

M.Tech. in Biomedical Engineering

SEMESTER I

BME501 Human anatomy and physiology

1. Arthur.C.Guyton – Textbook of Medical Physiology – Prism Book (p) Ltd. 1996.
2. CL.Ghai – A textbook of Practical physiology – 5th Ed Jaypee Medical Pub, 2003
3. Sarada Subramanyam, K.Madhavan Kutty and H.D.Singh – Text book of 'Human Physiology – S. Chand & Company, 1996

BME502 Biomaterials and clinical devices

1. Jonathan Black, Biological Performance of materials, Marcel Decker, 1981
2. C. P. Sharma & M. Szycher, Blood compatible materials and devices, Technomic Publishing Co. Ltd., 1991.
3. Piskin and A S Hoffmann, Polymeric Biomaterials (Eds), Martinus Nijhoff
4. Eugene D. Goldbera , Biomedical Ploymers, Akio Nakajima.
5. A. Rembaum & M. Shen, Biomedical Polymers, Mercer Dekkar Inc. 1971
6. Lawrence Stark & Gyan Agarwal , Biomaterials
7. L. Hench & E. C. Ethridge, Biomaterials - An Interfacial approach.

BME503 Medical Physics and Biochemistry

1. Medical Physics by J.R.Cameron and J.G.Skofronide (1978).
2. Lehninger Principles of Biochemistry by David . L. Nelson, Micheal . M. Cox,, Third Edition, Macmillan Worth publishers

BME504 Biomedical Instrumentation, biosensor and transducer

1. R. S. Khandpur, "Handbook of Biomedical Instrumentation", Tata McGraw Hill.
2. S.C. Cobbold, "Transducers for Biomedcial Instruments", Prentice Hall.
3. Brown & Gann, "Engineering Principles in Physiology Vol. I", Academic Press.
4. Carr & Brown, "Introduction to Biomedical Equipment Technology" Pearson Education, Asia.
5. Rao & Guha,"Principles of Medical Electronics & Biomedical Instrumentation", University Press, India.
6. Iberall & Guyton, "Regulation & Control in Physiological System", Instruments Society, USA.
7. A.V.S. De Renck, "Touch Heat & Pain", Churchill Ltd. London. Harry Thomas, "Handbook of Bio medical Instrumentation", Reston, Virginia.
8. D. L. Wise, "Applied Bio Sensors", Butterworth, London. Encyclopedia of Medical Devices and Instrumentation: J G. Webster. Vol I,II,III,IV (PHPub)

BME505 Artificial intelligence and expert system in medicine

1. Neural Networks and Artificial Intelligence for Biomedical Engineering, Donna L. Hudson, Maurice E. Cohen, IEEE press, 2000.
2. Pattern Recognition for Medical Imaging, Anke Meyer-Base, Elsevier, Academic Press, 2004.
3. Fuzzy and Neuro- Fuzzy systems in medicine edited by H.N Teodorescu, A. Kandel, L.C Jain, CRC Press, 1999.

4. Decision Support Systems and Intelligent Systems, E. Turban, Jay E. Aronson , 6th edition, Prentice-Hall, 2001.

BME506 BioMEMS and Nanobiomedicine

1. Fundamentals of Microfabrication by Marc Madar (CRC Press).
2. The MEMS Handbook – Cal-el-Hala.
3. MEMS & Microsystem, Design and manufacture by Tai-Ran Hsu , McGraw Hill.
4. Biomedical Nanotechnology – Neelina Malsch.

SEMESTER II

BME601 Principle of imaging processing in medicine

1. Digital Image Processing, Gonzalez and Woods- Pearson Education
2. Fundamentals of Digital Image Processing, A.K. Jain –P.H.I.
3. Digital Image Processing and Analysis, Chanda Majumder- Printice Hall India.
4. Digital Image Processing and Computer Vision, Sonka, Hlavac,Boyle-Cenage learning.
5. Digital Image Processing, William Pratt- John Wiley
6. Carr & Brown, “Introduction to Biomedical Equipment Technology” Pearson education, Asia.
7. R. S. Khandpur, “Handbook of Bio-Medical Instrumentation”, TataMcGraw Hill.
8. J.Webster, “Bioinstrumentation”, Wiley & Sons
9. Dowsett, Kenny & Johnston, “The Physics of Diagnostic Imaging”, Chapman Massey & Meredith, “Fundamental Physics of Radiology”, John Wright & Sons.
10. S. Webb, “The Physics of Medical Imaging”, Ada m Hilger, Bristol.
11. Sybil M Stockley, “A Manual of Radiographic Equipments”, Churchill Livingstones.
12. Chistrmis , “Physics of Diagnostic Radiology”

BT602 BIOPHYSICAL SYSTEM AND SIGNAL SIMULATIONS

1. Oppenheim, Wilskey and Nawab- “Signal & System”, Prentice Hall India.
2. Hayken & Van Veen- “Signal & System”, Willey
3. Taub & Schilling-“Principles of Communication System”, Tata McGraw Hill.
4. Kennedy & Devis-“Electronic Communication System”, Tata McGraw Hill
5. Gayakward-“Opamps and Linear Integrated Circuits” , Prentice Hall India

BT603 Application of Genomics in Medicine

1. Human Molecular Genetics, Third Edition (2003) T. Strachan and A.P.Read, Garland Science Publication.
2. Molecular Cell Biology, Sixth Edition (2007) H. Lodish, A. Berk, and C.A.Kaiser, W. H. Freeman & Co Ltd.
3. Cardiovascular Genetics and Genomics for the Cardiologist (2007) Victor J. Dzau and Choong-Chin Liew, Blackwell Publishing.
4. Genomics: The Science of Technology Behind the Human Genome Project (1999), Charles R. Cantor and Cassandra L. Smith, John Wiley & Sons, Inc. A Century of Mendelism in Human Genetics (2005), Milo Keynes,
5. A.W.F.Edwards and Robert Peel, CRC Press.

BT604 Tissue Engineering and Artificial Organs

1. Biomaterials, artificial organs and Tissue engineering, Larry L. Hench, Julian.R Jones, Wood head Publishing Ltd, 2005.
2. Principle of Tissue Engineering, Robert P.Lanza, Robert Langer William L.Chick. Academic Press, 2004.
3. Tissue Engineering, by Palsson and Bhatia (eds.), Published by Pearson
4. 'Tissue Engineering and Artificial Organs' By Joseph D.Bronzino
5. 'Cardiogenic Shock' by Steven.M. HollenBerg.
6. 'Biomaterials, Artificial Organs and Tissue Engineering' by Larry L.Hench and Julian R.Jones.
7. "Artificial Organs" by Gerald E.Miller Morgan & Claypool Publishers.

BT605 Rehabilitation Engineering

1. Biomedical Engineering Hand book Edited by Bronzino D.Joseph Publisher CRC Press (New York) Published in 1995.
2. Hand book of B.M. Engg. by Kline Jacob Published by Academic Press (N York)

SEMESTER III**BT701 Bioethics and IPR**

1. Ethics in engineering, Martin. M.W. and Schinzinger.R. III Edition, Tata McGraw-Hill, New Delhi. 2003.
2. Biotechnologies and Development, UNESCO Publications, 1988
3. A Biotechnologies in developing countries present and future, UNESCO, Pub,
4. Singh. K, Intellectual property rights on Biotechnology, BCIL, and New Delhi.

BT702 E Hospital Management

1. S. I, Goel & Ram Kumar, Hospital Administration and Management, Deep and Deep Publications, New Delhi.2002.
2. Principles of Hospital Administration and Management by Ravi Bindra, Adroit pub,
3. Medical Informatics- A Primer by Mohan Bansal, Tata McGraw-Hill, 2003.

BT703 E Fiber Optics and Laser for Medical Application

1. Therapeutic lasers – Theory and practice by G. David Baxter, Churchill Livingstone
2. Medical lasers and their safe use by David H Shiney, Stephen and L.Trokkel, Springer
3. Elements of Fiber optics by S.L.Wymer, Regents –prentice hall publications
4. Laser and optical fibers in medicine by Katzer and Abraham, Academic press
5. An introduction to optical fibers by A.M.Cherin, McGraw.
6. Optical fiber communication by G.Keliser, McGraw Hill publications.

BT704 E Microcontroller in Medical Application

1. Deshmukh A.V Microcontrollers Theory & Applications -T McGraw Hill,N Delhi, 2005.

2. Muhammad Ali Mazzidi The 8051 Microcontroller & Embedded Systems by, Janice Gillispie Mazidi, Pearson Education.
3. Myke Predko, Programming and Customizing the 8051 Microcontrollers TMH, 1999
4. Raj Kamal Embedded Systems, Architecture, Programming and Design, TMH 2003

BT705 E Bioinformatics

1. Developing Bioinformatics computer skills – Cynthia Gibas – O'Reilly Publishers.
2. Introduction to Bioinformatics – Attwood – ELBS Publishers.
3. Bioinformatics – Arthur Lesk – Oxford press.