

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY,
TRIVANRUM -11

I. Name of the Programme:

Diploma in Cardiovascular and Thoracic Nursing

II. Objectives

Upon successful completion of the programme ,the student will

1. Demonstrate competency in providing quality care to patient with Cardiovascular and Thoracic diseases in different settings.
2. Demonstrate skill in clinical teaching and as ICU Managers.
3. Integrate relevant research findings into cardiacnursing practice.

III. Selection Criteria

Eligibility:

- (a) G.N.M. or B. Sc Nursing
- (b) For G.N.M. Candidates, one year experience as bedside nurse after passing the Course.
- (c) Professionally registered as a nurse by Indian Nursing Council or any recognized State Nursing Councils of India.

Age limit:

Upper age limit is 35 years, relaxable by 5 years for ex-service personnel with a service of not less than 5 years, SC/ST and sponsored candidates.

Selection:

Selection will be made strictly in order of merit on the basis of percentage of Marks obtained in the Common Entrance Examination, Objectives Structured Clinical Examination and viva voce to be held at the Institute.

IV. Number of seats:

10 per year and additional 1 sponsored candidate if they meet the selection criteria and sponsored by / Governmental agencies or Universities

V. **Organization of the course:**

Components of the curriculum

The following factors have been identified as the key components of the programme:

1. Structured programme curriculum
2. Evaluation
 - A. Comprehensive documentation of academic activities of candidate
 - B. Comprehensive evaluation of candidate
 - C. Periodic review and appraisal
3. Candidate's feedback

A. Duration

The course covers a period of 2 years (24 months). Theory and practical experience are integrated during the first year. The second year is meant to provide advanced professional experience enriched with academic activities.

B .Time Schedule for First Year and Second Year

(Clinical 30 hrs/week, Academic activities -12 hrs/ week)

First Year:

Theory	- 380 Hrs
Clinical	- 1320 hrs (integrated)
Total	- 1700 Hrs

Second Year

(Clinical 40 hrs/week, Academic activities 8 hrs/ alternate week)

Academic Activities	200 Hrs
Clinical	2400 Hrs
Total	2600 Hrs

C. Course of Studies

Distribution of hours and subject areas are as follows:

		Hrs
1	Nursing Foundations	55
2	CVT Nursing Medical	100
3	CVT Nursing Surgical	100
4	Nursing Education	25
5	Nursing Administration	25
6	Nursing research & Statistics	50
	Total	380

D. Clinical Rotation

First Year (30 hr/week)

		Hrs	Weeks of posting
1	Cardiac Surgical Intensive Care Unit	300	10
2	Comprehensive Acute Coronary Care unit+ Heart Failure ICU	300	10
3	Cardiac Catheterization Lab	60	2
4	Noninvasive diagnostic Labs+ Out patient department	90	3
5	Wards(surgical + Medical)	120	4
6	Congenital heart surgery ICU	180	6
7	Cardiac OT (Adult + Pediatric)	180	6
8	Orientation, Examination	90	3
	Total	1320	44 weeks

E. Second Year

(Clinical 40 hrs/week, Academic activities 8 hrs/ alternate week)

Academic Activities	200 Hrs
Clinical	2400 Hrs
Total	2600 Hrs

CLINICAL ROTATION

		Hrs	Weeks of posting
1	Cardiac Surgical Intensive Care Unit	320	8
2	Comprehensive Acute Coronary Care unit+ Heart Failure ICU	1120	14
3	Congenital Heart surgery ICU	320	6
5	Wards(Cardiac surgery, Congenital heart surgery)	400	10
6	Cardiac catheterisation lab	160	4
7	OT(Adult and Pediatric)	400	10
	Total	2400	52 weeks

VI. Essential Clinical/Practical activities

First Year

- Patient care assignment
- Writing Nursing care plans
- Writing Case studies
- Case presentations
- Writing observation records
- Planned Health teaching
- Preparing a Drug file
- Individual project work
- Completing Practical Manual

- Conducting Bedside rounds
- Practice teaching
- Developing supervisory skills
- Practice in clinical evaluation techniques

Second Year

The second year students will utilize their expertise in

- monitoring the first year students
- clinical skill training of first year students
- conducting clinical presentations
- conducting journal club
- Class room presentations
- Conducting nursing case studies
- Conducting a project from clinical side
- Publishing nursing articles in journals
- Participating in presenting papers in conferences and
- Maintain a log book/file of academic activities.

VII. Examination Scheme

First Year- INTERNAL ASSESSMENT- TOTAL 250 marks

Item	Marks
Practical Records	50
Assignments(Clinical)	50
Clinical Performance	100
Internal Theory exam	50
TOTAL	250

First Year- EXTERNAL ASSESSMENT(theory) (200 marks)

A. Theory External
Marks

First Year

Paper I CVT Nursing Medical (3hrs) 100

Paper II CVT Nursing Surgical (3 hrs) 100

SECOND YEAR

INTERNAL ASSESSMENT (TOTAL 300 marks)

Item	Marks
Classroom seminars	50
Research project	50
Practicals & Viva	50
Internal exam	50
Clinical performance	100
TOTAL	300

No external exam in second year.

C. Conditions for admission to Examination

The candidate

- Should have 85% attendance to get eligibility to appear for the Examination.
- Should have completed the assignments successfully.

The external examination will be at the end of one year as per present protocol. But the candidates who fail in the Examination may be allowed to continue the second year of the programme and appear for the supplementary examination at second year.

VIII. Standard of Passing

A candidate must obtain 50% marks in Theory papers/ Internal assessment and in the aggregate to be declared successful.

IX. Certificate

As per Institute format

Discontinuation : Provision for discontinuation of the programme may be allowed on payment of six months' stipend.

Syllabus for the Diploma in Cardiovascular and Thoracic Nursing

Course of Studies

1.	Nursing Foundations	55 Hrs
2.	CVT Nursing Medical	100 Hrs
3.	CVT Nursing Surgical	100Hrs
4.	Nursing Education	50 Hrs
5.	Nursing Administration	25 Hrs
6.	Nursing research & Statistics	50 Hrs
	Total	380 Hrs

1. Nursing Foundation-55 Hrs

Objective

To be familiar with the basic concepts of nursing process and the changing trends in the field of nursing and to apply this knowledge while caring patients in the critical care units.

Unit 1 The Nursing Process:

Concept, elements, Nursing care plans, Quality Patient care, Documentation, Nursing care records, Evaluation of Patient care, Nursing audit.

Unit 2 Health promotion

Holistic approach of patient management, Emerging Trends – Specialty nursing, Healthy lifestyle.

Unit 3 Outpatient and emergency management

Out patient management, Medico legal cases and brought dead, management of cardiac emergencies, Cardiopulmonary resuscitation.

Unit 4 Hospital environment

Therapeutic environment, Ward hazards, Hospital acquired infection, Infection control, Biomedical waste management, Stress management and crisis intervention, Ethical and legal issued related to patient care, Consumer Protection Act.

Unit 5 Communication

Process, types, channels of communication, barriers, improving effective communication, public relations in hospitals.

2. CVT Nursing Medical – 100 Hrs

Objective

To gain knowledge, skill and attitude to render effective safe nursing care to patients suffering from cardiovascular and thoracic conditions requiring medical management and to educate the public to prevent these conditions.

Unit 1 Review of Anatomy & Physiology

- Development of the cardiovascular system.
- Structure and function of the respiratory system.
 - The airways, Thorax, Diaphragm and Pleura
 - The lungs and alveoli
- Structure and function of the heart.
 - The layers and chambers of heart.
 - Coronary Circulation.
 - Electro physiologic property, conduction system.
 - Cardiac muscle. Mechanical property, The Cardiac Cycle
 - Regulation of cardiac function and blood pressure.
 - Factors affecting left ventricular function and cardiac output.
- Structure and function of blood vessels.
 - Systemic vasculature
 - Blood flow through large arteries
 - Arterial pressure
- Control of peripheral blood flow

Unit 2 Assessment

Assessment of patients with cardiovascular and respiratory disorders.

- Nursing History
- Physical Examination
- Invasive & non invasive diagnostic procedures
 - Laboratory Blood Tests, Cardiac enzymes, Blood gases.
 - Electro cardiography, Telemetry, Holter Monitoring, Telephonic ECG
 - Radiologic examination of chest

Echocardiography – Trans Thoracic Echo, Trans Esophageal Echo,
Doppler Echo, Doppler Ultra Sonography
Exercise Electrocardiography, Dobutamine Stress testing.
Magnetic Resonance Imaging, Nuclear Medicine in Diagnosis
Cardiac catheterization and Angiography, Coronary Angiography
Electrophysiologic study, Aortography, Plethysmography, Color Duplex
Imaging, Pulmonary function tests, Pulse Oximetry, Bronchoscopy and
Bronchogram

Unit 3: The Cardiac Nurse

Principles and organization of ICCU.
Current concepts of treatment
Role of a Nurse in the Coronary Care Unit
Cardiac Monitoring
Hemodynamic monitoring

Unit 4: Patient Health Problems and Management – Cardiac Nursing

Coronary artery disease- Pathogenesis, ACS and management
Cardiogenic shock
Infections – Pericarditis, Myocarditis, Endocarditis.
Cardiac rhythm disorders- Pacemaker Therapy, AICD, Defibrillation.
Rheumatic fever, Rheumatic heart disease.
Infective endocarditis.
Congenital cardiac anomalies- Acyanotic & Cyanotic
Cardiomyopathy
Hypertension, Hypertensive crisis
Heart failure, Acute Pulmonary edema
End stage cardiac disease- Management- Ventricular assist Diseases.
Sudden cardiac death
Other emergencies, special procedures
Selected Cardiovascular drugs
Interventional Cardiology- Radio Frequency Ablation, Device closure of
congenital cardiac conditions, PTMC, PTCA, Intracoronary Stent implantation

Unit 5: Cardiovascular Health Promotion and rehabilitation

Cardiac Nurse as a change agent
Cardiovascular Health promotion in the young
Life style modification
Primary prevention of cardiovascular disease
Special consideration for women with coronary artery disease.

Unit 6:Patient Health Problems and Management – Respiratory Nursing

- Physiologic anatomy, assessment – review.
- Acute respiratory failure, airway management, Ventilators.
- Adult respiratory distress syndrome.
- Chronic obstructive pulmonary disease.
- Chest trauma,Acute pneumonia, Atelectasis, Near Drowning
- Management of Pulmonary problems in medical patients, Oxygen therapy, Chest Physiotherapy, Nebulisation, Incentive Spirometry, Non invasive ventilation support – BIPAP, CPAP Mask.

Unit 7:Patient Health Problems and Management – Vascular Nursing

- Physiologic Anatomy-review
- Pathogenesis of vascular disease, assessment.
- Venous thromboembolism, Chronic Venous disease.
- Chronic ischemia, leg ulcers, Subclavian steal syndrome.
- Upper extremity arterial problems, Reno vascular Hypertension
- Thrombo angitis obliterans, Percutaneous vascular interventions.
- Medications used in patients with vascular problems.
- Prevention and Health promotion for vascular patient

3. CVTS Nursing Surgical – 100 Hrs

Objective

To gain knowledge, skill and attitude to render effective safe nursing care to patients suffering from cardiovascular and thoracic conditions requiring surgical management and to educate the public to prevent these conditions.

Unit 1: Review of Anatomy & Physiology

Unit 11: Assessment

Assessment of surgical patients with cardiovascular and respiratory disorders.

- Nursing History
- Physical Examination
- Invasive & non invasive diagnostic procedures – review
 - Laboratory Blood Tests
 - Electro cardiography
 - Radiologic examination of chest
 - Echocardiography Doppler Echo, Doppler Ultra Sonography.
 - Aortography
 - Plethysmography, Color Duplex Imaging
 - Pulse Oximetry
 - Hemodynamic Monitoring
 - Commonly encountered nursing diagnoses

Unit 3: Nursing Process Pertaining to Preoperative Nursing

- History of cardiac surgery
- The perioperative nurse
- Preoperative assessment
- Cardiac operation theater
- Principles of open heart surgery, Cardiopulmonary Bypass.
- Common open heart surgeries, indications, selection of patients.
- Fluid and Electrolyte regulation, Acid base balance.
- Artificial ventilation.

Unit 4: The Cardiac Nurse

- The Cardiac surgical intensive care unit.
- The Cardiac nurse- special qualities
- Infection Control, universal precautions
- Special equipment-Monitors, ventilators
- Special Procedures, BLS, ACLS
- Psychosocial factors in Cardio Vascular Critical Care
- Hierarchy of needs
- Stress factors for patients
- Coping Mechanism for patients
- Stressors for nurses
- Coping Mechanism for nurses
- Nurse-patient relationship

Unit 5: Patient Health Problems and Management – Cardiac Nursing

- Congenital defects-Cyanotic and acyanotic- Palliative and corrective Surgeries.
- Acquired Valvular disease – Valvular surgeries, Valve replacement surgeries.
- Coronary Artery disease-Myocardial Revascularisation.
- Surgery for cardiac dysrhythmias.
- Preoperative and Intra operative assessment and management.
- Post operative management of patients undergoing cardiac surgery- Immediate, Intermediate and home care-detection and prevention of complications.
- Special care for children undergoing cardiac surgical procedures

Unit 6: Patient Health problems and Management – Thoracic Nursing

- Surgical diseases of the chest, Thoracic Surgeries.
- Clinical assessment of Pulmonary system.
- Special diagnostic and therapeutic procedures.

- Neoplastic lung disease – Lung surgeries, special care of patients undergoing pneumonectomy.
- Pre, Intra and Post Operative management of patients undergoing Thoracic surgeries, postoperative Complications – detection and management.
- End stage lung disease and Lung transplantation.

Unit 7: Patient Health Problems and Management – Vascular Nursing

- Aetopathogenesis of vascular disease
- Assessment of the patient with vascular diseases.
- Special diagnostic and therapeutic procedures
- Management of patients with acute Thromboembolic critical ischemia.
- Aortic aneurysms – Surgery of Aorta
- Surgical management of patients with chronic ischemia-Peripheral arterial insufficiency, Arterial reconstruction of lower extremity.
- Amputation in the vascular patient.
- Pre, Intra and post operative management of patients undergoing vascular surgery.
- Health promotion for patients with vascular disease, Vascular Rehabilitation.

Unit 8 :Newer Developments and Advanced Technologies in the Management of Cardiac Patients

- Blood conservation in cardiac surgery.
- Minimally Invasive Direct Coronary Artery Bypass.
- Coronary Surgery on Beating Heart/CABG off pump.
- Video assisted Thoracic Surgery.
- Robotic Surgery
- Trans Myocardial Laser Revascularisation
- Extra Corporeal membrane Oxygenator
- Ventricular assist device, Intra Aortic Balloon Pump.
- Transplant Surgery

4.Nursing Education – 50 Hrs

Objective

To acquire knowledge about teaching and learning so as to assume the responsibility of an educator and mentor in critical care units.

Unit 1 Introduction to teaching and Learning

- Teaching and Learning
- Principles of teaching
- Methods of teaching

Unit 2 Introduction of Learning

- Meaning, learning Process
- Principles and characteristics of learning
- Factors influencing learning
- Learning Theories

Unit 3 Lesson Planning

- Principles
- Essentials of a good lesson plan
- AV aids in teaching – preparation and use

Unit 4 Library Science

- How to use a library
- Classification and Cataloguing
- Bibliography
- Computerized medical information system

Unit 5 Evaluation

- Meaning, Purpose, Planning, Problems
- Nature of instruments used to evaluate
- Advantages & Disadvantages of each instrument.

PRACTICAL: Each student will conduct a minimum of three practice teaching in the class. and two supervised clinical presentations using different methods of teaching.

5.NURSING ADMINISTRATION- 25 hrs

Objectives

To acquire knowledge about administration so as to assume the responsibility of managing critical care units.

Unit – 1 Nurse as a manager

Concept of supervision and management

Qualities of a supervisor

Principles of management and methods of supervision

Responsibilities of Nurse manager in critical care units

Unit- 2 Role in Patient care

Planning Care

Maintaining therapeutic environment

Supplies and equipments

Records and Reports

Assigning duties and responsibilities

Evaluation of patient care

Unit -3 Role as an educator

Planning and conducting Clinical Teaching

Supervising members of health team

Unit- 4 Role as an administrator

Delegation of responsibilities

Performance appraisal

Planning Research and project work assignments

Coordination and cooperation

6 NURSING RESEARCH AND STATISTICS-50 HRS

Objectives : To apply the basic concepts of research methodology in professional practice through project studies and publishing research findings

Unit-1 Introduction to research and nursing research

Meaning of research
Importance of research and nursing research
Research process
Scope of research in nursing
Characteristics of research
Qualities of research
Classification of research
Ethical consideration of research
Developing enquiring mind

Unit-2 Research problems and research questions

Identification of problems, sources and selection of problems
Different approaches and research problem
Statement of problem and objectives
Review of literature
Operational definitions, Variables, Assumptions, Hypothesis
Populations, Sample and sampling techniques
Delimitations

Unit-3 Methods of data collection

Techniques
Questioning interviews
Observations, Tool
Interview schedule, Questionnaire
Observation check lists, Rating Scale
Preparation of research tool, Validity and reliability of tool
Pilot study
Process of data collection

Unit – 4 Analysis and interpretation of data:

Use of statistics
Measures of central tendency – Mean, median, and mode
Use of descriptive statistics- frequency
Use of tables and graphs- histogram, pie chart, bar graph, frequency graph,
Interpretation of data

Unit – 5 Writing of research reports

Main findings

Conclusions

Implications in nursing education , nursing service and nursing administration

Recommendations

Abstract

References

Publication of research findings

Methods of Teaching

Lecturers, Discussion, Demonstration, Seminars, Problem based learning, Nursing process application, Clinical Teaching.

Method of Evaluation

Sessional tests, Written assignments, Assessment of seminars and project, Term paper, Clinical presentation, Evaluation of clinical performance, Practical examinations and viva voce.

Practical

Each student will undertake a small project in the cardio thoracic clinical area and submit typed copy of the project report. An article based on the project work needs to be prepared and send for publishing in a professional journal

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