

**REGULATIONS AND SYLLABUS
FOR
POST GRADUATE DIPLOMA IN RESPIRATORY CARE MANAGEMENT**

Offered by

**BHARATHIAR UNIVERSITY, COIMBATORE
FROM 2007-2008**

Under The

**UNIVERSITY INDUSTRY INTERACTION AND
CONSULTANCY SERVICE CENTER (UIICSC)
COLLABORATIVE PROGRAMME**

POST GRADUATE DIPLOMA IN RESPIRATORY CARE MANAGEMENT

Course Title and Summary:

The course shall be called the “POST GRADUATE DIPLOMA IN RESPIRATORY CARE MANAGEMENT”. It will be an intensive full time course, which will include bedside classes, classroom lectures and practical training in the ICU, HDU / CCU / CTU, Neuro – ICU, Respiratory labs and Operation Theaters.

At the end of the course the candidate will be fully trained in the respiratory care of critically ill patients, which will include Ventilator and other life support systems monitoring and settings, Nebulisers, intubations, pulmonary function testing and advanced cardio - respiratory physiotherapy management in the critical care setup.

The programme will be conducted in a hospital recognized by the Bharathiar University under the UIICSC collaborative programme. Candidates shall abide by the stipulated timings, discipline, rules and regulations of the hospital to which they will be assigned for the entire course.

Regulations:

1) Eligibility for admission

Candidates admitted to the Post Graduate Diploma in Respiratory Care Management should be either a qualified physiotherapist or nurse. He/she should have passed the B.P.T. degree examination / B.Sc Nursing / B.Sc Zoology of a recognized university or equivalent there to.

2) Course Duration :

The duration shall be 12 months Full Time. The candidates admitted to this course would spend at least six hours a day and 30 hours per week in the Bharathiar University Recognized Hospitals.

3) Course of study and scheme of Examinations

The period of certified study for the POST GRADUATE DIPLOMA IN RESPIRATORY CARE MANAGEMENT shall be a full time course and its duration shall extend over a period of one academic year (non- semester). There shall be one examination at the end of the course, which will consist of theory, practical and oral components.

SCHEME OF EXAMINATION

Paper No.	Subject	Credits	Max Marks	
			Int.	Ext.
01	Applied Basic Sciences	6	60	90
02	Pathology and Microbiology	6	60	90
03	Cardio – Respiratory Diseases (Including Harmacology)	6	60	90
04	Equipment and Techniques	6	60	90
05	Cardio – Respiratory Rehabilitation	6	60	90
06	Project Report and Viva Voice (Practical)	6	60	90

4) Practical Training

The candidate admitted to the course shall be put through a total of 900 hours of intensive practical and clinical training in the hospital critical care set up and respiratory lab, in order to gain a thorough understanding of the functioning of the various Therapeutic and monitoring equipment being used there.

5) Requirement to appear for the examination

A candidate should put in a minimum of 90% attendance to be eligible to appear for the examinations.

6) Medium of instruction:

The medium of instruction throughout the course and the examinations shall be conducted in English only.

7) Passing Minimum

To pass, a candidate shall secure a minimum of 50% percent marks individually in the practical and Theory Examinations. A candidate failing in any one component will have to reappear for that particular component only in the supplementary examination, which will be held within one month of the declaration of the results.

8) Classification of successful candidates

A candidate securing 75% and above, aggregate in the theory and practical examinations, in the first attempt, shall be deemed to have passed the examination with distinction.

A candidate securing 60% and above aggregate in the theory and practical examinations, in the first attempt, shall be deemed to have passed the examination with first class.

Other successful candidates shall be declared to have passed the examination in Second Class.

9) Conferment of degree.

A candidate, who has passed all the examinations as prescribed, shall be eligible to receive the degree of “Post Graduate diploma in Respiratory Care Management” from the Bharathiar University.

10) Ranking

Candidates who have passed all the examinations in the very first attempt and securing the first position in aggregate marks for every 10 candidates appearing in the examinations ranking (with the maximum of 10 positions) will be awarded university ranks.

11) Revision of regulations and syllabus.

The syllabus and regulations of the course are subject to modification by the concerned board every year.

12) Question paper pattern.

Theory examination will be for 90 marks with the following components.

- Multiple choice / one word answers : 15 x 1 = 15 marks (no choice)
- Short notes (100 words/ one paragraph) : 5x5 = 25 marks (either/or type)
- Elaborate (300 words or 1½ paper) : 5x10 = 50 marks (either/or type)

Award of Internal Assessment Marks

Internal assessment marks for theory will be awarded based on the Marks obtained in the three Internal Assessment Tests and based on the candidate's regular performance in the practical area and one practical exam marks.

PAPER 1
APPLIED BASIC SCIENCES

Aim: At the end of the course, the candidate should have a thorough knowledge of the structural and functional aspects of the human cardio – vascular and respiratory systems.

Unit: 1

Applied cardiac anatomy: Anatomy of the heart, pericardium, conducting systems.

Unit: 2

Applied cardiac Physiology: Cardiac cycle, Nervous control of the heart, Cardiac rhythm, Haemodynamics, Blood Pressure.

Unit: 3

Applied respiratory anatomy: Anatomy of the Upper and lower airways, Lungs, Pleura, surface marking of the lungs, broncho- pulmonary Segments, Muscles of respiration and their Nerve supply.

Unit: 4

Applied respiratory Physiology: Mechanisms of respiration, cough Reflex, nervous and chemical control of respiration, lung volumes and Capacities.

Unit: 5

Neonatal and Pediatric cardio-respiratory Anatomy and Physiology, Basic vitals and their significance.

REFERENCE BOOKS:

1. Williams PL, Warwick R, Dyson M, Bannister LH (eds) Gray's Anatomy. 36th edition. Churchill Living stone, New York, 1980.
2. Human anatomy Regional and applied Volume – 1 - B.D Chaurasia's, 3rd CBS Publishers and distributions New Delhi, 1995.
3. Text book of Medical Physiology - Arthur C. Guyton, John E. Hall, 9th edition W.B. Saunders Company U.S.A 1996.
4. Essentials of Medical physiology - Anil Baran singha mahapatra, 1st edition current Books international Mumbai. 1998.
5. Clinical Anatomy for Medical students - Richard s. Snell, 5th edition Little, Brown and company. U.S.A 1992.

PAPER 2
PATHOLOGY AND MICROBIOLOGY

Aim: At the end of the course, the student should know about the pathogenesis and detailed pathology of the various diseases affecting the cardio-vascular and respiratory systems. The students should also know about the various types of organisms affecting the respiratory system and in the critical care set up.

Unit: 1

General lectures on micro-organisms- Classification/ shapes/

Unit: 2

Sterilisation and asepsis.

Unit: 3

Infection- source of infection, spread of infection various pathogenic bacteria, viruses and diseases caused by them (UTI, URI, Meningitis etc)

Unit: 4

Pathology – General- Cell injury and adaptation, inflammation and repair, fluid and hemodynamic derangements.

Unit: 5

Pathology of the blood vessels and heart, respiratory system, GIT and endocrine system.

REFERENCE BOOKS:

1. Fletcher: Diagnostic Histopathology of Tumours – Christopher DM Fletcher 2007 (3rd edition)
2. Lakhani: Basic Pathology: An Introduction to the Mechanisms of Disease – Sunil R Lakhani, Susan A Dilly, Caroline J Finalyson and Ahmet Dogen 2003 (3rd ed),
3. Appleton & Lange's Review of Microbiology & Immunology – Dr William W Yotis, Tadayo Hashimoto, Harnold J. Blumenthal – 1997.
4. Medical Microbiology – Michael A. P Faller, Patrick R.Murray, Ken S. Rosenthal – 2005.

PAPER 3
CARDIO - RESPIRATORY DISEASES (INCLUDING HARMACOLOGY)

Aim: At the end of the course, the student should know about the various pathological conditions affecting the cardio-vascular and respiratory systems, the medical management of these conditions, and a basic knowledge of the various drugs used in the management of cardio-respiratory disorders.

Unit: 1

Respiratory diseases – COPDs, RLDs, Near Drowning, Pulmonary Embolism, Myasthenia Gravis, ARDS, Refractory Hypoxemia.

Unit: 2

Cardiac Diseases – Congenital Heart diseases, Valvular heart diseases, Coronary arterial diseases, Diseases of the conduction system of the heart, Cardio – myopathies.

Unit: 3

Drugs used in Cardio – respiratory diseases.

Unit: 4

Diagnostic Techniques – Radiology, ABG analysis etc.

Unit: 5

Respiratory complication of surgery -Atelectasis, pulmonary aspiration, post operative pneumonia etc...

REFERENCE BOOKS:

1. Medicine Prep manual 1st edition - George Mathew .K. B.I Churchill Livingstone Pvt Ltd. New Delhi 1995.
2. Cardiopulmonary physical therapy, a guide to practice - Scot Irwin, Jan Stephen tecklin, 3rd edition, Mosby. U.S.A.
3. Principles and practices of cardiopulmonary physical therapy - Donna frownfelter, Elizabeth Dean (eds), 3rd Mosby. U.S.A.
4. Fundamentals of Respiratory care - Craig L. Scanlan, Egan;s, 6th edition Mosby, 1995.
5. Principles of internal medicine - Jean D. Wilsion, Eugene Braunwald, Kurt J. Isselbacher, Robert G. Peters Dorf, Joseph B. Martin, AnthonyS. Fauci, Richard K. Root (eds) Harrison's, 12th edition,by monotype compositions company U.S.A 1991.
6. Essentials of cardiopulmonary physical therapy - Steven sadowsky .H Ellen. A. Hillegass, W.B Saunders Company U.S.A.
7. Test Book of respiratory Medicine - John F. Murray, Jay A. Nadel, 2nd edition W.B. Saunders Company U.S.A. 1994.
8. A text Book or cardiovascular medicine - Braunwald (edr), Heart disease, 4th edition W.B Saunders Company U.S.A 1992.
9. Text book of critical care - Shoemaker, Ayres, Grenvik, Holbrook, 4th edition, W.B Saunders Company 1984.

PAPER 4
EQUIPMENT AND TECHNIQUES

Aim: The candidate should gain a thorough understanding of the functioning of the various types of equipment used in the critical care set up and in the various procedures both diagnostic and therapeutic, used in the cardio-respiratory management of patients.

Unit: 1

Gas Physics – states of matter and gas laws, gas flows and diffusion, Pressure Measurements, Factors affecting Oxygenation and Ventilation

Unit: 2

Equipments – Medical gas pipelines, Flow meters, Humidifiers, Defibrillators, Capnograph, pulse Oximeter, Manual resuscitators, Pulmonary function testing and their Significances.

Unit: 3

Artificial airways, various routes of O₂ administration and its selection criteria, Lung expansion therapies (incentive spirometry, IPPB, Positive pressure airway therapy) Aerosol therapy and generators, ICD system.

Unit: 4

Classification of mechanical ventilators, Indications of Mechanical ventilation, Therapeutic goals of Mechanical ventilation, Modes of ventilation, Indications for accessory modes of ventilations, Complications of Mechanical ventilation, Mechanism of monitoring patient on mechanical ventilators, Pharmacologic agents used with mechanical ventilation, Mechanisms for trouble- shooting the ventilator.

Unit: 5

Weaning – Parameters, Nutritional factors in relation to weaning.

REFERENCE BOOKS:

1. Egan's fundamentals of Respiratory care - Craig L. Scanlan, 6th edition Mosby, 1995.
2. Principles and practices of cardiopulmonary Physical therapy Donna frownfelter, Elizabeth Dean (eds), 3rd Mosby. U.S.A.
3. Essentials of cardiopulmonary physical Therapy - Steven sadowsky .H Ellen. A. Hillegass, W.B Saunders Company U.S.A.
4. Cardiopulmonary physical therapy - Scot Irwin, Jan Stephen Tecklin, , a guide to Practice, 3rd edition, Mosby. U.S.A.
5. Respiratory care equipment - Steven P. McPherson. 5th edition Mosby. 1992
6. Mechanical Ventilation - Neil R. McIntyre, Richard D. Branson, W. B. Saunders Company 2001.

PAPER 5
CARDIO-RESPIRATORY REHABILITATION

Aim: At the end of the course, the candidate should know the various physiotherapy techniques used in the management and rehabilitation of cardio-respiratory disorders.

Unit: 1

Pulmonary care management in critical care unit – principles of intensive care therapy, CPR / Advanced life support, Medical gas therapies, Hand ventilation, Postural drainage, Percussion, Active cycle of breathing, autogenic drainage, breathing exercises, Endo-Tracheal suctioning, care of ventilated patients.

Unit: 2

Neonatal and pediatrics cardio pulmonary care.

Unit: 3

Pulmonary rehabilitation - principles of pulmonary rehabilitation and its implication on COPDs, RLDs, and occupational lung diseases.

Unit: 4

Cardiac rehabilitation – pre and postoperative counseling and rehabilitation after cardio thoracic surgeries, post MI rehabilitation.

Unit: 5

Pre – and post pulmonary rehabilitation program and its progression in cardio pulmonary surgical conditions and general surgeries.

REFERENCE BOOKS:

1. Egan’s fundamentals of Respiratory care - Craig L. Scanlon,, 6th edition Mosby, 1995.
2. Principles and practices of cardiopulmonary - Physical therapy Donna Frownfelter, Elizabeth Dean (eds), 3rd Mosby. U.S.A.
3. Essentials of cardiopulmonary physical - therapy Steven sadowsky .H Ellen. A. Hillegass, W.B Saunders Company U.S.A.
4. Cardiopulmonary physical therapy - Scot Irwin, Jan Stephen Tecklin, , a guide to practice, 3rd edition, Mosby. U.S.A.
5. Cardiopulmonary physical therapy - Joanne Watchie, , a clinical W.B. Saunders Company U.S.A
6. Physical rehabilitation assessment and treatment - Susan O Sullivan, Thomas J. Schmitz 4th Jaypee brothers New Delhi 2001.
7. Physiotherapy for respiratory and cardiac problems - Jennifer A Pryor, Barbara A. Webber (eds). 2nd edition Churchill Livingstone Edinburgh 1998
8. Practical pulmonary rehabilitation - Morgan and Singh, Chapman & Hall Medical, London UK 1997. (1st Edition)