

DIPLOMA IN MEDICAL RADIO IMAGING TECHNOLOGY – PART FOUR

PART FOUR			
S. No.	Name of Module	Credits	Total Marks
1	Laboratory Management and Ethics	5	100
2	Quality Assurance & Radiation Safety	5	100
3	Bio Medical Waste Management	5	100
4	Health Education & Health Communication	5	100
5	Practical	4	100
Total		24	

Module Name: LABORATORY MANAGEMENT AND ETHICS

LABORATORY MANAGEMENT

1. Introduction to Quality control
2. Total quality management framework
3. Quality laboratory processes, Quality assurance, Quality assessment, Quality control, Quality planning and Quality improvement
4. Costs of conformance and non conformance, appraisal costs, prevention costs
5. Internal quality control, basic steps, sources of error and their correction methods, CAPA - corrective action & preventive action
6. Sources of variation in laboratory results
7. Quality control charts, Levy- Jennings and Cusum charts
8. External quality control
9. Quality control programme, intrinsic and extrinsic and random errors
10. Current trends in laboratory accreditation, ISO certificate, West guard Rules
11. Demonstration of various methods of quality control.

AUTOMATION

1. Automation - Introduction, meaning, advantages, history
2. Continuous flow analyzers
3. Single channel continuous flow analyzers-advantages, disadvantages
4. Multi channel flow analyzers

5. Discrete auto analyzers - basic features, types, semi automated, fully automated
6. Batch analyzers
7. Random access analyzers (RAA)
8. Component steps in fully automated analyzers
9. Auto analyzers based on immunoassay techniques, Micro particle enzyme immunoassay (MEIA)
10. Various random access analyzers - Hitachi- 704, BM/Hitachi - 717
11. Centrifugal analyzers, ASCA
12. Dry chemistry analyzers
13. Dimension RxL clinical chemistry system
14. The Heterogeneous Immunoassay module components
15. Beckman Array 360 system
16. Mini Vidas analyzers
17. Immulite automated immunoassay analyzers
18. Latest trends in Automation, Biochips, Lab on a chip (LoC), Nano sensors advantages and disadvantages, PCR & its applications.

Module Name: QUALITY ASSURANCE & RADIATION SAFETY

1. Definition of radiation hazards maximum permissible dose and annual limit of intake (ALI) permissible dose levels on and around sealed source housing and installation principles of radiation protection and MPD of different ICRP rules, stochastic and non-stochastic effects.
2. Importance of 'ALARA' physical principles of design and planning of installation safe work practice in tele therapy and brachytherapy.
3. Shielding materials Radiation survey and personnel monitoring devices film badge, TLD badges pocket dosimeters

Module Name: BIO MEDICAL WASTE MANAGEMENT

1. Instruction in safety precaution as applicable to the trade. Awareness of environmental pollution, occupational health hazards, its causes, consequences, mitigation and remedies. Health impacts of bio chemical waste.
2. Practice on disease epidemiology. Vaccination and prevention of various diseases
3. Waste survey in hospital practice on categorization of hospital waste
4. Practice on segregation, Polly bags collection, bin, autoclaving, labeling. Use, care and maintenance of autoclave, Incinerator, Microwave Hydro pulping. Plasma Touch.
5. Practice on collection and handling of waste. Pretreatment.
6. Demonstration on hazards of various chemicals use in hospital Pathological, Microbiological and radiological waste.
7. Infection control system in hospital. Visit to ideal waste management site.
8. Record keeping and various form to be submitted to the government and waste auditing.

9. Practice on digging, vats, Pits, Trenches. Practice on composting, Vermi composting
10. Demonstration in recycling.
11. Demonstration on pretreatment of linen, Laundry. Central sterilization
12. Mechanical treatment and chemical disinfections store and off site transportation.
13. Liquid waste treatment using different technologies. Conventional treatment technologies. Alternative treatment technologies, Microwave, Rota clave, Hydro clave, ETP, Electron beam technology.
14. Occupational health programmers and safety practices
15. Preparation of paper for legal proceeding.
16. Estimate of various items of waste management based on No. of wards, No. of beds in each ward.

Module Name: HEALTH EDUCATION & HEALTH COMMUNICATION

Unit 1: Health education principles, theories, concept and practice.

Unit 2: Counseling as an approach for health education and awareness for family centered health education

Unit 3: Planning health education program within community services.

- Evaluation in health education.
- Evaluation versus assessment.
- Determining the focus of evaluation.

Unit 4: Interpersonal communication skills for special population.

- Handicapped.
- Chronic illness.

Unit 5: Technology in education.

- Health education in the information age.
- The impact of technology on teacher & learner

Unit 6: Characteristics of the learner.

- Determinants of learning.
- The educator role in learning.
- Developmental stages of learner.
- Developmental characteristics stages of childhood
- Role of the family in health education.

Unit 7: Instructional materials , setting & methods.

- Types
- Selection and evaluation .
- General principles.

Unit 8: Motivation, compliance and health behaviors of the learner.

- Motivation
- Compliance and control.
- Health behaviors of the learner.
- Selection of models for health education.

Module Name: PRACTICAL

Note: The Normal Rule and Regulation pertaining to the Examination and other issues will be applicable in Faculty of Paramedical Science as per Arunachal University of Studies Act 2012, Subsequent Statute and Rules & Regulations.