

**Bachelor of Science in Respiratory Therapy**  
**(PEOs, POs, Cos)**



**Manipal College of Health Professions**

**Manipal Academy of Higher Education, Manipal**

*Outcome-Based Education (OBE) Framework*

**Four years Full time**  
**Undergraduate Program**

**Bachelor of Science in**  
**Respiratory Therapy (B.Sc. RT)**

*With effect from July 2020*

## 2. PROGRAM EDUCATION OBJECTIVES (PEOs)

The overall objective of the learning outcome-based curriculum framework (LOCF) for Bachelor of Science in Respiratory Therapy Program are as follows:

PEO No.	Education Objective
PEO 1	Students will be able to use their fundamental knowledge and clinical competence in Respiratory Therapy as and when required to achieve professional excellence.
PEO 2	Students will demonstrate strong and well defined clinical / practical skills in respiratory care plans and procedures.
PEO 3	Students will be able to practice the profession with highly professional and ethical attitude, strong communication skills, and effective professional skills to work in a inter-disciplinary team.
PEO 4	Students will be able to use interpersonal and collaborative skills to identify, assess and formulate problems associated with the patients requiring any respiratory support and troubleshoot.
PEO 5	Students will be able to imbibe the culture of research, innovation, entrepreneurship and incubation.
PEO 6	Students will be able to participate in lifelong learning process for a highly productive career and will be able to relate the concepts of treating the critically ill, homecare respiratory needs and pulmonary rehabilitation towards serving the cause of the society.

### 3. GRADUATE ATTRIBUTES

S No.	Attribute	Description
1	<b>Professional Knowledge</b>	Demonstrate <b>scientific knowledge and understanding</b> to work as a health care professional
2	<b>Clinical / practical skills</b>	Demonstrate <b>Clinical / practical skills</b> in order to implement the preventive, assessment and management plans for quality health care services
3.	<b>Communication</b>	Ability to communicate effectively and appropriately in writing and orally to patients/clients, care-givers, other health professionals and other members of the community
4.	<b>Cooperation/Team work</b>	Ability to work effectively and respectfully with interdisciplinary team members to achieve coordinated, high quality health care
5.	<b>Professional ethics</b>	Ability to identify ethical issues and apply the ethical values in the professional life
6.	<b>Research / Innovation-related Skills</b>	A sense of inquiry and investigation for raising relevant and contemporary questions, synthesizing and articulating.
7.	<b>Critical thinking and problem solving</b>	Ability to think critically and apply once learning to real-life situations
8.	<b>Reflective thinking</b>	Ability to employ reflective thinking along with the ability to create the sense of awareness of one self and society
9.	<b>Information/digital literacy</b>	Ability to use ICT in a variety of learning situations
10.	<b>Multi-cultural competence</b>	Ability to effectively engage in a multicultural society and interact respectfully
11.	<b>Leadership readiness/qualities</b>	Ability to respond in an autonomous and confident manner to planned and uncertain situations, and should be able to manage themselves and others effectively
12.	<b>Lifelong Learning</b>	Every graduate to be converted into lifelong learner and consistently update himself or herself with current knowledge, skills and technologies. Acquiring Knowledge and creating the understanding in learners that learning will continue throughout life.

## 5. PROGRAM OUTCOMES (POs):

After successful completion of Bachelor / BSc. Respiratory Therapy program, students will be able to:

PO No.	Attribute	Competency
PO 1	Professional knowledge	Possess and acquire <b>scientific knowledge</b> to work as a health care professional
PO 2	Clinical/ Technical skills	Demonstrate and possess <b>clinical skills</b> to provide quality health care services
PO 3	Team work	Demonstrate <b>team work skills</b> to support shared goals with the interdisciplinary health care team to improve societal health
PO 4	Ethical value & professionalism	Possess and demonstrate <b>ethical values and professionalism</b> within the legal framework of the society
PO 5	Communication	<b>Communicate effectively</b> and appropriately with the interdisciplinary health care team and the society
PO 6	Evidence based practice	Demonstrate high quality <b>evidence based practice</b> that leads to excellence in professional practice
PO 7	Life-long learning	Enhance knowledge and skills with the use of advancing technology for the <b>continual improvement</b> of professional practice
PO 8	Entrepreneurship, leadership and mentorship	Display <b>entrepreneurship, leadership and mentorship</b> skills to practice independently as well as in collaboration with the interdisciplinary health care team

## 6. COURSE STRUCTURE, COURSE WISE LEARNING OBJECTIVE, COURSE

### OUTCOMES (COS)

#### SEMESTER - I

Course code	Course title	Credit (s) Distribution (L,T,P ,are hours/ week)				Marks Distribution		
		L	T	P	CR	IAC	ESE	Total
ANA1101	Anatomy - I	3	-	-	3	30	70	100
ANA1112	Anatomy Practical - I	-	-	4	2	100	-	100
PHY1101	Physiology - I	2	-	-	2	30	70	100
YGA1121	Yoga	1	-	2	2	100	-	100
EIC1001	Environmental Science & Indian Constitution	2	-	-	2	100	-	100
CSK1001	Communication Skills	2	-	-	2	100	-	100
RES1101	Clinical Anatomy and Physiology for Respiratory Care	2	2	-	4	50	50	100
RES1102	Medical Terminology	1	2	-	3	50	50	100
<b>Total</b>		<b>13</b>	<b>4</b>	<b>6</b>	<b>20</b>	<b>560</b>	<b>240</b>	<b>800</b>
<p><b>Note:</b> ESE for</p> <ul style="list-style-type: none"> <li>• ANA1101 &amp; PHY1101 will be conducted for 50 marks and normalized to 70 marks for grading</li> <li>• RES1101 &amp; RES1102 will be conducted for 50 marks.</li> <li>• ANA1112, YGA1121, EIC1001 &amp; CSK1001 has only internal assessment of 100 marks.</li> </ul>								

**SEMESTER - II**

Course code	Course title	Credit (s) Distribution (L,T,P are hours/ week)				Marks Distribution		
		L	T	P	CR	IAC	ESE	Total
ANA1201	Anatomy - II	1	-	2	2	30	70	100
ANA1212	Anatomy Practical - II	-	-	4	2	100	-	100
PHY1201	Physiology - II	2	-	-	2	30	70	100
BIC1201	Biochemistry	3	-	-	3	30	70	100
RES1201	Clinical Examination in Respiratory Care	2	2	-	4	50	50	100
RES1202	Respiratory Care Equipment	2	2	-	4	50	50	100
RES1223	Pulmonary Diagnostics - I	2	-	2	3	50	50	100
<b>Total</b>		<b>12</b>	<b>4</b>	<b>8</b>	<b>20</b>	<b>340</b>	<b>360</b>	<b>700</b>
<b>Note:</b> ESE for								
• ANA1201, PHY1201& BIC1201 will be conducted for 50 marks and normalized to 70 marks for grading.								
• RES1201, RES1202 & RES1223 will be conducted for 50 marks								
• ANA1212has only internal assessment of 100 marks								

**SEMESTER III**

Course code	Course title	Credit (s) Distribution (L,T,P are hours/ week)					Marks Distribution		
		L	T	P	CL	CR	IAC	ESE	Total
MCB2103	Microbiology	3	-	-	-	3	30	70	100
PAT2103	Pathology	3	-	-	-	3	30	70	100
RES2101	Pulmonary Diagnostics - II	1	1	-	-	2	50	50	100
RES2102	Pediatric Respiratory Care	3	-	-	-	3	50	50	100
RES2103	Pulmonary Diseases	2	-	-	-	2	50	50	100
RES2131	Clinical - I	-	-	-	12	4	100	-	100
*** ****	Open Elective - I	-	-	-	-	3	S/NS		
<b>Total</b>		<b>15</b>	<b>1</b>	<b>-</b>	<b>12</b>	<b>20</b>	<b>310</b>	<b>290</b>	<b>600</b>

Note: ESE for MCB2103 & PAT2103 will be conducted for 50 marks and normalized to 70 marks for grading  
ESE for RES2101, RES2102 & RES2103 will be conducted for 50 marks

In this semester, it is compulsory for the students to obtain certification in **BASIC LIFE SUPPORT** from MAHE program

**SEMESTER IV**

Course code	Course title	Credit (s) Distribution (L,T,P are hours/ week)					Marks Distribution		
		L	T	P	CL	CR	IAC	ESE	Total
GPY2201	General Psychology	2	-	-	-	2	30	70	100
BST3201	Biostatistics and Research Methodology	3	-	-	-	3	30	70	100
RES2201	Community medicine	2	-	-	-	2	100	-	100
RES2202	Respiratory Care Pharmacology	2	1	-	-	3	50	50	100
RES2231	Clinical II	-	-	-	21	7	100	-	100
RES****	Program Elective - I	-	-	-	-	3	50	50	100
<b>Total</b>		<b>12</b>	<b>4</b>	<b>-</b>	<b>21</b>	<b>20</b>	<b>360</b>	<b>240</b>	<b>600</b>

**Note:** ESE for  
• GPY2201 & BST3201 will be conducted for 100 marks and normalized to 70 marks for grading  
• RES2202 will be conducted for 50 marks



**SEMESTER V**

Course code	Course title	Credit (s) Distribution (L,T,P are hours/ week)					Marks Distribution		
		L	T	P	CL	CR	IAC	ESE	Total
RES3121	Mechanical Ventilation - I	2	-	2	-	3	50	50	100
RES3101	Neonatal Respiratory Care	2	1	-	-	3	50	50	100
RES3102	Critical Care Monitoring and Management	2	1	-	-	3	50	50	100
RES3131	Clinical- III	-	-	-	24	8	100	-	100
*** ****	Open Elective - II	-	-	-	-	3	S/NS		
<b>Total</b>		<b>6</b>	<b>2</b>	<b>2</b>	<b>24</b>	<b>20</b>	<b>250</b>	<b>150</b>	<b>400</b>
<b>Note:</b> ESE for RES3121, RES3101 & RES3102 will be conducted for 50 marks.									

In this semester, it is compulsory for the students to obtain certification in **ADVANCED CARDIAC LIFE SUPPORT** from MAHE program

**SEMESTER VI**

Course code	Course title	Credit (s) Distribution (L,T,P are hours/ week)					Marks Distribution		
		L	T	P	CL	CR	IAC	ESE	Total
RES3201	Chronic Respiratory Disease Management	2	1	-	-	3	50	50	100
RES3222	Mechanical Ventilation - II	2	-	4	-	4	50	50	100
RES3231	Clinical - IV	-	-	-	30	10	50	50	100
RES****	Open elective - II	-	-	-	-	3	50	50	100
<b>Total</b>		<b>9</b>	<b>2</b>	<b>4</b>	<b>30</b>	<b>20</b>	<b>200</b>	<b>200</b>	<b>400</b>
<b>Note:</b> ESE for • RES3201 & 304 will be conducted for 50 marks									



### Open Electives

Open elective is credited, choice-based and is graded as satisfactory / not satisfactory (S/NS). Students make a choice from pool of electives offered by MAHE institution / Online courses as approved by the department

### Program Electives

Program elective is credited and choice-based. The students make a choice from pool of electives offered by the department. The ESE is conducted for 50 marks.

Semester	Course Code	Course Title	Credit (s) Distribution (L,T,P,CL are hours/ week)				
			L	T	P	CL	CR
IV Semester	RES3241	Seminars in Respiratory Care	-	3	-	-	3
	RES3242	HealthCare Management and Law	3	-	-	-	3
VI Semester	RES3243	End of life issues & Bioethics	2	1	-	-	3
	RES3244	Registry Review	3	-	-	-	3

### SEMESTER VII AND SEMESTER VIII

SEMESTER	COURSE	DURATION (hours/week= 48 hours)
VII	Internship	6 months
VIII *	Internship / Externship*	6 months

Note:  
\* A student can opt for externship. Eligibility for externship is reflected in the guidelines.

At the end of Internship, an internal evaluation will be conducted out of 100 marks, which will be graded and reflected in the transcript.

### Criteria for Externship (VIII SEMESTER)

#### Eligibility Criteria:

- The student should have a **CGPA > 8.5**
- If the students are eligible, the following document has to submit for screening.
  - Area of interest
  - Externship Institution details
  - Consent letter from the parents
  - Non-objection certificate (NOC) from the host institution/ from HOD of externship institution.

Externship duration will be for six months from January\* – June (subject to change based on internship start date in the previous semester)

**Externship Evaluation Criteria:**

Assessment of the eligible students will be done under the following components of evaluation Rubric:

**Evaluation Rubric:**

EVALUATION COMPONENTS	POINTS
Clinical Evaluation (7 <sup>th</sup> Semester)	<b>100</b>
Personal Interview: -Professional conduct -Communication -Diagnostic / Treatment skill -Time management and knowledge	<b>50</b>
Microteaching ( on the area of interest)	<b>25</b>
Case presentation	<b>25</b>

In order to qualify for externship a student should score a minimum of 85%, i.e. 170 points out of 200points.

**Total Credit Distribution**

Semester	Credit Distribution					Marks Distribution		
	L	T	P	C	Total	IAC	ESE	Total
Semester - I	13	4	6	-	20	560	240	800
Semester - II	12	4	8	-	20	340	360	700
Semester - III	15	1	-	12	20	310	290	600
Semester - IV	09	1	-	21	20	360	240	600
Semester - V	06	2	2	24	20	250	150	400
Semester - VI	04	1	4	30	20	200	200	400
Semester - VII	-	-	-	48	NA	-	-	-
Semester - VIII	-	-	-	48	NA	-	-	-
<b>Total</b>	<b>59</b>	<b>13</b>	<b>20</b>	<b>183</b>	<b>120</b>	<b>2020</b>	<b>1480</b>	<b>3500</b>