

Digital Imaging and Communication in Medicine

B.E. Sem. VIII [BIOM]

(Elective)

EVALUATION SYSTEM

	Time	Marks
Theory Exam	3 Hrs.	100
Practical & Oral	–	–
Oral Exam	2 Hrs.	25
Term Work	–	25

SYLLABUS

1. DICOM standard

DICOM introduction and negotiation, DICOM architecture and background, Importance of Information model, AE, SCU/SCP, FSR/FSC/FSU, DICOM Objects, DICOM Information Hierarchy, Modules, IODs and Information Entities

2. DICOM image quality

Pixel representation, Image pixel pipeline and presentation state GSDF, Overlays and Compression DICOM BMPs, Image Compression, JPEG and JPEG 2000 standards

3. DICOM Communications

DICOM SOPs, Unit Identification on n/w, Services and Data, DIMSE Example: C-Echo, Storage, Query: Find, C-Find IOD, C-Find DIMSE, C-Cancel, Modality Worklist, Basic DICOM Retrieval: C-Get, Advanced DICOM Retrieval: C-Move, DICOM: Ping, Push and Pull

4. DICOM Associations

5. DICOM Media: Files, Folders, and DICOMDIRs

DICOM File Format, DICOM File Services, Storing DICOM Data in PACS

6. DICOM Security

DICOM Hacking, Securing the Workflow, Securing the Data, Anonymization, Encryption, Encrypting the Data, Verifying Data Integrity, Validating Data Origin

7. DICOM SR

Introduction to DICOM SR, Comparing conformance statements, Gap Analysis

8. DICOM conformance statement

Reference Books :

1. Digital Imaging and Communications in Medicine (*Oleg S. Pianykh*) Springer
2. DICOM Basics (Third Edition) OTECH Publishing
3. DICOM Structured Reporting, Pixmed Publishing

