Established by Govt. of Arunachal Pradesh vide Act 9 of 2012, the Arunachal University of Studies Act, 2012 Recognized as per u/s 2(f) of University Grants Commission Act, 1956 NH-52, Namsai, Arunachal Pradesh -792103

DIPLOMA IN MEDICAL RADIO IMAGING TECHNOLOGY – PART TWO

PART TWO			
S. No.	**Name of Module**	**Credits**	**Total Marks**
1	Radiographic Photography	5	100
2	Human Anatomy	5	100
3	English	5	100
4	Physics of Radiographic Equipment's	5	100
5	Practical	4	100
Total		**24**	

Module Name: RADIOGRAPHIC PHOTOGRAPHY

1. X-ray tubes general features and mobile equipment.
2. Care and maintenance of X-ray equipments and image intensifier.
3. To study effects of Kilo Voltage Peak (KVP) and Milli Ampere Second (MAS).
4. To check the safety of dark room.
5. To check the speed of intensifying screen.
6. To check the developing time test and function.
7. Silver recovery method.

Module Name: HUMAN ANATOMY

1. Human Anatomy - Physiology - Cell Structure - Division & Function – Cell Organelles - Tissue - Types of Tissues and Their Functions – Skeletal System**.**
2. Respiratory system - brief description of larynx - bronchi - lungs - cardiovascular system - anatomy and physiology of heart - arteries and veins - circulation - systematic and pulmonary (in brief) - brief review of chambers.
3. Urinary system - structure and function of the kidney - uterus - bladder - urethra and nephron give special emphasis on formation of urine - physiology and anatomy of male and female reproductive organs.
4. Endocrine - pituitary - thyroid - parathyroid - thymus - adrenals and pancreas.
5. Central nervous system - brain - spinal cord and meninges explain with its functions.

6. Skins - structure and functions - study and give small project on bones and cartilage hla system.
7. Digestive system - physiology and anatomy of mouth - stomach - intestine - absorption of food and its excretion - role of bile in digestion and excretion - liver function and a brief description of liver and biliary tree.

Module Name: ENGLISH

Unit 1: English Grammar

1. **An Introduction to Part of Speech :** Verb, Tenses, Voice, Direct and Indirect Forms of Speech.
2. Prepositions
3. List of Appropriate Preposition Used
4. Sentence
5. Synthesis of Sentences
6. Transformation of Sentences
7. Syntax
8. Punctuation
9. **Vocabulary :** Antonyms and Synonyms, Similar Words Distinguished, One Word Substitutions, More about words, Idioms & Phrases, Idioms.
10. **Common Error :** Some fundamental Rules for Correction, Sentences with error.
11. Comprehension

Unit 2 : Composition

1. Paragraph Writing
2. Letter writing
3. Essay Writing
4. The Essays

Module Name: PHYSICS OF RADIOGRAPHIC EQUIPMENT

1. Atomic structure as applied to generation of X-rays and radioactivity spectrum of diagnostic imaging and therapy X-ray.
2. Effects of variation of tube voltage current, filtration, III waveform and target material on X-ray production lows of radioactivity and decay schemes of different alpha, Beta, gamma ray. Megatron and position emitters as used in medicine especially in radiotherapy.

3. Artificial radionuclide generators employed in medicine in general and radiotherapy sources in particulars.
4. Interaction of radiation with matter attenuation absorption and scattering phenomena.
5. Photoelectric absorption Compton scattering pair-production and annihilation process ionization, effects of geometry of thickness of the absorber. Dependence on the nature and atomic number of the absorber and on radiation quality.
6. Transmission of X-ray through body tissues linear energy transfer.
7. Range of secondary electrons and electron build up relative amount of scatter from homogeneous and homogonous beam defining the passage through a patient.
8. Physical requirements of beam defining devices e.g. cones, diaphragm, collimators etc.
9. Units of radiation measurements specification of quality and half- valve thickness (HIV) and its measurements, filters and filtration.
10. Measurement of radiation and dosimeteric procedures.
11. Radiation detectors and their principles of working.
12. Definition of Bragg-peak , percentage depth dose, peak scatter factor, tissue air-ratio, tissue maximum ratio, scatter air ratio, isodose curves and radiation penumbra of different beams.
13. Wedge filters, wedge angle, hinge angle.
14. Compensator beams flattering filters, scattering foils.
15. Physical properties of phantom materials, bolus and substitutes.
16. Factor used for treatment dose calculations, Daily treatment time and monitor units calculation method physical aspects of electron and neutron therapy.

Module Name: PRACTICAL