



Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Department of Allied Medical Sciences
2020/2021

**Study Plan of Bachelor Degree in Respiratory
Therapy**

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Vision:

The vision of the department is to lead, through academic and research excellence, regional and national health care delivery in the field of radiological sciences, optometry, paramedicine and respiratory therapy.

Mission:

In line with the mission of the Jordan University of Science and Technology and the College of Applied Medical Sciences, the mission of the Allied Medical Sciences Department came to be a pioneer in developing various allied medical sciences by keeping pace with the scientific progress witnessed in the medical arena to graduate qualified competencies to meet the emerging needs in the fields of allied medical sciences.

Objectives:

1. Providing the student with scientific knowledge regarding respiratory therapy.
2. Preparing and qualifying students at the bachelor's level in the field of respiratory therapy
3. Providing the student with scientific and practical knowledge of the main interests in the field of respiratory therapy
4. Developing the student's capabilities in the field of community service
5. Work to raise the values and ethics of the profession of respiratory therapy.

Job Opportunities:

1. Centers and laboratories specialized in conducting pulmonary function tests and other tests related to the heart and nervous system that affect the effectiveness of the respiratory system.
2. Respiratory therapist in hospitals.
3. Care homes; Chest clinics and similar clinics that provide respiratory and diagnostic care services.
4. Drawing and analyzing arterial blood for blood gases in specialized laboratories.
5. Emergency departments in various hospitals and intermediate and critical care departments.

Study Plan of Bachelor Degree in Respiratory Therapy

Numbering and coding system of courses of the study plan

Course Coding

The following codes are used to designate courses:

Table 1

Department		Level/year	Field	Sequence
A	B	x	y	z

The Department codes (A, B) are as follows:

Table 2

Code	Department	Code	Department
PARA	Paramedic	AS	Audiology and Speech Therapy
PT	Physical Therapy	RA	Radiologic Technology
OT	Occupational Therapy	ADS	Allied Dental Sciences
OPT	Optometry	LM	Medical Laboratory Sciences
TDEN	Dental Technology	RTH	Respiratory Therapy

Course Numbering

- The Respiratory Therapy courses are tabled and numbered in such a manner to recognize each course regarding its subject area, year or level, and semester offered.
- Ex. RTH xyz: The **RTH** symbol in the course number denotes Respiratory Therapy and (xyz) is a 3-digits number:

A. The first digit denotes the year level of the course according to student's study plan as follows:

Table 3

Code	Level/year
1	First
2	Second
3	Third
4	Fourth

B. The second digit denotes the course field subject as follows:

Table 4

Number	Specialization
0	Basic and introductory courses
1	Principles and properties of respiratory therapy
2	Respiratory therapy and its techniques
3	Ventilator
4	Critical Care
5	Respiratory care
6	Heart and respiratory system
7	Aid for the heart and lungs
8	Clinical training
9	Basic and introductory courses

C. The third digit denotes sequence of semester during which the course is offered according to the study plan. In way that odd numbers are given to the first and summer semesters while even numbers are given to second semesters.

Example: RTH 102 introduction into Respiratory therapy means:

Table 5

RTH	1	0	2
Respiratory Therapy	Level (first year)	Field (introductory course)	Sequence (second semester)

Study Plan of Bachelor Degree in Respiratory Therapy

A Bachelor of Science (B.Sc.) degree in Respiratory Therapy at JUST is awarded in accordance with the statute stated by JUST regulations for B.Sc. awarding issued by the Dean's Council based on the adjusted 1987 law for awarding scientific degrees and certifications at JUST after completing (137) credit hours successfully.

The study plan composed of the following:

Table 6

Requirement	Credit hours		
	Compulsory	Elective	TOTAL
University requirements	16	9	25
Faculty requirements	24	-	24
Department requirements	88	-	88
TOTAL	137	9	137

A. University Requirements (25) Credit Hours and branch out into:

1. University Compulsory Courses (16 Credit Hours).
2. University Elective courses: (9) Credit hours.

Course No.	Course title	Credit hours	Theoretical	Practical	Teaching method
ARB 101	Arabic language	3	3	-	Hybrid

HSS 119	Entrepreneurship and innovation	2	2	-	On-line
LG 112 ⁽¹⁾	English language 2	3	3	-	Hybrid
HSS 110	Social Responsibility	3	2	1	On-line
MS 100 ⁽²⁾	Military sciences	3	3	-	Hybrid
HSS 129	General Skills	2	2	LG 112	On-line

B. Faculty Requirements: (24 credit hours) distributed as follows:

Table 7

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite or co-request	Teaching method
ADS 491	Administration and Quality Assurance in Applied Medical Sciences	3	3	-	--	On-Line
BT 103	General Biology	3	3	-	--	On-Campus
BT 107	General Biology Laboratory	1	-	2	BT 103 (or concurrent)	Hybrid
CHEM 103	General Chemistry	3	3	-	--	On-Campus
CHEM107	General Chemistry Lab	1	-	2	CHEM 103 (or concurrent)	Hybrid
PT 218	Gross Anatomy & Histology	3	2	2	BT 103, BT 107	Hybrid
MED 230A	Human Physiology	3	3	-	BT 103	Hybrid

MED 230B	Human Physiology (Lab)	1	-	2	MED 230A (or concurrent)	Hybrid
PH 311	Biostatistics	2	2	-	--	On-Line
PARA 391	Ethics in Applied Medical Careers	1	1	-	--	On-Line
LM 491	Scientific Research Methods	1	1	--	PH 311	On-Line
LM 493	Research Project	2	--	6	LM 491(or concurrent)	Hybrid
TOTAL		24	18	14		

C. Department requirements: (88 Credit Hours) distributed as follows:

1. Department compulsory requirements courses from the Faculty of Science and Arts (10 credit hours); distributed as follows:

Table 8

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite (or Co)	Teaching method
PHY 103	General physics	3	3	-	--	On-Campus
MATH 102a	Calculus 2 (biological sciences student)	3	3	-	--	On-Campus
CHEM 262	Biochemistry	3	3	-	CHEM 103, BT 103	On-Line
CHEM 266	Biochemistry (lab)	1	-	2	CHEM 262 (or concurrent)	Hybrid
TOTAL		10	9	2		

2. Department compulsory requirement courses from the Faculty of Medicine (3 credit hours); distributed as follows

Table 9

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite (or Co)	Teaching Method
MED 212	Pathology for student of Medical Laboratory Sciences	3	3	-	MED 218, MED 230b	Hybrid
TOTAL		3	3	-		

3. Department compulsory requirements from the program of Respiratory therapy (75 credit hours); courses are distributed as follows:

Table 10

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite	concurrent	Teaching method
RTH102	Introduction to Respiratory Therapy	2	2	-	--	--	Hybrid
RTH211	Physiology and Anatomy of the Heart and Respiratory System	3	3	-	P.T 218, MED 230A	--	Hybrid
RTH212	General respiratory care	2	2	-	RTH211	--	On-Campus
RTH214	General Respiratory Care Practical	1	-	2	--	RTH212	On-Campus
RTH216	Patient care	2	2	-	RTH211	--	Hybrid
RTH218	Patient care practical	1	-	2	--	RTH216	On-Campus
RTH224	Respiratory care techniques	2	2	-	--	RTH212	On-Campus
RTH226	Respiratory Care Techniques Practical	1	-	2	--	RTH224	On-Campus
RTH311	Cardiorespiratory pharmacology	2	2	-	RTH218		On-Campus
RTH313	Respiratory Physics	2	2	-	PHY 103	--	Hybrid
RTH327	Respiratory Therapy	2	2	-	--	RTH311	On-Campus
RTH329	Respiratory Therapy Practical	1	-	2	--	RTH327	On-Campus
RTH334	Managing artificial respirators	2	2	-	RTH327	--	Hybrid
RTH336	Managing artificial respirators practical	1	-	2	--	RTH334	On-Campus

RTH343	Pulmonary radiography	2	2	-	--	--	Hybrid
RTH345	Pulmonary radiography practical	1	-	2	--	RTH343	On-Campus
RTH350	Cardio-respiratory monitoring and special techniques	3	3	-	RTH313&RTH345	--	On-Campus
RTH352	Respiratory care for children and newborns	3	3	-	RTH345	--	On-Campus
RTH354	Emergency Respiratory Care	3	3	-	--	--	On-Campus
RTH362	Cardiac and respiratory diseases	3	3	-	RTH313	--	On-Campus
RTH383	Clinical training 1	3	-	6	RTH224	--	On-Campus
RTH386	Clinical training 2	3	-	6	RTH383	--	On-Campus
RTH413	Pulmonary rehabilitation and the elderly	3	3	-	RTH352	--	On-Campus
RTH444	Cardiopulmonary critical care	3	3	-	RTH354	--	On-Campus
RTH463	Measurement of heart and lung function	2	2	-	RTH336	--	On-Campus
RTH464	Diagnostics of cardiac and respiratory diseases	3	3	-	RTH362	--	On-Campus
RTH465	Measurement of heart and lung function practical	1	-	2	--	RTH463	On-Campus
RTH467	Clinical Psychology	2	2	-	RTH336	--	Hybrid
RTH469	Respiratory Care management	3	3	-	--	RTH467	Hybrid
RTH475	Advanced Heart and Lung emergency	3	3	-	RTH354	--	On-Campus
RTH479	Advanced Heart and Lung emergency practical	1	-	2	--	RTH475	On-Campus
RTH487	Clinical training 3	3	-	6	RTH386	--	On-Campus
RTH488	Clinical training 4	6	-	12	RTH487	--	On-Campus
TOTAL		75	52	46			

Study Plan

FIRST YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent	Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent
			Lecture	Lab						Lecture	Lab		
PHY 103	General physics (On-Campus)	3	3	-	--	--	HSS 119	Entrepreneurship and Innovation (On-Line)	2	2	-	--	--
BT 103	General Biology (On-Campus)	3	3	-	--	--	PT 218	Gross Anatomy & Histology (Hybrid)	3	2	2	BT 103, BT 107	--
BT 107	General Biology Lab (Hybrid)	1	-	2	BT 103 or co-requisite	--	MS 100	Military Sciences (Hybrid)	3	3	-	--	--
CHEM 103	General Chemistry (On-Campus)	3	3	-	--	--	RTH 102	Introduction to Respiratory Therapy (Hybrid)	2	2	-	--	--
CHEM 107	General Chemistry Lab(Hybrid)	1	-	2	CHEM 103 or co-requisite	--	MATH 102a	Calculus (for Bio.Sci.Student) (On-Campus)	3	3	-	--	--
HSS 110	Social Responsibility (On-Line)	3	3	-	--	--	MED 230A	Human Physiology (Hybrid)	3	3	-	BT 103	--
LG 112	English language 2 (Hybrid)	3	3	-	Passing LG 99 or passing the English Admission Exam with no less than 50%	--	MED 230B	Human Physiology Lab (Hybrid)	1	-	2	BT 107	MED 230A
TOTAL		17	15	4			TOTAL		17	15	4		

SECOND YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent	Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent
			Lecture	Lab						Lecture	Lab		
ARB 101	Arabic language (Hybrid)	3	3	-	--	--	MED 212	Pathology for student of Medical Laboratory Sciences (Hybrid)	3	3	--	MED 218, MED 230a, b	--
PH 311	Biostatistics (On-Line)	2	2	-	--	--		University elective (Hybrid)	3	3	-	--	--
HSS 129	General Skills (On-Line)	2	2	-	--	--	RTH 212	General respiratory care (On-Campus)	2	2	-	RTH 211	
CHEM 262	Biochemistry (On-Line)	3	3	-	CHEM 103, BIO 103	--	RTH 214	General Respiratory Care Practical (On-Campus)	1	-	2	--	RTH 212
CHEM 266	Biochemistry (Lab) (Hybrid)	1	-	2	CHEM 262 (or Co)	--	RTH 216	Patient care (Hybrid)	2	2	-	RTH 211	--
	University elective (On-Line)	3	3	-	--	--	RTH 218	Patient care practical (On-Campus)	1	-	2	--	RTH 214
RTH 211	Physiology and Anatomy of the Heart and Respiratory System (Hybrid)	3	3	-	P.T 218, MED 230A	--	RTH 224	Respiratory care techniques (On-Campus)	2	2	-	--	RTH 212
							RTH 226	Respiratory care techniques practical (On-Campus)	1	-	2	--	RTH 224
Total		17	16	2			Total		15	12	6		

THIRD YEAR

THIRD YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent	Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent
			Lecture	Lab						Lecture	Lab		
RTH 311	Cardiorespiratory pharmacology (On-Campus)	2	2	-	RTH 218		RTH 334	Managing artificial respirators (Hybrid)	2	2	-	RTH 327	--
RTH 313	Respiratory Physics (Hybrid)	2	2	-	PHY 103	--	RTH 336	Managing artificial respirators practical (On-Campus)	1	-	2	--	RTH 334
RTH 327	Respiratory Therapy (On-Campus)	2	2	-	--	RTH 311	RTH 350	Cardio-respiratory monitoring and special techniques (On-Campus)	3	3	-	RTH 313,RTH345	--
RTH 329	Respiratory Therapy Practical (On-Campus)	1	-	2	--	RTH 327	RTH 352	Respiratory care for children and newborn (On-Campus)s	3	3	-	RTH345	--
RTH 343	Pulmonary radiography (On-Campus)	2	2	-	--	--	RTH 346	Emergency Respiratory Care (On-Campus)	3	3	-	--	--
RTH 345	Pulmonary radiography practical (On-Campus)	1	-	2	--	RTH 343	RTH 362	Cardiac and respiratory diseases (On-Campus)	3	3	-	RTH 313	--
RTH 383	Clinical training 1 (On-Campus)	3	-	6	RTH 224	--	RTH 386	Clinical training 2 (On-Campus)	3	-	6	RTH 383	--
PARA 391	Ethics in applied medical careers	1	1	--	--	--							
LM 491	Scientific research methods (On-Line)	1	1	-	PH 311	--							
	University elective (On-Campus)	3	3	-	--	--							
Total		18	13	10			Total		18	14	8		

FOURTH YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent	Course No.	Course name	Total credits	Weekly hours		Prerequisite	concurrent
			Lecture	Lab						Lecture	Lab		
RTH 413	Pulmonary rehabilitation and the elderly (On-Campus)	3	3	-	RTH 352	--	RTH 444	Cardiopulmonary critical care (On-Campus)	3	3	-	RTH 354	--
RTH 463	Measurement of heart and lung function (On-Campus)	2	2	-	RTH 336	--	RTH 464	Diagnostics of cardiac and respiratory diseases (On-Campus)	3	3	-	RTH 362	--
RTH 465	Measurement of heart and lung function practical	1	-	2	--	RTH 363	RTH 488	Clinical training 4 (On-Campus)	6	-	12	RTH 487	--
RTH 467	Clinical Psychology (Hybrid)	2	2	-	RTH 336	--	LM 493	Research project (Hybrid)	2	6	-	LM 491 (or concurrent)	--
RTH 469	Respiratory Care management (Hybrid)	3	3	-	--	RTH 467							
RTH 475	Advanced Heart and Lung emergency(On-Campus)	3	3	-	RTH 354	--	ADS 491	Administration and quality assurance in applied medical sciences (On-Line)	3	3	-	--	--
RTH 475	Advanced Heart and Lung emergency practical (On-Campus)	1	-	2	--	RTH 475							
RTH 387	Clinical training 3 (On-Campus)	3	-	6	RTH 386	--							
Total		18	13	10			Total		17	15	12		

Course Description

RTH 102 Introduction to Respiratory Therapy (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: none):

Introduce the job of a respiratory therapist as a member of the medical team. Gas laws, mechanics, physiology, and medical equipment terms are taught to students. It also provides the student with an in-depth understanding of medical gas management, moisture and aerosol treatment, protective devices, airway management, and infection prevention. Students will also hear about the mechanical devices used to maintain private airways and the various facilities for respiratory and cardiac arrest.

RTH 211 Physiology and Anatomy of the Heart and Respiratory System (3 credit hours, 3 hours Theoretical, 0 hour practical) (Pre-requisite: P.T 218, MED 230A):

This course is a study of the physiological mechanisms of the cardiopulmonary system, including a review of respiratory and pulmonary system anatomy, ventilation physics / mechanics, gas diffusion, internal and external respiration physiology, oxygen transport, carbon dioxide transport and elimination, ventilation / perfusion relationships; And nervous control of ventilation.

RTH 212 General Respiratory Care (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 211):

The course introduces the history and global significance of respiratory care practice, including the initial skills and treatments used. Major topics include global history that contributed to the development of the profession; The global need for high-quality respiratory care; Concepts of infection prevention and control; Study basic respiratory physics; Storage, distribution and treatment of medical gases; Moisture and aerosol management. Patient monitoring and pulmonary expansion, airway clearance, aerosol therapy.

RTH 214 General Respiratory Care Practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 212):

Practical laboratories will provide hands-on experience in the clinical application of the discussed therapeutic methods. An introduction to the clinical application of basic respiratory procedures such as oxygen administration, aerosol therapy, positive airway pressure therapy, arterial puncture, and other monitoring and diagnostic procedures.

RTH 216 Patient Care (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 211):

This course develops the basic knowledge and skills of caring for patients undergoing breathing procedures. Topics include patient communication, patient assessment, patient safety, and respiratory care provider in a healthcare facility. Emphasis was also placed on the basics of infection control and methods of medical sterilization, especially when dealing with patients who undergo some invasive procedures. Finally, a discussion of ways to deal with patients with special conditions such as trauma, cerebrovascular accidents and stroke.

RTH 218 Patient Care Practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 216):

This course provides practical experience for students to apply knowledge of GAT 216. Psychomotor skills are developed to prepare the student for the clinical hospital experience. Apply basic skills to care for patients in respiratory care, and apply sterilization and infection control methods.

RTH 224 Respiratory Care Techniques (2 credit hours, 2 hours Theoretical, 0 hour practical) (Concurrent: RTH 212):

This course is the Respiratory Care Procedures Series. Students will develop knowledge and skills in the use of medical gas delivery devices. In this course, students develop skills in the application and delivery of medicinal gases, hydration and inhalation medications.

RTH 226 Respiratory Care Techniques Practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 224):

The laboratories include but are not limited to the mechanics of ventilation, gas transport, the physical and chemical regulation of respiration, blood circulation, blood flow and pressure, cardiac output, and monitoring of each of these subjects.

RTH 311 Cardiorespiratory pharmacology (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 218):

The study of drugs that affect the cardiopulmonary system. Emphasis on classification, mode of administration, doses / calculations, and physiological reactions.

RTH 313 Respiratory Physics (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: PHY 103):

This course introduces basic concepts in physics and applications of gas laws in respiratory therapy. It discusses the physical properties of medicinal gases, their production, regulation, storage, and distribution, and the therapeutic and diagnostic uses of oxygen.

RTH 327 Respiratory Therapy (2 credit hours, 2 hours Theoretical, 0 hour practical) (Concurrent: RTH 311):

During this course, we will study cardiac and pulmonary rehabilitation in terms of pathology, evaluation, differential diagnosis, treatment, and pharmacology.

RTH 329 Respiratory Therapy Practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 327):

We will use case studies as examples to work through the process of screening, evaluation, diagnosis, prediction, intervention and an outcome document.

RTH 334 Managing artificial respirators (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 327):

This course explores the theories, concepts, and practical applications of mechanical ventilation. The content covered in this course is the basis by which students can learn about ventilators and how to use them safely for patients undergoing mechanical ventilation.

RTH 336 Managing artificial respirators Practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 334):

Training students on how to use ventilators.

RTH 343 Pulmonary Radiography (2 credit hours, 2 hours Theoretical, 0 hour practical) (pre-requisite: none):

Introducing students to the importance of radiography in diagnosing heart and lung diseases, introducing them to the methods of imaging the patient in the radiology department to obtain the appropriate diagnosis from the appropriate device, and introducing them to diseases that are diagnosed using various radiology devices and the role of the respiratory therapist in caring for the patient within the radiology department.

RTH 345 Pulmonary Radiography Practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 343):

Training students on caring for patients within the radiology department and how to ensure their safety during radiography. Displaying different radiographs to familiarize students with potential diseases diagnosed and their possible manifestations in radiographs. Students are also trained to diagnose various chest diseases by examining diagnostic x-rays.

RTH 350 Cardio-respiratory monitoring and special techniques (3 credit hours, 3 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 313, RTH 345):

This course introduces the student to dealing with cases that require care for heart and lung conditions. Among the topics that the course is exposed to is examining the electrical activity of the heart and pathological problems and how to deal with them through the necessary drugs and procedures.

RTH 352 Respiratory Care for Children and Newborns (3 credit hours, 3 hours Theoretical, 0 hour practical) (pre-requisite: RTH 345):

In this course, the student is introduced to how to deal with newborns and children, and the focus is on artificial respirators for this category, as well as procedures for physical therapy for the chest, blood gases and disease states related to them, as well as other therapeutic procedures for these patients.

RTH 354 Emergency Respiratory Care (3 credit hours, 3 hours Theoretical, 0 hour practical) (pre-requisite: none):

At the end of this course, students will be able to describe the symptoms of a person with a respiratory disorder, and know the first aid that should be provided to this patient according to his condition.

RTH 362 Cardiac and Respiratory Diseases (3 credit hours, 3 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 313):

This course deals with diseases related to the respiratory system that affect the process of breathing, gas exchange, lung function, and diseases related to obstruction and limited expansion of the lungs. The student is exposed to it in detail, including the vital signs and disease in each case, with a discussion session for each disease. How much the student learns about various heart diseases such as cardiovascular disease, nervous system diseases that affect breathing, and conditions related to the direct and indirect effect on the respiratory system.

RTH 383 Clinical Training 1 (3 credit hours, 0 hour Theoretical, 6 hours practical) (Pre-requisite: RTH 224):

In this course, the student is exposed to clinical training, where the student is sent to accredited medical centers under the direct supervision of specialized trainers, and in this course the student is taught practical and clinical skills related to examining the patient and taking the pathology, as well as skills related to giving oxygen, humidifiers and steam, and includes physical therapy for some Chest diseases, blood gas testing, as well as how to deal and maintain the artificial respiratory tract to be sound and sober.

RTH 386 Clinical Training 2 (3 credit hours, 0 hour Theoretical, 6 hours practical) (Pre-requisite: RTH 383):

The student is trained in the intensive care unit to deal with cases of artificial respiration.

RTH 413 Pulmonary Rehabilitation and the Elderly (3 credit hours, 3 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 352):

This course focuses on the basic concepts in rehabilitating patients with pulmonary diseases, especially the elderly, so that they can manage their daily lives in a routine manner. This is done through patient evaluation and treatment methods that the rehabilitation team provides to the patient, dealing with some topics such as: setting the treatment plan, the role of the family and the use of oxygen and feeding the patient and medication he takes at home.

RTH 444 Cardiopulmonary Critical Care (3 credit hours, 3 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 354):

It develops clinical skills in managing critical care patients. It includes specialized learning experiences in therapeutic approaches, mechanical ventilation, cardiovascular monitoring, and home care ventilation.

RTH 463 Measurement of heart and lung function (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 336):

This course deals with the diagnostic aspect of heart and lung diseases by measuring respiratory functions through the student's learning to conduct, diagnose and analyze tests related to heart and lung functions and the use of gases in measuring lung volumes and bronchial resistance.

RTH 464 Diagnostic of Cardiac and Respiratory Diseases (3 credit hours, 3 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 362):

This course covers basic information on common respiratory diseases. This course provides the student with a description of the anatomical changes of the lungs, the etiology of the disease process, and an overview of the clinical cardiopulmonary features associated with the disorder, and respiratory management. In addition, the course is designed to provide students with the opportunity to develop information-gathering and decision-making skills in the diagnosis and treatment of patients with heart and lung disease or related disorders.

RTH 465 Measurement of heart and lung function Practical (1 credit hours, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 463):

Practical training in measuring respiratory functions and conducting, diagnosing and analyzing tests related to heart and lung functions.

RTH 467 Clinical Psychology (2 credit hours, 2 hours Theoretical, 0 hour practical) (Pre-requisite: RTH 336):

The course aims to introduce students to clinical psychology, understand the nature of anxiety, stress, disorders or mental illnesses and the resulting dysfunction, and try to reduce their severity and overcome them through examination, diagnosis and treatment. It also aims to enhance the individual's self-happiness, thus achieving progress on the personal level and limiting the development of Ailments.

RTH 469 Respiratory Care management (3 credit hours, 3 hours Theoretical, 0 hour practical) (Concurrent: RTH 467):

This course will review the study of management principles and problems related to respiratory care, department and hospital management, service organization and health care programs.

RTH 475 Advanced Heart and Lung emergency (3 credit hours, 3 hours Theoretical, 0 hour practical) (Concurrent: RTH 354):

Study of the anatomy and functions of the heart, lungs and circulatory system, electrophysiology, evaluation of the patient's heart and lungs, conducting, evaluation and interpretation of EKG, pathophysiology of arteriosclerosis, special cases resulting from heart and lung diseases associated with atherosclerosis, peripheral vascular emergencies, drugs, reading and analysis of EK Heart, Basic Cardiopulmonary Resuscitation Skills, and how to deal with bulky codes.

RTH 479 Advanced Heart and Lung emergency practical (1 credit hour, 0 hour Theoretical, 2 hours practical) (Concurrent: RTH 475):

Apply the theoretical skills accompanying the subject in practical laboratories, for example, but not limited to: ECG reading and analysis, basic CPR skills.

RTH 487 Clinical Training 3 (3 credit hours, 0 hour Theoretical, 6 hours practical) (Pre-requisite: RTH 386):

The student is trained in specialized medical centers, and this includes training the student in the Neonatal and Neonatal Intensive Care Unit. In addition, he will be trained in dealing with patients with pulmonary rehabilitation, and the pulmonary function laboratory.

RTH 488 Clinical Training 4 (6 credit hours, 0 hour Theoretical, 12 hours practical) (Pre-requisite: RTH 487):

In this course, the student's training is pursued in specialized medical centers, to apply and develop his skills in what he learned during the previous four years by sending him to all the different departments of admission.