

## **STUDY PLAN OF THE MASTER OF SCIENCE DEGREE PROGRAM ( with THESIS)**

Master of Science degree program of the Biomedical Engineering Department (with Thesis) is design to prepare graduates for biomedical engineering careers in both industry and academia by helping them to develop expertise and mastery of knowledge in their fields and enhance their ability to develop and apply associated Technologies to biomedical problems.

### **Core Courses;**

1. BME500 Thesis I
2. BME501 Thesis II
3. BME502 Seminars in Biomedical Engineering
4. BME562 Biomedical Research Methods
5. BME520 Advance Biostatistics

### **MSIM (Minor Subject on Biomedical Instrumentations) Elective Courses;**

1. BME503 Biomedical Instrumentations
2. BME511 Magnetic Resonance Imaging
3. BME521 Clinical Engineering
4. BME570 Advance Electromagnetic & Medical Applications
5. BME518 Ultrasound Imaging and Doppler Techniques
6. BME535 Advance Microcontroller Systems
7. MAT501 Advance and Applied Mathematics
8. BME533 Physics in Nuclear Medicine
9. BME582 Bioeffects and Therapeutic Applications of Electromagnetic Energy
10. BME504 Mathematical and Computational Methods in Biomechanics of Human Skeletal Systems

### **MS2M (Minor Subject on Tissue Engineering, Artificial Organs, Biomaterials) Elective Courses;**

1. BME543 Advance Tissue Engineering
2. BME510 Biomaterials for Medical Diagnosis and Therapy
3. BME512 Advance Artificial Organs
4. BME504 Advance Biomechanics
5. BME555 Biomedical Micro and Nano Systems
6. BME560 Advance Biomechanical Cardiovascular Systems

**MS3M (Minor Subject on Biomedical Signal & Image Processing, Bioinformatics, Modelling of Biological Systems) Elective Courses;**

1. BME507 Advance Biomedical Signal Processing
2. BME505 Advance Image Processing
3. BME503 Advance Bioinformatics
4. BME580 Advance Artificial Neural Networks
5. BME590 Modelling of Complex Biological Systems
6. BME532 Pattern Recognition
7. BME536 Machine Vision
8. BME506 Information Theory and Coding
9. BME533 Physics in Nuclear Medicine
10. BME582 Bioeffects and Therapeutic Applications of Electromagnetic Energy
11. BME504 Mathematical and Computational Methods in Biomechanics of Human Skeletal Systems