

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

Subject Name: **Biomedical Image Processing and Analysis (Major Elective-II)**

| Sr. No. | Course Content |
|----------------|---|
| 1. | Biomedical Image Processing Overview |
| 2. | Sources of biomedical Images |
| 3. | Limitations of Imaging Device and Types of Defects in Biomedical images |
| 4. | Formats and Standards for Biomedical Images |
| 5. | Storage and Compression of Biomedical Images |
| 6. | Visualization |
| 7. | Enhancement in Biomedical Images |
| 8. | Artifact Reduction In Biomedical Images |
| 9. | Transformation of Biomedical Images |
| 10. | Restoration of Images |
| 11. | Biomedical Image Segmentation |
| 12. | Registration in Biomedical Images |
| 13. | Communication of Medical Images |
| 14. | Diffusion Filtering |
| 15. | Deformable Models |

Reference Books:

1. Handbook of Medical Imaging: Medical image processing and analysis
-Milan Sonka, SPIE Press, 2000
2. Medical image processing, reconstruction, and restoration: concepts and methods
- Jiří Jan, Taylor & Francis, 2006
3. Handbook of medical imaging: processing and analysis
Isaac N. Bankman , Academic Press, 2000
4. Medical image registration
Joseph V. Hajnal, CRC Press, 2001
5. Biomedical imaging, visualization, and analysis
Richard A. Robb, Wiley-Liss, 2000