

GUJARAT TECHNOLOGICAL UNIVERSITY
Biomedical Engineering
M.E. Semester: II

Subject Name: **Advance Biomaterials (Major Elective-II)**

Sr. No.	Course Content
1.	Fundamental properties of material used as Biomaterial
2.	Metallic Biomaterials
3.	Polymeric Biomaterials
4.	Ceramics Biomaterials
5.	Processing and Characterization of Biomaterials
6.	Interaction between Material and living Tissue
7.	Inflammation, Carcinogenicity and Hypersensitivity
8.	Sterility and Infection
9.	Biocompatibility Testing
10.	Biomaterials for Dental Applications
11.	Ophthalmic Biomaterials
12.	Hip Prosthesis
13.	Natural and Synthetic Polymeric Scaffolds
14.	Bio MEMS
15.	Magnetic Particles for Biomedical Applications
16.	Manufacturing Issues for Biomaterials

Reference Books:

1. Advanced Biomaterials : Fundamentals, Processing and Applications
Bikramjit Basu, Dhirendra S. Katti, Ashok Kumar John Wiley and Sons, 2009
2. Biomedical Materials
-Roger Narayan Springer 2009
3. Biomaterials
- Sujata V. Bhat Alpha Science International, 2005
4. Biomaterials: principles and applications
-Joon Bu Park, Joseph D. Bronzino CRC Press, 2003
5. Introduction to biomaterials
- Donglu Shi Tsinghua University Press, World Scientific