

CMJ UNIVERSITY
SHILLONG, MEGHALAYA.
Recognized by UGC

DETAILED SYLLABUS

Under Graduate Degree Program
BSc
(RADIO IMAGING TECHNOLOGY)

(YEARLY SYSTEM)

BRIT (DEGREE IN RADIO IMAGING TECHNOLOGY)

COURSE TITLE : DEGREE IN RADIO IMAGING TECHNOLOGY

DURATION : 3 YEARS

TOTAL DEGREE MARKS: 3300

FIRST YEAR

<i>COURSE TITLE</i>	<i>Paper Code</i>	<i>MARKS</i>		
		THEORY	PRACTICAL	TOTAL
BASICS OF HUMAN ANATOMY	BRIT-110	100	100	200
BASICS OF MEDICAL PHYSIOLOGY	BRIT-120	100	100	200
PATHOLOGY	BRIT-130	100	100	200
COMPUTER SKILLS	BRIT-140	100	00	100
COMMUNICATION SKILLS	BRIT-210	100	100	200
BASIC PHYSICS	BRIT-220	100	100	200
MS-OFFICE	BRIT-230 BRIT-230P	50	50	100
GENERATION AND PROPERTIES OF X-RAYS	BRIT-240	100	00	100

SECOND YEAR

<i>COURSE TITLE</i>	<i>Paper Code</i>	<i>MARKS</i>		
		THEORY	PRACTICAL	TOTAL
RADIATION HAZARDS AND PROTECTION	BRIT-310	100	100	200
DARK ROOM PROCEDURES	BRIT-320	100	100	200
PATIENT AND ROLE OF RADIOGRAPHER	BRIT-330	100	00	100
CLINICAL LAB	BRIT-340 L	00	100	100
GENERAL RADIOGRAPHY	BRIT-410	100	100	200
REGIONAL RADIOGRAPHY	BRIT-420	100	100	200
CLINICAL LAB	BRIT-430 L	00	100	100
PROJECT	BRIT-440	--	--	100

THIRD YEAR

<i>COURSE TITLE</i>	<i>Paper Code</i>	<i>MARKS</i>		
		THEORY	PRACTICAL	TOTAL
ULTRASOUND	BRIT-510	100	00	100
DOPPLER ULTRASOUND	BRIT-520	100	00	100
ANAESTHESIA IN DIAGNOSTIC RADIOLOGY	BRIT-530 L	100	00	100
CLINICAL LAB	BRIT-540L	00	100	100
COMPUTED TOMOGRAPHY	BRIT-610	100	00	100
MRI	BRIT-620	100	00	100
CLINICAL LAB	BRIT-630 L	00	100	100
PROJECT	BRIT-640	--	--	100

6 months internship in any Hospital or Nursing Home

Note:

Theory Paper: 30% Continuous Internal Assessment and 70% University examination.

Practical Paper: 30% Continuous Internal Assessment and 70% University examination.

Continuous Internal Assessment:

- 1) Two or three tests out of which minimum two Internal Assessment will be considered for Assessment 60% of Continuous
- 2) Seminars/Assignments/Quizzes Internal Assessment 30% of Continuous
- 3) Attendance, class participation and behavior Internal Assessment 10% of Continuous

FIRST YEAR

BRIT-110

BASICS OF HUMAN ANATOMY

Maximum Time	: 3 Hrs.	University Examination	: 70 %
Total Marks	: 100	Continuous Internal Assessment	: 30 %
Minimum Pass Marks	: 40%		

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Skeleton Structures of Bone, Vertebral Column, Upper Extremity, Lower Extremity, superior extremity, inferior extremity, ossification centers, bone of upper limb, radius and uina, surface marker of thorax abdomen, head and neck.

DRIT-110 P

BASICS OF HUMAN ANATOMY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 110.

BRIT -120

BASICS OF MEDICAL PHYSIOLOGY

Maximum Time : 3 Hrs.

University Examination : 70 %

Total Marks : 100

Continuous Internal Assessment : 30 %

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

General information:- The cell, membrane potential, some common terms used in physiology.

Blood:- Red blood corpuscles, hemoglobin, the leucocytes, immunity, origin and function of lymphocytes, reticule endothelial system, the platelets, homeostasis, coagulation of blood, the plasma proteins, blood groups.

Digestive system:- introduction to digestive system. Elementary functional anatomical considerations, the salivary glands, the stomach and its secretion, pancreas, the bile, the small intestine, movement of the alimentary tract, gastrointestinal hormones, apud cells.

Respiratory system:- functional anatomy, ventilation, control of ventilation, exchange of gases between the alveoli and pulmonary capillary blood, carriage of O_2 and CO_2 by the blood and their exchange at the tissue level, applied and environment physiology. lung defense mechanism. changes with age.

BRIT –120 P

BASICS OF MEDICAL PHYSIOLOGY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 120.

BRIT-130

PATHOLOGY

Maximum Time : 3 Hrs.
Total Marks : 100
Minimum Pass Marks : 40%

University Examination : 70 %
Continuous Internal Assessment : 30 %

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

The Cell in Health and Disease:- Introduction to Pathology, Cellular Structure and Metabolism, Etiology and Pathogenesis of Disease, Intracellular Accumulations and Disorders of Metabolism, Amyloidosis, Degenerations and Cell Death.

Inflammation and Healing, Immunity and Hypersensitivity, Infection and infestation:- Inflammation-Acute and Chronic, Granulomatous Inflammation, Healing, immunity and Hypersensitivity, Infection and Infestation.

Fluid and Haemodynamic Derangements:- Derangements of Body Fluids and Electrolytes, Haemodynamic Disorders due to Deranged Blood Volume, Haemodynamic Disorders of Obstructive Nature, Ischaemia and Infarction.

Growth Disorders and Neoplasia:- Adaptive Disorders of Growth, General Aspects of Neoplasia, Etiology and pathogenesis of Neoplasia, Clinical Aspects of Neoplasia, Common Specific Tumours.

BRIT-130 P

PATHOLOGY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 130.

BRIT-140

COMPUTER SKILLS

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Hardware & Software: CPU, RAM, SSD, Operating Systems, System Softwares, Application Software. Inside Computers. Computer Systems.

Input-Output devices: Monitor, Keyboard, Mouse, System Unit, Printer, Scanner.

Storage devices : Floppy disk, Hard disk, Cartridge tape, CD-ROM

Printers : Dot-Matrix, Inkjet, Laserjet, Colour printer, High speed printer, Label printer, Plotters.

PROGRAMMING LANGUAGE:-Compiler, Assembly Language, Machine Language.
Graphical user interface : Windows 3x, Program manager, Main & accessories program groups, Multiasking.

BRIT-210

COMMUNICATION SKILLS

Maximum Time	: 3 Hrs.	University Examination	: 70 %
Total Marks	: 100	Continuous Internal Assessment	: 30 %
Minimum Pass Marks	: 40%		

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Basic Skills: - Listening, Speaking, Reading and Writing.

Comprehension: - Reading Comprehension, Passages, Poems.

Listening Comprehension: - Talks, Reports, Poems

Writing Skills: - Paragraph Writing, Composition Writing, Report Writing, Application & Letter Writing

Grammar: - Simple, Compound and complex sentences, Co-ordinate clause (with, but or either-or, Neither-Nor otherwise or else), Subordinate clauses-noun clauses-as subjects object and complement: Relative Clauses (restrictive and non-restrictive clauses). Adverb clauses (open and hypothetical, Comparative Clauses

Simple present, progressive and present perfect, simple past, progressive and past perfect, indication of futurity, the passive (Sample present and past, present and past perfect and 'to' infinitive structure), Reported Speech: - (I) Declarative sentences, (ii) Imperatives (iii) Interrogatives –question, Yes/No Questions, Exclamation sentences, Modals (will, shall, should, would, ought to, have to/have got to, can, could, may-might and need), Verb structures (infinitives and gerundial)

BRIT-210 P

COMMUNICATION SKILLS

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 210.

BRIT-220

BASIC PHYSICS

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will compromise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Measurement, Basic Units, Derived Units, Electromagnetic Unit of current, Electrical charges, structure of Atom, etc
Magnetic Density, Magnetic line of force, Electromagnetic induction, Mutual and self Induction, AC Generator, DC Generator, Transformer, Electrical Insulation, Rectification
Characteristics of X-ray Beam, capacitor and capacitance
Transformer, Types of Transformer, Rectifier
Distribution of Electrical supply(single Phase, Three phase) Electric Insulation Earthing , High Tension cable.
Characteristics of X-ray beams, capacitor, Capacitance
Thermionic Emission, Photoelectric Emission, Diode value
Light Intensity, Quality Invisible spectrum, Electromagnetic Radiation, Theory of waves and quanta, properties of Electromagnetic radiation, radioactivity.

BRIT-220 P

BASIC PHYSICS

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 220.

BRIT-230

MS OFFICE

Maximum Time : 3 Hrs. University Examination :30%
Total Marks : 50 Continuous Internal Assessment:20%
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

MS Word : Creating documents, Formatting, Auto text, Auto correct, Tables, Page setup, Printing, Object linking & embedding, Spell check, Thesaurus, Mail merge, Word art, Clip art.
setup.

MS Excel : Creating workbooks & worksheets, Formulas & functions, Linking workbooks & worksheets, Cell references, Formatting, Creating charts, Data lists, Page setup, Printing.

MS Power Point : Creating slides with different layouts and templates, Inserting charts, Tables, Organisation charts, Pictures, Running a screen show, Presentation

BRIT-230 P

MS OFFICE

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 230.

**BRIT- 240
RAYS**

GENERATION AND PROPERTIES OF X-

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Introduction, Properties of X-rays, Productions of X-rays, Characteristics and Bremsstrahlung Radiation X-ray Spectrum, Effect of mA,kVp on shape of spectrum
X-ray Tube: cathode, anode, glass envelope, stator and rotor, tube housing
Method of heat dissipation, Tube Rating charts, cooling chart, engiography rating chart, cine radiographic rating charts,.
Basic X-Ray circuit transformers, transformer laws, autotransformer, high tension transformer and types used in X-Ray machine, rectification, self rectified circuit, half wave rectifier, full wave rectifier, limitations of single face generator.
Three face generator, three face six plus six rectifier, three face twelve plus twelve Rectifier, medium frequency generator

SECOND YEAR

BRIT-310

RADIATION HAZARDS AND PROTECTION

Maximum Time	: 3 Hrs.	University Examination	: 70 %
Total Marks	: 100	Continuous Internal Assessment	: 30 %
Minimum Pass Marks	: 40%		

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Introduction, Hazards, Newer radiation Units ICRP (90) Dose limit for occupational and public, principle and method of protection, Diagnostic X-ray Installation, Design location, layout, Room size, shielding, Illumination, Control Panel and Waiting Area, Choice of Equipment, Qualified and Trained staff.

Interaction of X-rays with matter, Coherent Scattering, Photoelectric and Compton, Pair production and photo Disintegration- Application of Compton, Photoelectric Effect in Diagnostic Radiology

BRIT-310 P

RADIATION HAZARDS AND PROTECTION

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 310.

BRIT-320

DARK ROOM PROCEDURES

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Dark room- size and installation, Ventilation, Electric wiring, pass box, Entrance, Illumination, Dry and wet size.

Film Construction, Types of film, Intensifying Screens, Screen characteristics, Rare Earth Screen, Fluoroscopic Screen, Luminescence and Safety in dark Room

Manual and Automatic Processing

Fault in Radiography and Remedy

BRIT-320 P

DARK ROOM PROCEDURES

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 320.

**BRIT-330
RADIOGRAPHER**

PATIENT & ROLE OF

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Clinical, Ethical and legal responsibility, Procedure in event of Accident, Radiographer and patient, General preliminaries to Examination, Patient on Stretcher, Anaesthetised patient, Hygiene in X-ray department, Drugs in X-ray department, Preparation of patient, Purgatives, Prevention of Intestinal Gas, Diabetic Patient, Infant, Mobile X-ray Set, Precaution in Patient, Oxygen Therapy, Intravenous Infusion, Fluid Traction, Operation Theatre, Radiation Safety, Ten day rule, Protective Measures, Importance of Records.

BRIT-340 L

CLINICAL LAB

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

In this lab session students will learn the dark room procedures. Learning General preliminaries to Examination, Patient on Stretcher, Intravenous Infusion, Fluid Traction Under the guidance of supervisor.

BRIT-410

GENERAL RADIOGRAPHY

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Unsharpness , Magnification, Distortion, Grids, Types of Grids, Grid Problem, Grid Movement, Air Gap technique, Image sharpness, photographic Density, Image Contrast, Intensifying Screen, Characteristic Curve, Speed of Film, Image quality, Steep range Radiography, Selective Filtration, High KV Radiography, Multiple Radiography, Subtraction.

BRIT-410 P

GENERAL RADIOGRAPHY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 410.

BRIT-420**REGIONAL RADIOGRAPHY**

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Positioning Terminology: Upper Limb, Lower Limb, Hip Joint, Pelvis, Vertebral Column, Chest, Anatomical positions, skull, Nasal Bone, Urinary Tract, Abdomen.

BRIT-420**REGIONAL RADIOGRAPHY**

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. BRIT 410.

BRIT-430 L**CLINICAL LAB**

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

The students will learn in this lab session working with radiography, general and regional, both under the guidance of supervisor.

BRIT-440

PROJECT

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

The Students will select a topic in their area of interest, in consultation with a supervisor, and carry out a project.

THIRD YEAR

BRIT-510

ULTRASOUND

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Introduction: Interaction of ultrasound with biological Material, Imaging Principle, Resolution, Transducers, Anatomy of Transducers, Mechanical and Electronic Real-time. Transducers Used in Clinical Ultrasound, Image, Intracavitary probes, Ultrasonic Display model, Controls, Artifact, Side lobe, ring down, Comet Tail Artifact, Risk and Benefits.

BRIT-520**DOPPLER ULTRASOUND**

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Scattering of Ultrasound by Moving Blood, CWD & PWD System, Advantages and Disadvantages. Duplex Scanner, Advantages and Colour Doppler Flow Imaging, Technical Consideration, Application of Doppler Ultrasound.

BRIT-530 RADIOLOGY

ANAESTHESIA IN DIAGNOSTIC

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Facilities Regarding General Anaesthesia in the X-ray Deptt.
Anaesthetic Problems Associated With Specific Techniques: Vascular Studies, Carotid Angiography, Venography, CT and NMR

BRIT-540 L

CLINICAL LAB

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

The students will learn to take ultrasounds and Doppler ultra sound under the guidance of supervisor.

BRIT-610

COMPUTED TOMOGRAPHY

Maximum Time : 3 Hrs. University Examination : 70 %
Total Marks : 100 Continuous Internal Assessment : 30 %
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Introduction to CT generator, advantages and disadvantages, CT system, X ray tube Detector, collimator.

Reconstruction techniques, CT number, display, monitor versus film, spiral CT, Basic Principles, interpolation techniques of system and components, technique selection, Advantages and limitations of spiral CT

Introduction: CT Generator, Advantages and Disadvantages, , CT system, X-ray Tube, Detector, Collimator, Reconstruction, Techniques, CT number, Display, Monitor Vs film, Spiral CT, Basics principles, Interpolation, Techniques- System and components, Techniques selection, Advantages and limitation of spiral CT

BRIT-620**MRI**

Maximum Time	: 3 Hrs.	University Examination	: 70 %
Total Marks	: 100	Continuous Internal Assessment	: 30 %
Minimum Pass Marks	: 40%		

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

MRI:- Physical principles, Advantages and limitation, Fundamentals of MRI, MRI Imaging, Parameter, Relaxation time, T2 relaxation time, Spin echo Techniques, TIW, T2W, SDW, Imaging, Fast spin, Echo inversion, Gradient Echo image, Slice Selection, Phase Encoding, Frequency Encoding, Main magnet coil, RF Transmitter Coil, MR and Safety.

BRIT-630 L**CLINICAL LAB**

Maximum Time	: 3 Hrs.	University Examination	: 70 %
Total Marks	: 100	Continuous Internal Assessment	: 30 %
Minimum Pass Marks	: 40%		

The students will learn to take MRI and CT of the mock /real patients under the guidance of supervisor.

BRIT-640**PROJECT**

Maximum Time	: 3 Hrs.	University Examination	: 70 %
Total Marks	: 100	Continuous Internal Assessment	: 30 %
Minimum Pass Marks	: 40%		

The Students will select a topic in their area of interest, in consultation with a supervisor, and carry out a project.