



YENEPOYA

(DEEMED TO BE UNIVERSITY)

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YENEPOYA INSTITUTE OF ALLIED HEALTH SCIENCES

PROGRAM OUTCOMES AND COURSE OUTCOMES

UNDERGRADUATE PROGRAM

BACHELOR OF SCIENCE

RESPIRATORY CARE TECHNOLOGY

ATTESTED

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PROGRAM OUTCOMES
UNDERGRADUATE PROGRAM
BACHELOR OF SCIENCE
RESPIRATORY CARE TECHNOLOGY

(K -Knowledge, S -Skill, A -Attitude)

- PO 1 Upon successful completion of the undergraduate course, students will have developed a broad knowledge in the field of evaluation, diagnosis and management of different conditions of the cardiopulmonary system(K, S, A)
- PO 2 Ability to function effectively in the health care setting as a member of the healthcare team. (S,A)
- PO 3 Knowledge and application of cardiopulmonary diagnosis and monitoring(K,S)
- PO 4 Knowledge and application of cardiopulmonary pharmacology and pathophysiology (K, S)
- PO 5 Management of respiratory care plans for adult, neonatal and pediatric patients. (K,S, A)
- PO 6 Demonstrate techniques to maintain the personal hygiene needs of oneself and the patient (K,A)
- PO 7 The ability to communicate effectively in oral, written and visual forms.(S,A)
- PO 8 Ability to stay calm and make the right decisions in adverse conditions.(S, A)
- PO 9 Knowledge of the respiratory care code of ethics and ethical and professional conduct. (K,A)
- PO 10 Knowledge and application of mechanical ventilation and therapeutics. (K,S)
- PO 11 Patient Assessment: General Examination: Vitals, ECG Recording. (K, S)
- PO 12 Ability to perform BLS & ACLS (K,S,A)
- PO 13 Equipment handling and medication preparation.(S,A)
- PO 14 Analyzing and sampling arterial blood gases and Airway management.(K,S)
- PO 15 Ability to treat patients by using a variety of methods, including chest physiotherapy postural drainage and clearance of secretions and aerosol medication such as bronchodilators, mucolytic, mucokinetics.(K, S)

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COURSE OUTCOMES
UNDERGRADUATE PROGRAM
BACHELOR OF SCIENCE
RESPIRATORY CARE TECHNOLOGY
SEMESTER I

	CO	Description
Anatomy	CO 1	Comprehend the gross, functional and applied anatomy of various structures in the human body along with their inter-relationships.
	CO2	Correlate the structure with the functions.
	CO3	Competent to apply anatomical knowledge to perform minor technical procedural skills
Physiology	CO 1	To broadly understand the physiological structure of each organ system and its physiological functions
	CO 2	To understand broadly the clinical abnormalities of organs and its clinical physiological implications
	CO2	Understanding the properties of biomolecules, their function and biochemical process involved in health and disease
Biochemistry	CO 1	Understanding the basic principles and procedures in specimen collection, reagent preparation and testing in Clinical laboratory
	CO2	Understanding the properties of biomolecules, their function and biochemical process involved in health and disease
	CO3	Understanding the importance of nutrition in health and disease
Introduction To Respiratory Therapy Profession	CO 1	Explain the history of respiratory care and its professional organizations.
	CO 2	Understand the role and scope of the respiratory therapist in the health care sector
		Understand the Academic and Career Perspectives in Respiratory

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CO 3	Therapy
CO 4	Understand and explain the standards of professional practice.
CO 5	Recognize the ethical and legal aspects implied in respiratory care profession
CO 6	Understand the importance of developing communication skills and the need for maintaining interpersonal and interprofessional relationships.
CO 7	Discuss the standards of clinical practice including health promotion and infection control practices
CO 8	Understand the importance of various clinical domains and practice in Respiratory Therapy,

English and Communication skills

CO	Description
CO 1	Provide sufficient information to ensure that the patient/bystander can participate and respond appropriately
CO2	Clearly discuss the diagnosis and options with the patient.
CO3	Negotiate appropriate treatment plans in a sensitive manner that is in the patient's and society's interests.

Constitution of India

CO	Description
CO 1	Understanding the structure of Constituent Assembly
CO 2	To understand the fundamental duties and rights of Indian citizen
CO 3	Knowledge regarding electoral process of India
CO 4	Understand the importance of directive policies of state policies
CO 5	Understand the structure and composition of Indian Constitution, and the ways of amending the constitution
CO 6	Stimulate the roles of each of the three branches of government
CO 7	Understand the provisions in the constitution for different area

SEMESTER II

	CO	Description
Pathology	CO 1	To be able to define the medical terms, define and classify disease and understand the concepts of the disease.
	CO 2	Able to describe the causes and mechanism of common diseases that occur during the routine work and also changes seen in different individuals and various organs and fluids

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Able to enumerate the laboratory tests eg: urine, blood, body fluids and its application on various diseases.

	CO	Description
Microbiology (MB)	CO 1	Understanding of role of microbial agents in health and disease
	CO2	Understand and practice various methods of Sterilisation and disinfection
Introduction to Respiratory Therapy Equipment	CO	Description
	CO 1	Identify the equipment used in the RT department and the principles behind it.
Cardiopulmonary Applied Anatomy & Physiology	CO	Description
	CO 1	Anatomy of airways and cardiovascular system
	CO 2	Mechanics of breathing & circulation
	CO 3	Lung volumes and capacities & oxygen and carbon-dioxide transport
Healthcare	CO	Description
	CO 1	Describe the concepts of health, illness and national health policy various welfare programmes in India.
	CO 2	Explain the concepts of Nursing
	CO 3	Explain the basic, special needs of the patient, bandaging and first aid for common emergencies
	CO 4	Explain infection control
EVS	CO	Description
	CO 1	Students will be able to learn about environment, factors affecting it, environmental ethics and its protection
	CO 2	Students will be able to Describe a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
	CO 3	Students will be able to Critically analyse technical subject matter (written or oral) for scientific merit apply learned environmental knowledge and understanding to solve technical /research problems in new contexts.

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Sociology

CO	Description
CO 1	Able to understand the meaning of sociology, its relationship with other disciplines and also to gain knowledge on the sociological methods of investigations
CO 2	Able to understand social factors and its role in health and disease
CO 3	Able to understand the meaning, importance and agencies of socialization
CO 4	Able to understand the concept and role of social groups in health, sickness and rehabilitation
CO 5	Able to understand the meaning of family and its role in health, nutrition and sickness among members
CO 6	Able to understand the meaning, features and health hazards of rural and urban communities
CO 7	Able to understand the concept of culture and health and their relationship
CO 8	Able to understand the meaning of social change, factors of social change, social change and stress , social change and health
CO 9	Able to understand the meaning of social problems and types of social problems in the society
CO 10	Gain knowledge on the social security and social legislation measures for the disabled
CO 11	Able to understand the meaning of social work and role of medical social worker

Medical Ethics

CO	Description
CO1	To understand the fundamentals of Medical Ethics
CO2	To Understand the Ethical Issues in Professional conduct of Healthcare
CO3	To gain knowledge in the Medico legal aspects of health records in healthcare practice
CO4	To be able to explain the respective ethical challenges and potential conflicts of interest in the functional departments of the organization
CO5	To increase the awareness and knowledge of the value dimensions of interactions with the patients, colleagues, relations and public.
CO6	To Understand and respect the rights of the patient and the duties and responsibilities of the healthcare people

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SEMESTER III

	CO	Description
General Pharmacology	CO 1	Learn the actions, uses, adverse effects and mode of administration of drugs related to human body
Respiratory Therapy Science- I	CO 1	Describe the importance of infection control in respiratory care practices
	CO 2	Identify a cardiac arrest scenario and perform basic cardiac life support
	CO 3	Explain the importance of gas laws and physics
	CO 4	Understand oxygen and other medical gas delivery systems; application and the related adjuncts
	CO 5	Describe concept and application of humidity and aerosol therapy
	CO 6	Apply the skills required to select the appropriate therapeutic modalities based on patient's need in clinical settings
Patient assessment and diagnostics	CO 1	Identify the elements needed for patient encounter for those receiving or being evaluated for respiratory care.
	CO 2	Demonstrate knowledge and skills for history taking and interviewing patients with cardiopulmonary complaints.
	CO 3	Describe the causes and the common characteristics of cardiopulmonary symptoms.
	CO 4	Obtain, evaluate, and monitor vital signs of patients with cardiopulmonary deficiencies
	CO 5	Perform physical examination in patients evaluated for respiratory care.
	CO 6	Interpret clinical laboratory data, electrocardiograph and Chest X-ray
	CO 7	Explain the assessment, plan, implementation, and evaluation method and the problem, intervention. plan method for documentation of patient assessment data
Cardiopulmonary Diseases I	CO 1	Enumerate the pathological changes that occurs in the pulmonary system of patients suffering from cardiopulmonary diseases
	CO 2	Describe and diagnose clinical features and outline the treatment of cardiopulmonary disease
	CO 3	Appreciate the role of the respiratory therapist in the management and diagnosis of cardiopulmonary disease

Clinical Training I	CO	Description
	CO 1	Practical demonstration for the topics learnt during theory classes
	CO 2	Clinical postings to enhance clinical skills learnt during practical

Kannada	CO	Description
	CO 1	To comprehend and communicate in simple Kannada and improve their vocabulary of daily usage
	CO2	to understand distinct sounds and improve pronunciation
	CO3	to form simple sentences to talk to patients, bystanders and the localities

SEMESTER IV

	CO	Description
Cardiopulmonary pharmacology	CO 1	Understand the fundamental scientific principles of aerosolized medications to treat lung diseases.
	CO 2	Discuss various classification of drug used to treat bronchospasm and cause bronchodilation, their mechanism of action, effects and side effects on cardiopulmonary systems
	CO 3	Discuss various types of mucous controlling agents and their mode of actions
	CO 4	Understand the mechanism of drugs used to control asthma symptoms including Corticosteroids and NSAIDs
	CO 5	Discuss the various anti-infective drugs used to treat patients with infectious lung diseases, their clinical effectiveness via using the inhalational route
	CO 6	Describe all the drugs used to manage life threatening conditions including arrhythmias and cardiac arrest.

Respiratory Therapy Science II	CO	Description
	CO 1	Understand and perform Advanced cardiac life support
	CO 2	Understand various therapeutic and technical aspects of Airway management
	CO 3	Understand the importance of various systemic monitoring and physiological monitoring

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CO 4 Apply the skills required to select the appropriate therapeutic modalities based on patient's need in clinical settings

Cardiopulmonary Diseases II

CO Description

- CO 1 Enumerate the pathological changes that occurs in the pulmonary system of patients suffering from cardiopulmonary diseases
- CO 2 Describe and diagnose clinical features and outline the treatment of cardiopulmonary disease
- CO 3 Appreciate the role of the respiratory therapist in the management and diagnosis of cardiopulmonary disease

CO Description

Mechanical Ventilation I (MV I)

- CO 1 Understand the basic terminologies and technical concepts of Mechanical Ventilation
- CO 2 Differentiate between Volume Ventilation, Pressure Ventilation and other hybrid modes
- CO 3 Identify Indications, complications, and physiologic effects of mechanical ventilation
- CO 4 Apply appropriate ventilator, initial mode & ventilator parameters
- CO 5 Understand the concept of Non invasive Ventilation
- CO 6 Identify various types of technical and clinical problems encountered during mechanical ventilation of critically ill patients, and describe the steps that can be used to protect a patient when problems occur.

CO Description

Clinical Training II

- CO 1 Practical demonstration for the topics learnt during theory classes
- CO 2 Clinical postings to enhance clinical skills learnt during practical

CO Description

Human rights and gender equity

- CO1 Basic Knowledge of Human Rights and its function and authorities in society and industry women's status, issues and gender equity

Biostatistics

CO Description

- CO 1 At the end of the course students will be familiar with statistics methods and techniques.
- CO 2 After the completion of the course students will be able to manage the data with various validation and cleaning process

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- CO 3 At the end of the course students will be familiar with different types of data analysis techniques.
- CO 4 At completion of the course students can able to operate the statistical software to describe the data with proper presentation.

SEMESTER V

	CO	Description
Pulmonary Function Tests and Imaging	CO 1	Identify all common pulmonary function testing lab equipment's
	CO 2	Explain the methods for performing quality control of PFT system
	CO 3	Perform spirometry, DLCO tests
	CO 4	Perform body plethysmography and bronchial provocation tests
	CO 5	Interpret thoracic imaging like Chest X ray, CT Chest
	CO6	Perform and interpret Lung, Airway and Diaphragmatic ultrasound
	CO 7	To assess the validity of all of the above-mentioned tests
	CO 8	Analyse and interpret all the above-mentioned tests.
Mechanical Ventilation II (MV II)	CO	Description
	CO 1	Describe ventilation approaches for various diseases.
	CO 2	Explain the effect of mechanical ventilation on pulmonary and extra pulmonary system
	CO 3	Describe the concept of Long-term Ventilation
	CO4	Identify the normal and abnormal ventilator graphics
	CO5	Select appropriate weaning criteria for ventilated patients
	CO6	Identify and troubleshoot ventilator and patient related problems.
Essentials of Critical Care	CO	Description
	CO 1	Explain the initial and ongoing assessment of critically ill or injured patients
	CO 2	Understand common ICU cases, disease presentation and the disease process
	CO 3	Identify and understand diagnostic tests that are commonly used in ICUs, that includes imaging and laboratory tests
	CO 4	Evaluate the findings of assessment and interpret abnormal physiological parameters and observations to identify

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patients who are likely to have a critical physiological decline

- CO 5 Assist and be the part of ICU team, in dealing with sudden deterioration of the critically ill patient
- CO 6 Develop and integrate clinical skills and academic knowledge in order to practice advanced assessment, life support and therapeutic skills, within the scope of practice
- CO 7 Prepare equipment and devices related to cardiorespiratory support and airway management in emergency and elective scenarios
- CO 8 Act as a patient advocate, when it comes to patient safety and quality assurance in the caring of critically ill patients
- CO 9 Engage in the delivery of high-quality evidence based multidisciplinary care as either a team member or team leader, upon the crisis scenarios

Clinical Training III CO Description

- CO 1 Practical demonstration for the topics learnt during theory classes

SEMESTER VI

	CO	Description
Neonatal and Paediatric Respiratory Care	CO 1	Describe about the fetal lung development and the gas exchange
	CO 2	To train the student about neonatal resuscitation guidelines
	CO 3	Perform the assessment and monitoring of the neonatal patient.
	CO 4	Differentiate and describe pathophysiology, salient features and treatment of major neonatal disorders
	CO 5	Differentiate the anatomic and physiological differences between adult and child
	CO 6	Perform initial assessment of a pediatric patient at bedside
	CO 7	Describe the pathophysiology, salient features and treatment of pediatric cardiopulmonary disorders.

	CO	Description
Cardiopulmonary	CO 1	Describe the historical perspective of pulmonary rehabilitation
	CO 2	Explain the basic concepts of pulmonary rehabilitation

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Rehabilitation and Home Care	CO 3	Select and assess the chronic respiratory disease patients for pulmonary rehabilitation and family education
	CO 4	Discuss on nutritional assessment and support
	CO 5	Explain the behavioral medicine psychological, cognitive and social factors in pulmonary rehabilitation
	CO 6	Enumerate the preventive aspects for the patient with chronic lung disease
	CO 7	List the exercises in the rehabilitation of patients with respiratory disease
	CO 8	Discuss on home mechanical ventilation
	CO 9	Have the background knowledge and skills required for the rehabilitation of non – COPD lung disease and rehabilitation for the pediatric patient with pulmonary disease
	CO 10	Have the background knowledge and skills required for physical medicine interventions and rehabilitation of the patient with neuromuscular weakness and surgical therapy for COPD patients.

CO Description

Sleep Medicine and Polysomnography	CO 1	Understand the evolution and scope of sleep medicine
	CO 2	Discuss the importance of sleep and its normal physiology
	CO 3	Understand the different stages of sleep and its changes to sleep architecture
	CO 4	Learn about various sleep disorders and management strategies
	CO 5	Explain the indications of polysomnography and patient preparation
	CO 6	Understand and learn the aspects of conducting sleep study, scoring and reporting
	CO 7	Understand the main electrodes and other biopotentials used in sleep studies
	CO 8	Discuss the diagnostic criteria and interventional practices for each sleep disorders
	CO 9	Understand the role of pharmacology in sleep medicine.

CO Description

Clinical Training IV	CO 1	Practical demonstration for the topics learnt during theory classes
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