

| Cat. | Deviation | Programme Components | BME | Recommended (V Years) | |
|--------|-----------|---|------------|-----------------------|------------|
| | | | | Min | Max |
| HU | 0 | Humanities and Social Science | 22 | 22 | 22 |
| IS | 0 | Science | 69 | 62 | 84 |
| IE | 0 | Institute Requirement Engineering/ Pharmacy | 48 | 41 | 60 |
| EP | -8 | Engineering Drawing (Manual and Computer Aided), Manufacturing Practices and Practice course of Department / School | 12 | 18 | 24 |
| LM | 0 | Language and Management | 27 | 27 | 31 |
| DC/ MC | 0 | Department/Programme Core (Includes Stream Courses) | 148 | 105 | 175 |
| DE/ BE | 0 | Department/Programme Elective (Includes Stream Courses) | 63 | 60 | 105 |
| OE | -1 | Open Elective (Interdisciplinary Stream courses from Science/ Engineering/Pharmacy) | 54 | 55 | 100 |
| DP | 0 | Project/ Industrial visit/ Training | 30 | 20 | 50 |
| DT | 0 | Dissertation | 80 | 70 | 80 |
| | | Total | 553 | 540 | 570 |
| | | All Semester Total (Hons.) | 573 | 560 | 590 |

L: Lecture Hours, T: Tutorials Hours, P: Practical Or Laboratory Hours, C: Credits

Stream Electives in Biomedical Engineering

| Stream | Stream Code | Stream Title | | | | |
|--------|-------------|----------------------------|--|--|--|--|
| | X1X | Biomedical Instrumentation | | | | |
| | X2X | Biomechanics | | | | |

Stream Electives in Biomedical Engineering

| Stream | Stream Code | Stream Title | L | T | P | Credits |
|----------------------|-------------|---|---|---|---|---------|
| | X1X | Biomedical Instrumentation | | | | |
| IDD Pt. III(V Sem.) | BM311 | Microprocessor and Micro Controllers | 3 | 0 | 0 | 9 |
| IDD Pt. III(VI Sem.) | BM312 | Linear Control theory and its Application to Physiological System | 3 | 0 | 0 | 9 |
| IDD Pt. IV(VII Sem.) | BM411 | Artificial Intelligence and its Application to Biomedical Engineering | 3 | 0 | 0 | 9 |
| | X2X | Biomechanics | | | | |
| IDD Pt. III(V Sem.) | BM321 | Sports Biomechanics | 3 | 0 | 0 | 9 |

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|---|--------|--|-----------|----------|----------|-----------|
| IDD Pt. IV(VII Sem.) | BM421 | Biotransport Process | 3 | 0 | 0 | 9 |
| IDD Pt. V(VIII Sem.) | BM521 | Rehabilitation Engineering | 3 | 0 | 0 | 9 |
| IDD Course Structure for Biomedical Engineering (2018-2019) | | | | | | |
| Biomedical Engineering : 5-Year IDD I-Semester | | | | | | |
| IH.H101.14 | H101 | Universal Human Values - I: Self and Family | 2 | 0 | 0 | 6 |
| GY.PE101.14 | PE101 | Elementary Physical Education | 0 | 1 | 3 | 5 |
| GY.CP101.14 | CP101 | Creative Practices # | 0 | 1 | 3 | 5 |
| | | Total | 2 | 2 | 6 | 16 |
| LM.HL101.14 | HL101 | Basic English* | 2 | 0 | 1 | 7 |
| | | Total | 4 | 2 | 7 | 23 |
| #Creative Practices course to be announced by Dean Academic Office | | | | | | |
| *Basic English course to be taken by student as recommended after Diagnostic Test | | | | | | |
| Biomedical Engineering : 5-Year IDD I-Semester | | | | | | |
| IS.PHY102.14 | PHY102 | Physics - II: Introduction to Engineering Electromagnetics | 3 | 1 | 2 | 13 |
| IS.CY101.14 | CY101 | Chemistry - I | 2 | 1 | 2 | 10 |
| IS.MA101.14 | MA101 | Engineering Mathematics - I | 3 | 1 | 0 | 11 |
| IE.ME102.14 | ME102 | Engineering Mechanics | 3 | 1 | 0 | 11 |
| IS.CY103.14 | CY103 | Essentials of Biochemistry | 3 | 0 | 2 | 11 |
| EP.ME105.14 | ME105 | Manufacturing Practice - I | 0 | 0 | 3 | 3 |
| | | Total | 14 | 4 | 9 | 59 |
| Biomedical Engineering : 5-Year IDD II-Semester | | | | | | |
| IS.PHY101.14 | PHY101 | Physics - I: Classical, Quantum & Relativistic Mechanics | 3 | 1 | 2 | 13 |
| EP.ME104.14 | ME104 | Engineering Drawing | 1 | 0 | 3 | 6 |
| IE.CSO101.14 | CSO101 | Computer Programming | 3 | 1 | 2 | 13 |
| DC.BM101.14 | BM101 | Introduction to Biomedical Engineering | 3 | 0 | 3 | 12 |
| EP.ME106.14 | ME106 | Manufacturing Practice – II | 0 | 0 | 3 | 3 |
| IH.H103.14 | H103 | Development of Societies # | 2 | 1 | 0 | 8 |

| | | | | | | | |
|--|--------|--|--------------|-----------|----------|-----------|-----------|
| IH.H104.14 | H104 | History and Civilization # | | | | | |
| | | | Total | 12 | 3 | 13 | 55 |
| # The students have to choose one course from H103 & H104. | | | | | | | |
| Biomedical Engineering : 5-Year IDD III-Semester | | | | | | | |
| IE.CHO102.14 | CHO102 | Fluid Mechanics | 3 | 1 | 0 | 11 | |
| MC.BO202.15 | BO202 | Human Physiology | 3 | 0 | 0 | 9 | |
| DC.BM201.15 | BM201 | Molecular Biology and Genetics | 3 | 0 | 0 | 9 | |
| DC.BM202.15 | BM202 | Cell Mechanobiology | 3 | 0 | 2 | 11 | |
| DP.BM291.15 | BM291 | Exploratory Project | 0 | 0 | 5 | 5 | |
| IH.H105.14 | H105 | Philosophy # | 2 | 1 | 0 | 8 | |
| IH.H106.14 | H106 | Education and Self # | | | | | |
| | | | Total | 14 | 2 | 7 | 53 |
| # Students have to choose one course from H105 & H106. | | | | | | | |
| Biomedical Engineering : 5-Year IDD IV-Semester | | | | | | | |
| IE.EO102.14 | EO102 | Fundamentals of Electronics and Instrumentation Engineering | 3 | 1 | 2 | 13 | |
| IS.MA203.14 | MA203 | Mathematical Methods | 3 | 1 | 0 | 11 | |
| DC.BM204.15 | BM204 | Biomaterials | 3 | 0 | 2 | 11 | |
| DC.BM205.15 | BM205 | Transport Processes | 3 | 0 | 0 | 9 | |
| | | | Total | 12 | 2 | 4 | 44 |
| Biomedical Engineering : 5-Year IDD V-Semester | | | | | | | |
| DC.BM301.16 | BM301 | Electronic measurement and instrumentation for Biomedical applications | 3 | 0 | 0 | 9 | |
| DE.BM3XX.16 | DE- 1 | Departmental Elective (DE) - 1 | 3 | 0 | 0 | 9 | |
| DC.BM302.16 | BM302 | Biomechanics | 3 | 0 | 2 | 11 | |
| OE - 1 | OE - 1 | Open Elective - 1 | 3 | 0 | 0 | 9 | |
| DC.BM303.18 | BM303 | Electronic measurement and instrumentation Lab | 0 | 0 | 3 | 3 | |
| | | | Total | 12 | 0 | 5 | 41 |
| DP.BM391S.16 | BM391S | Stream Project(Hons.) | 0 | 0 | 10 | 10 | |

| | | | | | | | |
|--|--------------|--|---------------------|----------|-----------|--|-----------|
| | | | Total (Hons) | | | | 51 |
| List of Electives DE-1 | | | | | | | |
| DE.BM311.16 | BM311 | Microprocessor and Micro Controllers | 3 | 0 | 0 | | 9 |
| DE.BM321.16 | BM321 | Sports Biomechanics | 3 | 0 | 0 | | 9 |
| Biomedical Engineering : 5-Year IDD VI-Semester | | | | | | | |
| DC.BM401.16 | BM401 | Bioinstrumentation and Medical Imaging Modalities | 3 | 0 | 0 | | 9 |
| DC.BM332.16 | BM332 | Specialty Polymers Science & Techonology for Biomedical Applications | 3 | 0 | 2 | | 11 |
| DE.BM3XX.16 | DE - 2 | Departmental Elective (DE)- 2 | 3 | 0 | 0 | | 9 |
| OE - 2 | OE - 2 | Open Elective - 2 | 3 | 0 | 0 | | 9 |
| DC.BM403.18 | BM403 | Bioinstrumentation Lab | 0 | 0 | 3 | | 3 |
| DP.BM392/S.16 | BM392/BM392S | Stream or UG Project | 0 | 0 | 10 | | 10 |
| | | Total | 12 | 0 | 13 | | 51 |
| *List of Electives DE2 | | | | | | | |
| DE.BM312.16 | BM312 | Linear Control theory and its Application to Physiological System | 3 | 0 | 0 | | 9 |
| DE.BM322.16 | BM322 | Introduction to Neuro & Cognitive Technology | 3 | 0 | 0 | | 9 |
| Biomedical Engineering : 5-Year IDD Summer Semester | | | | | | | |
| DP.BM393.15 | BM393 | Industrial Training/Project/Internship | 0 | 0 | 5 | | 5 |
| | | Total | 0 | 0 | 5 | | 5 |
| Biomedical Engineering : 5-Year IDD VII-Semester | | | | | | | |
| DC.BM501.16 | BM501 | BioMEMS and Biosensors | 3 | 0 | 0 | | 9 |
| DE.BM402.16 | DE - 3 | Departmental Elective (DE) - 3 | 3 | 0 | 0 | | 9 |
| DE.BM4XX.16 | DE - 4 | Departmental Elective (DE) - 4 | 3 | 0 | 0 | | 9 |
| OE - 3 | OE - 3 | Open Elective - 3 | 3 | 0 | 0 | | 9 |
| LM | LM | Language and Management Courses | 3 | 0 | 0 | | 9 |
| DP.BM491.16 | BM491 | UG Project (Non-Hons Students) | 0 | 0 | 10 | | 10 |

| | | | | | | | |
|--|--------|---|----------------------------------|-----------|----------|-----------|-----------|
| | | | Total (Non-Hons Students) | 15 | 0 | 10 | 55 |
| DP.BM491S.16 | BM491S | Stream Project (Hons Students) | 0 | 0 | 20 | 20 | |
| | | | Total (Hons Students) | 15 | 0 | 20 | 65 |
| List of Electives DE-3, DE4 (any two of them) | | | | | | | |
| DE.BM511.16 | BM511 | Artificial Intelligence and its Application to Biomedical Engineering | 3 | 0 | 0 | 9 | |
| DE.BM421.16 | BM421 | Biotransport Processes | 3 | 0 | 0 | 9 | |
| DE.BM432.16 | BM432 | Bioinformatics | 3 | 0 | 0 | 9 | |
| Biomedical Engineering : 5-Year IDD VIII-Semester | | | | | | | |
| DC.BM502.16 | BM502 | Biomedical Signal and Image Processing | 3 | 0 | 0 | 9 | |
| DC.BM531.16 | BM531 | Tissue Engineering | 3 | 0 | 0 | 9 | |
| DE.BM5XX.16 | DE - 5 | Departmental Elective (DE) - 5 | 3 | 0 | 0 | 9 | |
| OE -4 | OE - 4 | Open Elective - 4 | 3 | 0 | 0 | 9 | |
| LM | LM | Language and Management Courses | 3 | 0 | 0 | 9 | |
| DC.BM505.16 | BM505 | Signal and Image Processing Lab | 0 | 0 | 3 | 3 | |
| DT.BM591.16 | BM591 | Thesis | 0 | 0 | 10 | 10 | |
| | | | Total | 15 | 0 | 13 | 58 |
| List of Electives DE-5 | | | | | | | |
| DE.BM512.16 | BM512 | Radiation Biology and its Biomedical Application | 3 | 0 | 0 | 9 | |
| DE.BM521.16 | BM521 | Rehabilitation Engineering | 3 | 0 | 0 | 9 | |
| | | | | | | | |
| Biomedical Engineering : 5-Year IDD IX-Semester | | | | | | | |
| DC.BM514.16 | BM 514 | Mathematical Modeling and Simulation | 3 | 0 | 2 | 11 | |
| DE.BM5XX.16 | DE - 6 | Departmental Elective (DE) - 6 | 3 | 0 | 0 | 9 | |
| DE.BM5XX.16 | DE - 7 | Departmental Elective (DE) - 7 | 3 | 0 | 0 | 9 | |
| OE - 5 | OE - 5 | Open Elective - 5 | 3 | 0 | 0 | 9 | |
| OE - 6 | OE - 6 | Open Elective - 6 | 3 | 0 | 0 | 9 | |
| DT.BM692.16 | BM 692 | Thesis | 0 | 0 | 20 | 20 | |

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|---|--------|--|-----------|----------|-----------|-----------|
| LM | LM | Language and Management Courses | 3 | 0 | 0 | 9 |
| | | Total | 15 | 0 | 20 | 76 |
| List of Electives DE-6 | | | | | | |
| DE.BM513.16 | BM 513 | Biomedical Instrumentation System design, Safety and reliability aspects | 3 | 0 | 0 | 9 |
| DE.BM522.16 | BM 522 | Hospital System Management | 3 | 0 | 0 | 9 |
| DE.BM532.16 | BM 532 | Translational Nanomedicine and Therapeutics | 3 | 0 | 0 | 9 |
| | | | | | | |
| List of Electives DE-7 | | | | | | |
| DE.BM532.16 | BM 532 | Translational Nanomedicine and Therapeutics | 3 | 0 | 0 | 9 |
| DE.BM533.16 | BM 533 | Non Destructive Testing | 3 | 0 | 0 | 9 |
| | | | | | | |
| Biomedical Engineering : 5-Year IDD X-Semester | | | | | | |
| DT.BM693.16 | BM 693 | Thesis | 0 | 0 | 50 | 50 |
| | | Total | 0 | 0 | 50 | 50 |