BME359 Visualization and Image Analysis

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JULY

Synopsis:

This course compromises fundamental principles, underlying theories and detailed discussions of innovative imaging methods, novel visualisation techniques, new processing algorithms, image modelling, and biomedical applications useful in medical training.

Topics:

- Introduction to Imaging Science and Image Acquisition
- Image Representation, Display, Communications and Databases
- Image Visualization
- Image Processing and Analysis
- Biomedical Application: Functional Thermal Imaging
- Biomedical Applications Cardiac Motion Analysis from MRI and CT

Textbooks:

by Andrew G. Webb.: Introduction to Biomedical Imaging (eTextbook) John-Wiley & Sons, Inc
ISBN-13: 9781119485940

Learning Outcome:

- Demonstrate specific skills such as latest innovative imaging methods, and novel visualization techniques
- Examine the role of IT in a variety of contexts for visualization and image analysis;
- Use key mathematical concepts, methods, theories and visualization techniques necessary to support the areas of biomedical imaging
- Recommend suitable imaging analysis tools for clinical and biological applications.
- Solve problems using related visualization /imaging software tools relevant to the area of study
- Appraise the use of and developments in area of visualization and medical image analysis.
- Organize and manage own learning and performance to suit own situation and style
- Prepare a clear project report in a given format using appropriate technical language

Assessment Strategies (Evening Class):

Components	**Description**	**Weightage Allocation (%)**
Overall Continuous Assessment	CLASS TEST 1	15
	CLASS TEST 2	15
Overall Examinable Components	ECA	70
Total		**100**