

No.UG/ 324 Aof 2005
Mumbai 400 032
16th August, 2005

The Director,
Garware Institute of Career Education and Development,
Kalina Campus,
Santaacruz (east),
Mumbai - 400 098.

Sir,

I am to inform you that your proposal for two year revised full time Under-Graduate Diploma course in Medical Radiography at the Garware Institute of Career Education and Development has been accepted by the Academic Council at its meeting held on 14th June, 2005 vide item No.7.10 and subsequently approved by the Management Council at its meeting held on 18th June, 2005 vide item No.4 and that in accordance therewith two-year full time revised Under-Graduate Diploma course in Medical Radiography has been introduced in place of the existing one and half month course by the University at the Garware Institute of Career Education and Development from the academic year 2005-2006.

Further, that in exercise of the powers conferred upon the Management Council under Section 54(1) and Section 55(1) of the Maharashtra Universities Act 1994, it has made the Ordinances 5544 and 5545 and Regulations 5210, 5211, 5212 and 5213 relating to the two-year full-time revised Under-Graduate Diploma course in Medical Radiography including scheme of papers, syllabus etc. is passed as per Appendix and that the same has been brought into force with effect from the academic year 2005-2006.

Yours faithfully,

A.C.7.10/14.06.05
M.C.4/18.06.05

for REGISTRAR.

7-10

14/6/05

UNIVERSITY OF MUMBAI

REVISED SYLLABUS FOR THE

UNDER-GRADUATE DIPLOMA

IN

MEDICAL RADIOGRAPHY

(W.E.F. 2005-2006)

CONDUCTED BY THE

CARWARE INSTITUTE OF CAREER EDUCATION

AND DEVELOPMENT

KALINA, SANTACRUZ (EAST),

MUMBAI - 400 028.

PREAMBLE :

Medical Radiography course was started in 1998 with lectures, practicals in Municipal Hospitals. They were taught by staff of these hospitals.

The technologies and imaging diagnostics has undergone substantial changes and the number of modalities for patient have also increased. This scenario has necessitated change in the syllabus and increasing its duration from one and half years to two years.

OBJECTIVES OF THE PROGRAMME:

To train candidate as radiographers for employment in hospitals and diagnostic centers.

UNIVERSITY OF MUMBAI

Ordinances And Regulations Relating To The Revised Syllabus For The UNDER - GRADUATE DIPLOMA IN MEDICAL RADIOGRAPHY

O - 5544 TITLE OF THE COURSE :

UNDER - GRADUATE DIPLOMA IN MEDICAL RADIOGRAPHY

O - 5545 ELIGIBILITY :

- a) Candidates who are XII (10+2) std. pass with at least 45% aggregate marks.
- b) Those candidates who are in service as a radiographer in a public institution and having at least 3 years of experience.
- c) Those candidates who are working as radiographer in a private hospital/clinic and having at least 3 years of experience.
- d) Application of persons working in public hospitals must be forwarded through the hospital authorities.

R - 5210 DURATION OF THE COURSE : 2 Years

R - 5211 INTAKE CAPACITY :

Batch of 25 (Twenty Five) Students - with 10% cover when necessary.

R - 5212 SELECTION PROCEDURE:

There will be a written test and personal interview. Academic qualification and credentials will be taken into account.

List of Subjects To Be Covered :

SEMESTER – I	
Paper No.	Name of the Paper
I	Human Anatomy & Physiology
II	Physics of imaging, equipment of imaging (conventional) and imaging and processing
SEMESTER – II	
III	Principles of radiography, radiographic positioning
IV	Practicals
SEMESTER – III	
V	Special investigations and contrast media
VI	Practicals
SEMESTER – IV	
VII	New Modalities in Imaging
VIII	Practicals and Project Report

SEMESTER WISE - EXAMINATION PATTERN

SEMESTER - I

No.	Paper	Final Test	Total (Marks)	Min. Lecture Hours
	Human Anatomy & Physiology	100	100	150
II	Physics of imaging, equipment of imaging (conventional) and imaging and processing	100	100	150

SEMESTER - II

No.	Paper	Final Test	Total (Marks)	Min. Lecture Hours
III	Principles of radiography, radiographic positioning	100	100	150
IV	Practicals	200	200	500

SEMESTER - III

No.	Paper	Final Test	Total (Marks)	Min. Lecture Hours
V	Special investigations and contrast media	100	100	150
VI	Practicals	200	200	500

SEMESTER - IV

No.	Paper	Final Test	Total (Marks)	Min. Lecture Hours
VII	New Modalities in Imaging	100	100	150
VIII	Practicals and Project Report	100	100	500

DETAILED SYLLABUS SEMESTER - WISE PLAN

(TOTAL HOURS OF FOUR SEMESTERS - 2250 HRS.)

SEMESTER - I

TOTAL
HRS.

150

PAPER I

HUMAN ANATOMY & PHYSIOLOGY

- 1] Medical Terminology with radiographic anatomy & pathology of common diseases.
 - a) Anatomical nomenclature
 - i. Terms of direction
 - ii. Body Planes
 - iii. Body cavities
 - b) Use of abbreviations and symbols.
 - c) Understanding orders and requests related to radiographic positioning and diagnostic procedures.
- 2] Skeletal system :
 - a) Outline of structure, development and growth of types of the bone.
 - b) Division of bones
 - i. Axial
 1. Skull
 - ii. Hyoid bone
 - iii. Vertebral column
 - iv. Thorax
 - ii. Appendicular
 1. Girdle bone
 - ii. Extremity bones.
 - c) Articulations (Joints) : Types and their functions.
- 3] Digestive system :
 - a) Primary organs of digestive system and their function
 - i. Oral cavity
 - ii. Esophagus
 - iii. Stomach
 - iv. Small bowel
 - v. Large bowel
 - b) Accessory organs of digestive system and their function.
 - i. Salivary glands
 - ii. Pancreas
 - iii. Liver
 - iv. G.B.
- 4] Respiratory system :
 - a) Structure of upper Respiratory Tract & their function.
 - b) Structure of Lower Respiratory Tract and their function.
- 5] Blood and Cardio-vascular system
 - a) Composition and function of blood.
 - b) Structure and function of Heart
 - c) Structure and function of blood vessels
 - i. Artery
 - ii. Vein
 - iii. Lymphatics
 - d) Blood circulation in the body and in the lungs, oxygen and CO₂ exchange in lungs and tissues
- 6] Urinary system :
 - a) Structure and function of kidney
 - b) Structure and function of lower urinary tract
 - i. Ureter
 - ii. Urinary bladder
 - iii. Urethra
- 7] Endocrine system : Various components of Endocrine system and major hormones secreted by them and their functions.
- 8] Reproductive system :
 - a) Male reproductive organs & their function
 - b) Female reproductive organs and their function.

SEMESTER III		TOTAL HRS.
PAPER - V	SPECIAL INVESTIGATIONS AND CONTRAST MEDIA	150
	1] First-aid 2] Contrast media 3] Management of adverse reactions/patient care 4] Radiography of digestive system - Plain and Contrast study. 5] Radiology of Urinary system - Plain, Contrast, IVU, MCU, DRU 6] Radiology of reproductive system - Hysterosalpingography, Vasography 7] Radiology of nervous system - Myelography, Dacrocystogram	
PAPER - VI	PRACTICALS	500
	1] Identification tables 2] Orals based on Semester III syllabus 3] Journal Keeping	

SEMESTER IV		TOTAL HRS.
PAPER VII	NEW MODALITIES OF IMAGING	150
	USG : 1] Physics of USG and equipment 2] Physics of C.D. 3] USG cross section anatomy - Abdomen - Pelvis - Obst. - Small parts, orbit - Musculoskeletal system - Skull, chest - Color Doppler i. Extremities (A, V) ii. Carotid iii. Abdomen iv. Renal v. Obs. Doppler 4] Limitations CT : 1] Physics of CT 2] Physics of Multislice CT 3] Physics of reconstructive/contrast CT 4] Cross section anatomy - Abdomen & pelvis : Plain and contrast - Chest : Plain, contrast & HRCT - Brain : Plain and contrast - Orbit : Plain and contrast - Temporal bone : Plain and contrast - PNS : Plain and contrast - Neck : Plain and contrast - Spine : CT myelo, Plain spine MRI : Syllabus to be finalized MAMMOGRAPHY : Syllabus to be finalized. INTERVENTIONAL RADIOLOGY : Arterial angiography, Venous angiography, Lymphangiography, Nonvascular Interventional Radiology.	
PAPER VIII	PRACTICALS AND PROJECT REPORT	500

R - 5213 STANDARD OF PASSING :

Rules for qualifying for the Diploma Course in Medical Radiography :

Semester I : Two theory papers of 100 marks each with minimum of 50% marks in each paper is required. Those who are unsuccessful can attend the second semester but will have to appear for supplementary exam. Maximum of two supplementary exams will be conducted for unsuccessful candidates. If the candidate fails in second supplementary exam he/she will be examined with the fresh batch next year.

Semester II : One theory paper of 100 marks and practical examination of 200 marks with minimum of 50% marks under each head is required.
For the unsuccessful candidates, two supplementary examinations will be conducted. Meanwhile he will continue attending Semester III. If the candidate fails in second supplementary exam he/she will be examined with the fresh batch next year.

Semester III : One theory paper of 100 marks and practical examination of 200 marks with minimum of 50% marks under each head is required. For the unsuccessful candidates, two supplementary examinations will be conducted. Meanwhile he/she will continue attending Semester IV. If the candidate fails in second supplementary exam he/she will be examined with the fresh batch next year.

Semester IV : One theory paper of 100 marks and practical examination of 100 marks with minimum of 50% marks under each head is required. For the unsuccessful candidates, two supplementary examination will be conducted. Failing which candidate has to appear for the regular batch semester IV exam.

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