) Indian applicants:** Teaching Assistantship (**TA**); (ii) Highly motivated sponsored candidate (**SW**) on full-time basis from highly reputed R and D organizations such as DRDO, ISRO, BHEL, C-DAC, ADE, ADA, etc. and highly reputed Industries; (iii) Defence Forces (**DF**): Candidates sponsored by the Defence Forces; (iv) Regular Institute Staff (**IS**) of IIT Indore on part-time basis only.

**(b) International applicants:** (i) International self-financed (**ISF**) students; (ii) International students sponsored by non-government organizations or by a reputed industry (**ISW**); (iii) International students sponsored by foreign government or its organizations or through mutual collaborative programs of India with other countries (**GSW**)

*Candidates of SW, DF and IS categories will not be provided any scholarship.*

**Selection Criteria:** Admission would be based on GATE score, personal interview and/ or the written examination.

**Duration of the Program:** Two years full-time.

**Total Intake:** 10 (TA)

**Scholarship (only for TA category Indian students):** As per MoE norms.

**Course Structure for two-year Full-time M.Tech. in Biomedical Engineering**

**1<sup>st</sup> Year: Semester-I**

Course code	Course Title	Contact Hours (L-T-P)	Credits
BSE 614*	General Physiology	2-1-0	3
BSE 635	Biomaterials and Nano-biotechnology	2-1-0	3
BSE 637	Bioelectronics and Biomedical Sensors	2-1-0	3
BSE 639	Tissue Engineering and Regenerative Medicine	2-1-0	3
BSE 653	Experimental Techniques Laboratory-1	0-0-4	2
ZZ XXX	Elective-I	X-X-X	3
<b>Total minimum credits earned during the semester</b>			<b>17</b>
<b>Additional course (as per the requirement basis)</b>			
HS 641*	English Communication Skills	2-0-2	PP/NP

**1<sup>st</sup> Year: Semester-II**

<b>Course code</b>	<b>Course Title</b>	<b>Contact Hours (L-T-P)</b>	<b>Credits</b>
BSE 636	Biomedical Instrumentation	2-1-0	3
BSE 638	Mechanobiology and Electrophysiology	2-1-0	3
BSE 624*	Bioprocess Engineering and Technology	2-0-4	4
BSE 698	PG Seminar Course	0-2-0	2
ZZ XXX	Elective-II	X-X-X	3
ZZ XXX	Elective-III	X-X-X	3
<b>Total minimum credits earned during the semester</b>			<b>18</b>

**2<sup>nd</sup> Year: Semester-III**

<b>Course code</b>	<b>Course Title</b>	<b>Contact Hours (L-T-P)</b>	<b>Credits</b>
BSE 799	M.Tech. Research Project (Stage-I)	0-0-36	18
<b>Total minimum credits to be earned during the semester</b>			<b>18</b>

**2<sup>nd</sup> Year: Semester-IV**

<b>Course code</b>	<b>Course Title</b>	<b>Contact Hours (L-T-P)</b>	<b>Credits</b>
BSE 800	M.Tech. Research Project (Stage-II)	0-0-36	18
<b>Total minimum credits to be earned during the semester</b>			<b>18</b>
<b>Total minimum credits to be earned during the program</b>			<b>71</b>