Respiratory Care Technology Mississippi Curriculum Framework

Program CIP: 51.0908- Respiratory Care Therapist/Therapy

2021





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The Office of Curriculum and Instruction (OCI) was founded in 2013 under the Division of Workforce, Career, and Technical Education at the Mississippi Community College Board (MCCB). The office is funded through a partnership with The Mississippi Department of Education (MDE), who serves as Mississippi's fiscal agent for state and federal Career and Technical Education (CTE) Funds. The OCI is tasked with developing statewide CTE curriculum, programming, and professional development designed to meet the local and statewide economic demand.

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Adoption of National Certification Standards

The <u>National Board for Respiratory Care, Inc.</u> (NBRC) is a voluntary health certifying board which was created in 1960 to evaluate the professional competence of respiratory therapists. The primary purposes of the NBRC and its 31member Board of Trustees are to provide high quality voluntary credentialing examinations for practitioners of respiratory care; establish standards to credential practitioners to work under medical direction; issue certificates to and prepare a directory of credentialed individuals; advance medicine by promoting use of respiratory care in treating human ailments; support ethical and educational standards of respiratory care; and cooperate with accrediting agencies to support respiratory care education. Since its inception, the NBRC has issued over 350,000 professional credentials to more than 209,000 individuals, and currently tests nearly 40,000 candidates annually. One of the respiratory therapy examinations is the standard for licensure in the 49 states that regulate the profession.

The NBRC is a member of the Institute for Credentialing Excellence (ICE), and the following examination programs are accredited by the National Commission for Certifying Agencies (NCCA): CRT, RRT, CPFT, RPFT, Neonatal/Pediatric Specialty Examination, Adult Critical Care Specialty Examination, and the Sleep Disorders Specialty Examination. Accreditation by the NCCA signifies unconditional compliance with stringent testing and measurement standards among national health testing organizations. This recognition attests to the NBRC's past and continued efforts to maintain the quality and integrity of examination programs on behalf of the respiratory care profession. (http://www.nbrc.org)

Colleges can obtain contact information for a state licensure in Mississippi by contacting: MS State Department of Health Professional Licensure – Respiratory Care PO Box 1700 Jackson, MS 39215 Phone: 601-364-7360 Fax: 601-364-5057

For more information related to the state license in Mississippi, please visit http://www.msdh.state.ms.us/msdhsite/static/resources/560.pdf.

Industry Job Projection Data

Respiratory Therapists require an education level of an Associate Degree. A summary of occupational data from the <u>oep_state.pdf (ms.gov)</u> is displayed below:

Standard Occupational Classification (SOC)		2016 Employment	2026 Projected Employment	2026 Projected Employment		Total Projected Avg. Annual Job Openings
Code	Occupation			Number	Percent	
29-1126	Respiratory Therapist	1,470	1,790	320	(21.8%)	110

Articulation

Secondary curriculum does not cover content to the depth as the postsecondary curriculum; therefore, there is no statewide articulation agreement. Local agreements and dual credit partnerships are encouraged.

Assessment

Colleges should report the following for students who complete the program with a career certificate, technical certificate, or an Associate of Applied Science Degrees for technical skills attainment. To use the approved Alternate Assessment for the following programs of study, colleges should provide a Letter of Notification to the Director of Career Technical Education at the MS Community College Board. Please see the following link for further instructions: http://www.mccb.edu/wkfEdu/CTDefault.aspx.

CIP Code	Program of Study	
51.0908	Respiratory Care Technology	
Level	Standard Assessment	Alternate Assessment
Accelerated		
/15 Hour		
Level	Standard Assessment	Alternate Assessment
Career		
Level	Standard Assessment	Alternate Assessment
AAS	National Board for Respiratory Care	
	Therapist Multiple Choice Examination and	
	Clinical Simulation Examination	

Research Abstract

In the fall of 2020, the Office of Curriculum and Instruction (OCI) met with the different industry members who made up the advisory committees of the Respiratory Care program. An industry questionnaire was used to gather feedback concerning the trends and needs, both current and future, of their field. Program faculty, administrators, and industry members were consulted regarding industry workforce needs and trends. Industry advisory team members from the colleges involved with this program were asked to give input related to changes to be made to the curriculum framework.

Revision History:

2011 Research and Curriculum Unit, Mississippi State University 2021 Mississippi Community College Board

Program Description

The Respiratory Care Technology program prepares individuals to become respiratory therapists. Respiratory therapists, as members of a team of health-care professionals, work to evaluate, treat, and manage patients of all ages with respiratory, cardiac, and other systemic illnesses. Respiratory therapists are responsible for airway management and the setup and monitoring of life support systems. They provide treatment for heart and lung disorders by administering treatments, oxygen, drugs, and other therapeutic modalities.

The goal is to prepare graduates with demonstrated competence in cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by the registered respiratory therapists (RRTs). The graduate will be well prepared to become a successful and productive part of the work force of the community.

In addition to performing respiratory care procedures, respiratory therapists are involved in clinical decision making (such as patient evaluation, treatment selection, and assessment of treatment efficacy) and patient education. The scope of practice for respiratory care includes, but is not limited to, the following:

- Acquiring and evaluating clinical data
- Assessing the cardiopulmonary status of patients
- Performing and assisting in the performance of prescribed diagnostic studies such as drawing blood samples, performing blood gas analysis, and pulmonary function testing
- Utilizing data to assess the appropriateness of prescribed respiratory care
- Establishing therapeutic goals for patients with cardiopulmonary disease
- Participating in the development and modification of respiratory care plans
- Case management of patients with cardiopulmonary and related diseases
- Initiating ordered respiratory care, evaluating and monitoring patients' responses to such care, modifying the prescribed respiratory therapy and cardiopulmonary procedures, and life support endeavors to achieve desired therapeutic objectives
- Initiating and conducting prescribed pulmonary rehabilitation
- Providing patient, family, and community education
- Promoting cardiopulmonary wellness, disease prevention, and disease management
- Participating in life support activities as required
- Promoting evidence-based medicine, research, and clinical practice guidelines
- Promoting inter-professional skills

Respiratory therapists carry out these duties in a wide variety of clinical settings and are expected to act in a professional manner and conform to the standards and ethics of all health-care professionals. Professional standards integrated into this curriculum include the Commission on Accreditation for Respiratory Care (CoARC) and standards for the National Board for Respiratory Care (NBRC).

Graduates of the Respiratory Care Technology program are eligible to sit for the NBRC Board Exams.

Suggested Course Sequence

			SCH Breakdown		SCH Breakdown		SCH Breakdown		SCH Breakdown			Contact I Breakdo	Hour wn	Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab/ Clinical	Total Contac t Hours	Lecture	Lab	Certification Name						
RCT 1213	Respiratory Care Science	3	3	0	45									
RCT 1223	Patient Assessment and Planning	3	2	2	60									
RCT 1313	Cardiopulmonary Anatomy and Physiology	3	3	0	45									
RCT 1322	Pulmonary Function Testing	2	1	2	45			N. 11						
RCT 1416	Respiratory Care Technology I	6	3	6	135			National Board for						
RCT 1424	Respiratory Care Technology II	4	3	2	75			Respiratory						
RCT 1515	Clinical Practice I	5	0	15	225			Therapist						
RCT 1523	Clinical Practice II	3	0	9	135			Multiple Choice						
RCT 1613	Respiratory Care Pharmacology *	3	3	0	45			Examination						
RCT 2333	Cardiopulmonary Pathology	3	3	0	45			and Clinical						
RCT 2434	Respiratory Care Technology III	4	3	2	75			Simulation						
RCT 2533	Clinical Practice III	3	0	9	135			Examination						
RCT 2545	Clinical Practice IV	5	0	15	225									
RCT 2613	Neonatal/Pediatrics Management	3	3	0	45									
RCT 2713	Respiratory Care Seminar	3	2	2	60									
	Total	53												

* RCT 1613 can be taught as RCT 1611 and RCT 2622

General Education Core Courses

To receive the Associate of Applied Science degree, a student must complete all of the required coursework found in the Career Certificate option, Technical certificate option, and a minimum of 15 semester hours of General Education core. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester or provided primarily within the last semester. Each community college will specify the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science degree at their college. The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) Section 9 Standard 3 of the *Principles of Accreditation: Foundations for Quality Enhancement*¹ describes the general education core.

Section 9 Standard 3:

3. The institution requires the successful completion of a general education component at the undergraduate level that

a) is based on a coherent rationale.

b) is a substantial component of each undergraduate degree program. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours of the equivalent; for baccalaureate programs, a minimum of 30 semester hours or the equivalent.

c) ensures breadth of knowledge. These credit hours include at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. These courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession.

<<< Add any additional general education standards as required for programmatic accreditation here and footnote below.>>>

General Education Courses

			SCH Breakdow	/n		Contact Ho Breakdowr	our N	Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	Lecture	Lab	Certification Name
	Humanities/Fine Arts	3						
	Social/Behavioral Sciences	3						
	Math/Science	3						
	Academic electives	6						
	TOTAL	15						

¹ Southern Association of Colleges and Schools Commission on Colleges. (2017). *The Principles of Accreditation: Foundations for Quality Enhancement*. Retrieved from

http://www.sacscoc.org/2017ProposedPrinc/Proposed%20Principles%20Adopted%20by%20BOT.pdf

Electives

			SCF	l Break	down		Contact Hour Breakdow		Breakdown
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Externship	Total Contact Hours	Lecture	Lab	Externship
SSP 1002	Smart Start Pathway 101	2			I				
BIO 1514 or 2BIO 2514	Prerequisites - Anatomy and Physiology	4							
BIO 1524 or 2524	Pre/Corequisites - Anatomy and Physiology II	4							
CPT 1113	Fundamentals of Microcomputer Applications	3							
CHE 1314	Principles of Chemistry	4							
CHE 1324	Principles of Chemistry II	4							
BIO 2924	Microbiology	4							
PHY 1214	Physics	4							
MET 1113	Medical Terminology	3							
MET 1613	Medical Office Terminology I	3							
RCT 1011	Seminar I	1							
RCT 1021	Seminar II	1							
RCT 111 (1–3)	Respiratory Care Practicum	1-3							
RCT 2031	Seminar III	1							
	Other instructor approved electives per local community college								

REQUIRED COURSES

RCT 1213 Respiratory Car	RCT 1213 Respiratory Care Science					
Associate of Applied Scien	Associate of Applied Science Degree Requirement					
This course is designed to to fundamental elements efficient, and professional	This course is designed to introduce the student respiratory care therapist to fundamental elements important to the delivery of health care in a safe, efficient, and professional manner.					
Semester Credit Hours	Lecture	Lab	Clock Hours			
3	3	0	45			
	RCT 1213 Respiratory Car Associate of Applied Scien This course is designed to to fundamental elements efficient, and professional Semester Credit Hours 3	RCT 1213Respiratory Care ScienceAssociate of Applied Science Degree ReThis course is designed to introduce the to fundamental elements important to efficient, and professional manner.Semester Credit HoursLecture 3	RCT 1213Respiratory Care ScienceAssociate of Applied Science Degree RequirementThis course is designed to introduce the student respto fundamental elements important to the delivery orefficient, and professional manner.Semester Credit HoursLecture30			

Prerequisite:

Instructor Approved

- 1. Discuss aspects of patient safety.
 - a. Demonstrate basic life support. ^{TMC/CSE III-G.1(a-c)}
 - b. Discuss disaster planning and bioterrorism responses. TMC /CSE I-B1(e), II-B(1-3)
 - c. Demonstrate understanding of OSHA regulations and standard precautions. TMC /CSE II-B(1-3)
 - d. Demonstrate proper use of body mechanics.
 - e. Discuss fire and electrical safety. TMC /CSE II-A(3), II-C(3)
 - f. Discuss principles of accident prevention. TMC /CSE II-A
- 2. Discuss aspects of patient comfort.
 - a. Discuss cultural diversity TMC/CSE I-
 - b. Apply effective communication skills in the various health-care settings. TMC/CSE I-B(1g)
 - c. Discuss patient management in regard to death and dying. TMC/CSE I-A(1), III-H(10)
- 3. Discuss various aspects of the health-care delivery system.
 - a. Discuss the role of various health-care providers, including respiratory therapists.
 - b. Discuss the organization and functions of a respiratory care department.
 - c. Discuss the legal aspects of respiratory care, including licensure and credentialing.
 - d. Discuss the history of respiratory care.
 - e. Discuss ethical considerations in respiratory care.
 - f. Discuss professional considerations in respiratory care.
 - g. Discuss medical billing and reimbursement.
- 4. Discuss related medical terminology.
 - a. Discuss terms related to anatomy and physiology.
 - b. Discuss terms related to human disease.
 - c. Discuss terms related to patient assessment and diagnosis.
 - d. Discuss terms related to the treatment of disease.
- 5. Describe the role microbiology and infection control play in health care.
 - a. Describe the major classifications of microorganisms and the pathological role of each inhuman disease. TMC/CSE I-E(2), II-B
 - b. Describe how microorganisms are identified and the role identification plays in treatment. TMC/CSE I-A(4), I-(2B,C), I-C(19), I-E(2)
 - c. Describe sputum sampling, gram-stain, culture, and sensitivities. TMC/CSE I-A(4), I-(2B,C), I-C(19), I-E(2)
 - d. Describe infection control methods used in respiratory care. TMC/CSE II-B(1-3)
 - e. Describe the elimination of infectious sources. TMC/CSE II-B(1-3)
 - (1) Describe proper methods of equipment decontamination. TMC/CSE II-C

- (2) Describe various methods of sterilization and disinfection. TMC/CSE II-B.2
- (3) Describe methods of monitoring infection control practices. TMC/CSE II-B.2
- (4) Apply isolation procedures. TMC/CSE II-B(1-3)
- (5) Describe the spread of infection and how to break the chain of contamination. TMC/CSE II-B(1-3)
- 6. Demonstrate mathematics as applied to respiratory care.
 - a. Perform metric conversions.
 - b. Perform decimal and percent conversions.
 - c. Calculate ratio and proportion.
 - d. Solve for linear equations.
 - e. Apply order of operations.
 - f. Plot a graph using rules of X-Y coordinates.
 - g. Perform temperature conversions.
- 7. Discuss chemistry and physics as related to respiratory care.
 - a. Discuss states of matter and how each state changes.
 - b. Discuss gas laws.
 - c. Discuss fluid dynamics.
 - d. Discuss atomic structure.
 - e. Discuss acids, bases, and the pH scale.
 - f. Discuss solutions, body fluids, and electrolyte balance. TMC/CSE I-A.4
 - g. Discuss temperature scales, and solve conversion problems.
 - h. Discuss absolute and relative humidity.
 - i. Discuss and calculate compliance and resistance changes in the pulmonary system.
- 8. Discuss methods of data management in respiratory care.
 - a. Discuss computer applications in respiratory care.
 - b. Apply various aspects, methods, and formats of record keeping.

Course Number and Name:	RCT 1223 Patient As	ssessment and Planni	ng		
Description:	This course is a fundamental approach to subjective and objective evaluation, assessment, and care plan formation for the individual need the patient. It is an introduction to cardiopulmonary diseases including etiology, pathophysiology, complications, occurrences, clinical manifestations, treatment, and prevention.				
Hour Breakdown:	Semester Credit Ho	ours Lecture	Lab	Clock Hours	
	3	2	2	60	

Prerequisite:

Instructor Approved

- 1. Utilize Subjective Objective Assessment Plan (SOAP) principles to develop and modify care plans for patients with cardiopulmonary disorders.
 - a. Review, and recommend modifications pertinent to existing data in the patient record. TMC/CSE I-E
 - b. Evaluate additional pertinent clinical information to implement, evaluate, and modify existing patient care plan. TMC/CSE I-D
 - c. Recommend modifications in the Respiratory Care Plan based on the patient's response. TMC/CSE I-E
 - d. Assess patient's overall cardiopulmonary status by palpation, inspection, and auscultation. TMC/CSE I-B(3-5)
 - e. Differentiate between obstructive and restrictive lung disorders. TMC/CSE I-A
- 2. Explain the etiology, pathophysiology, clinical manifestations, diagnosis, and treatment of cardiopulmonary diseases and conditions.
 - a. Evaluate pertinent laboratory values. TMC/CSE I-A(4)
 - b. Evaluate and interpret radiological studies. TMC/CSE I-A, 8
 - c. Perform basic patient assessment skills as related to respiratory care. TMC/CSE I-B(3-5)
 - d. Evaluate a patient's learning needs as related to age and language appropriateness, education level, prior disease and medication knowledge, and other factors. TMC/CSE I-A
 - e. Develop a quality improvement program. TMC/CSE.I-E
 - f. Review an interdisciplinary patient and family care plan. TMC/CSE I-A(1)
- 3. Simulate arterial puncture for blood gases with interpretation. TMC/CSE I-C(5-6)

Description:	This course is a study of ca relation to the practice of	rdiopulmonary respiratory care	anatomy and p	bhysiology in
Hour Breakdown:	Semester Credit Hours	Lecture	Lab	Clock Hours
	3	3	0	45

Cardiopulmonary Anatomy and Physiology

Prerequisite:

Instructor Approved

Student Learning Outcomes:

Course Number and Name:

- 1. Explain the anatomy of the respiratory system.
 - a. Explain the structures that comprise the upper airway. TMC/CSE I-B(2a,b)
 - b. Explain the structures that comprise the lower airwa^{y. TMC/CSE I-B(2a,b)}
 - c. Explain the primary functions of the upper airway. TMC/CSE I-B(2a,b)

RCT 1313

d. Describe the structures and functions of the external lung and thorax. TMC/CSE I-B(2a,b)

2. Describe the physiology of the respiratory system.

- a. Describe oxygen transport. ^{TMC/CSE II-A(1-3)}
- b. Describe carbon dioxide transport. TMC/CSE I-E(10)
- c. Describe the physiology of the upper and lower airway. TMC/CSE I-B
- d. Define the functional unit of the lung. TMC/CSE I-A(6)
- e. Define internal and external respiration. TMC/CSE I-C(4), D(4)
- f. Describe the mechanics of ventilation. TMC/CSE I-C(4)
- g. Explain acid base balance. TMC/CSE-I.A(11g)
- h. Describe neurological control of ventilation. TMC/CSE I-C(4), D(4)
- i. Describe the role of the renal system in relation to the cardiopulmonary system. TMC/CSE I-A(8), I-A(11)
- 3. Describe the anatomy and physiology of the cardiovascular system.
 - a. Identify the structures and functions of the heart. TMC/CSE I-A(11g)
 - b. Describe the major components of the blood. TMC/CSE I-A(g), I-D(8)
 - c. Identify the structures and functions of the major blood vessels. TMC/CSE I-D(8)
 - d. Explain the hemodynamic role of the cardiovascular systems. TMC/CSE I-D(8)

course Number and Name:	RCT 1322 Pulmonary F	unction Testi	ng (PFT)			
Description:	This course is an introduction to pulmonary function techniques and testing equipment with patient data evaluation and recommendation based on pulmonary function results.					
Hour Breakdown:	Semester Credit Hours	Lecture	Lab	Clock Hours		
	2	1	2	45		
Prerequisite:	Instructor Approved					

Instructor Approved

Student Learning Outcomes:

. . .

- Determine the basis for the use of cardiopulmonary tests. 1.
 - Discuss the indications for pulmonary function testing. TMC/CSE I-A.6, I-C (22-25) a.
 - Demonstrate procedures for selected pulmonary function tests. TMC/CSE I-A.6, I-C (22-25) b.
 - Explain the significance of pulmonary function test findings. TMC/CSE I-E.6 c.
 - Discuss stress testing. TMC/CSE I-D.18 d.
 - Discuss apnea monitoring TMC/CSE I-D.14 e.
 - Discuss overnight pulse oximetry. TMC/CSE I-A.11(f) f.
- 2. Apply principles of pulmonary function tests.
 - Describe the principles of operation of cardiopulmonary testing equipment. TMC/CSE II-C.3 (a-c) a.
 - Describe the principles of operation of pulmonary function equipment. TMC/CSE II-C.3 (a-c) b.
- 3. Recognize functions of blood gas and pulmonary function and other equipment utilized in cardiopulmonary testing.
 - Maintain blood gas instrumentation, calibration, infection control, and quality assurance. TMC/CSE II-C (1,2) a.
 - Maintain pulmonary function equipment, calibration, infection control, guality assurance, and b. other cardiopulmonary monitoring equipment. TMC/CSE II-C.3 (a-c)
 - Correct malfunctions of pulmonary function, bloodgas, and other cardiopulmonary monitoring c. equipment. TMC/CSE II-C (1-3)
- 4. Discuss the relationship of disease processes to pulmonary function interpretations.
 - Evaluate pulmonary function test results and make recommendations for patient care. TMC/CSE I-C(22-24), I-A(6) a.

Course Number and Name:	RCT 1416 Respiratory Ca	re Technology	1			
Description:	This course is a study of respiratory treatments, equipment design and operation related to acute care procedures.					
Hour Breakdown:	Semester Credit Hours	Lecture	Lab	Clock Hours		
	6	3	6	135		
		-	•			

Prerequisite:

Instructor Approved

- 1. Apply principles of medical gas therapy to respiratory care.
 - Describe the manufacture, transport, and storage of medical gases. TMC/CSE II-A(1-3) a.
 - Demonstrate the operation of medical gas controlling devices to include hyperbaric therapy. TMC/CSE II-A (1-3) b.
 - Select appropriate oxygen delivery devices. TMC/CSE II-A(1-3) c.
 - Explain the safety procedures, indications, and hazards of medical gas administration. TMC/CSE II-A (1-3) d.
 - Demonstrate the assembly and operation of various patient monitors and analyzers. TMC/CSE II-A(3) e.
- 2. Apply the principles of aerosol/humidity therapy to respiratory care.
 - Define humidity and aerosol. TMC/CSE II-A (5-8) a.
 - Contrast a nebulizer and humidifier. TMC/CSE II-A(5,6) b.
 - State the factors that affect humidity output. TMC/CSE II-A(5) c.
 - Describe factors that affect aerosol penetration and deposition. $^{\text{TMC/CSE II-A(6)}}$ d.
 - Demonstrate the principles of assembly and operation, efficiency, and application of the various e. types of humidifiers and nebulizers. TMC/CSE II-A(5)
 - Explain and describe the indications and hazards of aerosol and humidity therapy. TMC/CSE II-A(5) f.
- Apply principles of hyperinflation to respiratory care. 3.
 - Compare and contrast the major lung expansion techniques. TMC/CSE I-B.6 (a), II-A(16) a.
 - Compare and contrast the goals, indications, and adverse effects of lung expansion techniques. TMC/CSE I-B6(a) b.
 - Describe the principles of assembly and operation of lung expansion techniques. TMC/CSE I-B6(a) c.
 - d. Demonstrate the assembly and operation of lung expansion techniques. TMC/CSE I-B6.
- 4. Apply principles of airway clearance techniques.
 - Identify the airway clearance segments. TMC/CSE I-B.6 (a), II-A(16) a.
 - Describe the positions required to drain designated lung segments. TMC/CSE II-A(17) b.
 - Describe the indications and hazards of airway clearance hygiene techniques. c.
 - d. Perform airway clearance techniques to include coughing technique, autogenic drainage, positive expiratory pressure device (PEP), intrapulmonary percussive ventilation (IPV), Flutter, and High Frequency Chest Wall Oscillation (HFCWO). TMC/CSE III-B(3),III-B(4), III-B(1)
- Apply principles of airway care and manual resuscitation. 5.
 - Summarize the etiology of upper airway obstruction. TMC/CSE I-B.6(c) a.
 - Discuss the indications, hazards, and selection of artificial airways. TMC/CSE III-A(3) b.
 - Demonstrate the placement of artificial airways. TMC/CSE II-A.12, III-A.3 (a-h) c.

- d. Demonstrate techniques to monitor, and insure a safe and effective airway. TMC/CSE II-A.12, III-A.3(a-h)
- 6. Compare and contrast characteristics of various manual resuscitators.
 - a. Demonstrate the use of various manual resuscitators. TMC/CSE II-(A.9)
 - b. Apply principles of disease management. TMC/CSE II-(A.9)
 - (1) Monitor treatment outcomes. TMC/CSE I-(D.8)
 - (2) Initiate and modify therapy based on respiratory care protocol. TMC/CSE III-(A.7)
 - c. Demonstrate appropriate techniques for removal of bronchopulmonary secretions. TMC/CSE III
 - d. Simulate arterial puncture for blood gases with interpretation. $^{TMC/CSE I-C(5,6)}$

Course Number and Name:	RCT 1424	Respiratory Care Technology II
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This course is a continuation of Respiratory Care Technology I. It is a study of the management of respiratory failure, including mechanical ventilation, pulmonary rehabilitation, and home care.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Clock Hours
4	3	2	75

Prerequisite:

Instructor Approved

- 1. Apply concepts related to rehabilitation and home care.
 - a. Discuss the goals and techniques of cardiopulmonary rehabilitation. TMC/CSE III-I(4)
 - b. Discuss the equipment and techniques of respiratory care in the home. TMC/CSE III-I(2)
- 2. Apply concepts related to mechanical ventilation in all patient populations.
 - a. Classify mechanical ventilators. TMC/CSE II-C(4)
 - b. Discuss patient synchrony and physiologic effects of mechanical ventilation. TMC/CSE II-C(4)
 - c. Discuss indications and hazards of mechanical ventilation. TMC/CSE II-C(4)
 - d. Demonstrate the setup, monitoring, modification, and discontinuation of mechanical ventilation. TMC/CSE II-C(4)
 - e. Demonstrate airway management in relation to mechanical ventilation including noninvasive interfaces. TMC/CSE II-C(4,5), III-C(3,4)
 - ^{f.} Select, analyze, and adjust ventilator settings according to ventilator graphics. ^{TMC/CSE III-C}

Course Number and Name:	RCT 1515	Clinical Practice I
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Patient assessment, performance of respiratory care procedures, and care plan formation are practiced in the hospital environment. A procedural guide is utilized to evaluate student competencies and performance of respiratory care procedures.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab/Clinical	Clock Hours
5	0	15	225

Prerequisite:

Instructor Approved

- 1. Evaluate patient data, and formulate a care plan.
 - a. Review patient record data. TMC/CSE I-A(1)
 - b. Perform basic patient assessment. TMC/CSE I-A(1)
 - c. Evaluate pertinent clinical data. TMC/CSE I-A(4)
 - d. Recommend procedures to obtain additional data. TMC/CSE I-C
 - e. Write a care plan for a given patient. TMC/CSE I-A
- 2. Perform respiratory care procedures.
 - a. Apply medical gas therapy concepts. ^{TMC/CSE II-A(3)}
 - b. Apply aerosol humidity therapy concepts. TMC/CSE II-A(6)
 - c. Perform lung expansion techniques. TMC/CSE II-A(16)
 - d. Demonstrate cardiopulmonary resuscitation (CPR). TMC/CSE III-G(1a)
 - e. Perform airway clearance techniques. TMC/CSE III-B(2)
 - f. Perform basic airway management techniques. TMC/CSE III-A
 - g. Perform aerosolized drug administration. TMC/CSE II-A(6), III-D(1)
 - h. Apply methods of infection control. TMC/CSE II-B
 - i. Troubleshoot equipment. TMC/CSE II
 - j. Demonstrate isolation techniques. TMC/CSE II-B
 - k. Demonstrate quality control procedures. TMC/CSE I-C(1-5)
 - I. Communicate information of patient status to appropriate health-care team members. TMC/CSE III-G(2), III-H(1-10)
 - m. Explain planned therapy and goals to patients in understandable terms to achieve optimal therapeutic outcomes. TMC/CSE III-I(1-5)
 - n. Communicate results of therapy, and alter therapy per protocols. TMC/CSE III-(C-E)
 - o. Demonstrate techniques in analysis and performance of arterial blood gases. TMC/CSE I-A(5), I-C(5,6), I-D(5), I-E(8), II-A(14), II-C(1)
 - p. Demonstrate techniques in performing electrocardiograms. TMC/CSE 1-A(11g), C(1), E(1), D(1), E(9)
 - q. Participate in physician interaction, inter-professional skills and communication. TMC/CSE III-G (2), III-H

Course Number and Name:	RCT 1523	Clinical Practice II
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This course is a continuation of Clinical Practice I. Students rotate through various respiratory care subspecialty areas for evaluation of competency and performance of respiratory care procedures.

Lecture

0

Lab/Clinical

9

Clock Hours

135

Hour	Breakdown:	
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Semester Credit Hours

Prerequisite:

Instructor Approved

Student Learning Outcomes:

- 1. Perform various basic pulmonary functions tests (PFT).
 - a. Demonstrate performance of basic procedures for selected PFT. TMC/CSE I-A(1)
 - b. Demonstrate knowledge of predicted normal values of PFT. TMC/CSE I-A(1)
 - c. Observe the regimens for various PFT studies. TMC/CSE I-A(4)

3

- d. Demonstrate quality assurance in use of PFT. TMC/CSE I-C
- e. Demonstrate use of equipment used in pulmonary functions testing. TMC/CSE I-A
- 2. Explain the role respiratory care plays in cardiopulmonary rehabilitation.
 - a. Discuss the indications and contraindications. TMC/CSE II-A(3)
 - b. Evaluate, monitor and make recommendations for patients during the rehabilitation process. TMC/CSE II-A.6
 - c. Evaluate the issues involved in implementation of a rehabilitation program. TMC/CSE II-A.16
 - d. Demonstrate patient education. TMC/CSE III-G.1A
 - e. Participate in the inter-professional approach to the rehabilitation patient. TMC/CSE I-4
- 3. Demonstrate basic procedures related to invasive and noninvasive ventilation
 - a. Adjust ventilator settings according to patient data evaluation. TMC/CSE I-C.4, I-D.4
 - b. Evaluate ventilatory flow, volume, and pressure waveforms. TMC/CSE III-C (1-8)
 - c. Apply computer technology to patient management such as ventilator waveformanalysis, electronic charting, and patient care algorithms. TMC/CSE III-C (1-8)
 - d. Maintain records of results of therapy.
 - e. Measure auto-PEEP. ^{TMC/CSE I- C-12, D11}
 - f. Participate in intra-hospital ventilator transport. TMC/CSE III-G.3
 - g. Troubleshoot equipment as related to respiratory care. TMC/CSE II-A
 - h. Participate in physician interaction, inter-professional skills and communication. TMC/CSE III-G.2, III-H

Course Number and Name:	RCT 1613 Respiratory	Care Pharmad	cology			
Description:	This course is designed to introduce the student to thepharmacology related to cardiopulmonary disorders.					
Hour Breakdown:	Semester Credit Hours	Lecture	Lab	Clock Hours		
	3	3	0	45		
Prerequisite:	Instructor Approved					

- 1. Apply the principles of pharmacology to respiratory care.
 - a. Understand drug utilization related to drugs' names, indications, contraindications, reactions, and interactions, as well as responses to adverse effects. TMC/CSE III-E(40)
 - b. Explain the routes of administration, discussing aerosol delivery methods, advantages, and disadvantages. TMC/CSE II-A(1,3,7,8,)
 - c. Describe pharmacokinetics of drugs to include absorption, distribution, metabolism, and elimination. TMC/CSE III-E(4a-n)
 - d. Describe the pharmacodynamics of drugs to include selectivity and specificity; agonists vs. antagonists; and, potency, toxicity, tolerance, and half life. TMC/CSE III-E(4a-o)
 - e. Discuss the use and administration of specific drug categories related to cardiopulmonary medicine including the following: bronchodilators; mucokinetic and surfactants; antiinflammatories and anti-asthmatics; anti-infective agents; cardiac agents; blood pressure, inhaled pulmonary vasodilators and anti-thrombotic agents; and neuromuscular, sedative, anesthetic, analgesic agents and smoking cessation drugs. ^{TMC/CSE I-D(1-3)}
- 2. Perform medication calculations for adult, pediatric, and neonatal patients.
 - a. Proportionately calculate drug dilution and equivalent dose. TMC/CSE III-E(40)
 - b. Calculate strength of solutions in percentage and ratio forms. TMC/CSE III-E(40)
 - c. Calculate weight to weight conversions. TMC/CSE III-E(40)
 - d. Calculate volume and weight conversions. TMC/CSE III-E(40)
 - e. Perform conversion of units of measurement within the metric system and between the metric and common household system of measurement (English System). TMC/CSE III-E(40)
 - f. Modify dosages for age, weight, and body mass index. TMC/CSE III-E(40)

Course Number and Name:	RCT 2333 Cardiopu	monary Patholo	ogy		
Description:	This course is a study of etiology, clinical manife cardiopulmonary diseas therapist driven protoco utilized to enforce learn	cardiopulmona stations, diagno es incorporatin ols. Case studies ing and evaluat	ardiopulmonary pathophysiology. It includes ations, diagnostics and treatment of various incorporating clinical practice guidelines, and . Case studies and/or clinical simulations will be g and evaluate progress.		
Hour Breakdown:	Semester Credit Hours	Lecture	Lab	Clock Hours	
	3	3	0	45	

Prerequisite:

Instructor Approved

- 1. Explain the etiology, pathophysiology, and management plan for diseases or patient scenarios affecting the cardiopulmonary system.
 - a. Discuss the pathophysiology of diseases. TMC /CSE III-F(1-3), I(5)
 - b. Enumerate patient and family counseling concerning smoking cessation and disease management education. TMC /CSE I-B(b&g); III- I(3&5)
- 2. Apply clinical practice guidelines and therapist driven protocols using Subjective Objective Assessment Plan (SOAP) principles.
 - a. Review patient records, and recommend diagnostic procedures to obtain additional data. TMC /CSE I-E(1-13)
 - b. Evaluate patient data and make recommendations based on pertinent clinical information. TMC /CSE I-E(1-13); III- E(2a-i), 3(a-f), 4(a-o), F(2),
 - c. Interpret results of diagnostic procedures. ^{TMC /CSE III-C(1-4), E(1-4)}
 - d. Determine appropriateness of the patient's care plan. TMC /CSE III-C(1-4), E(1-4)
 - e. Recommend modification of the patient's care plan. TMC /CSE III-C(5-6), E(1-4), F(2)
- 3. Apply the principles of polysomnography as related to diagnostic testing, assessment, and treatment. TMC /CSE I-A(10), C(17), D(16), E(12)

Course Number and Name: RCT 2434 **Respiratory Care Technology III Description:** This course is an advanced study of respiratory care in the critical care setting. Topics include non-conventional modes of mechanical ventilation, hemodynamics, special procedures, and advanced cardiac life support. Semester Credit Hours **Clock Hours** Hour Breakdown: Lecture Lab 4 3 2 75

Prerequisite:

Instructor Approved

- 1. Apply concepts of non-conventional mechanical ventilation.
 - a. Recommend non-conventional modes of mechanical ventilation. TMC/CSE III-C(4b-c), E(2a&3f), F(2)
 - b. Describe the use of non-conventional modes of mechanical ventilation. TMC/CSE II-A(4)
 - c. Monitor the use of non-conventional modes of mechanical ventilation. TMC/CSE III-C(1-8)
 - d. Monitor patient response to non-conventional modes of mechanical ventilation. TMC/CSE I-A(11), C(2,4,5,6,17), D(1,2,4,5,16)
 - e. Recommend modifications to non-conventional modes of mechanical ventilation. TMC/CSE III-E(3a-f)
- 2. Apply concepts to hemodynamics.
 - a. Recommend diagnostic procedures to obtain additional data. TMC/CSE III-F(2)
 - b. Evaluate additional pertinent clinical information. TMC/CSE I-A(3)
 - c. Interpret the results of diagnostic procedures. TMC/CSE I-D(8)
 - d. Recommend modification based on appropriateness of care plans. TMC/CSE I-E(11)
 - e. Describe assembly, initiation, monitoring, and troubleshooting of hemodynamic monitoring systems. TMC/CSE II-A(24)
 - f. Review chest X-rays to assure proper placement of central venous and/or pulmonary artery catheters. TMC/CSE I-B(6)
 - g. Demonstrate arterial line therapy to include insertion, sampling, and maintenance. TMC/CSE I-C(9)
- 3. Apply concepts related to special procedures.
 - a. Explain special procedures as described by the National Board for Respiratory Care matrix. TMC/CSE III-H(1-10)
 - b. Recommend diagnostic procedures to obtain additional data. TMC/CSE I-E(1-13)
 - c. Evaluate additional pertinent clinical information. TMC/CSE I-A(3)
 - d. Assist the physician performing special procedures. ^{TMC/CSE III-H(1-10)}
 - e. Describe moderate conscious sedation. TMC/CSE III-H(8)
 - f. Describe assembly, initiation, monitoring, and troubleshooting of chest tube drainage systems. TMC/CSE III-H(6)
- 4. Apply concepts related to advanced cardiac life support.
 - a. Recognize basic arrhythmias. TMC/CSE I-A(11G), B(5b)
 - b. Recognize stable vs. unstable arrhythmias. TMC/CSE I-C(1), D(1),
 - c. Implement the appropriate algorithm. TMC/CSE III-G(1a-c)
 - d. Recommend the common cardiopulmonary life support drugs. TMC/CSE III-E(4F)
 - e. Demonstrate operation of defibrillation equipment, including synchronized cardioversion. TMC/CSE III-H(9)
 - f. Demonstrate emergency airway care procedures, including LMA and Combitube insertion, maintenance, and troubleshooting. ^{TMC/CSE III-G(1c)}
 - g. Describe assembly, initiation, monitoring, and troubleshooting of transcutaneous and transvenous pacemakers. TMC/CSE I-C(2)

Course Number and Name:	RCT 2533	Clinical Practice	e		
Classification:	Associate of Applied Science Degree Requirement				
Description:	This course is a continuation of Clinical Practice I and II. Students will rotate through various clinical areas for evaluation of competency, performance and/or observation of respiratory care procedures.				
Hour Breakdown:	Semest	er Credit Hours	Lecture	Lab/Clinical	Clock Hours
	3		0	9	135
Prerequisite:	Instructo	r Approved			

- 1. Describe and/or perform advanced diagnostic testing. TMC/CSE I-B(1-6), E(1-13), II-C(1-3)
- 2. Perform advanced respiratory care procedures.
 - a. Observe and assist in special procedures related to respiratory care. TMC/CSE III-D(1-3), H(2-9)
 - b. Evaluate hemodynamic data. TMC/CSE I-A(11g), C(9), D(8), E(11), II-A(24)
 - c. Expand on both conventional and non-conventional modes of mechanical ventilation. TMC/CSE III-C(4-8)
 - d. Modify results of therapy, and recommend changes based on protocol(s). TMC/CSE III- E(1-4), F(1-3)
 - e. Evaluate arterial blood gases for modification of treatment as related to ventilator management. TMC/CSE I-A(5), D(5), E(8)
 - f. Participate in physician interaction, inter-professional skills and communication. TMC/CSE III-E(2i), G(2), H(1-10)

Course Number and Name:	RCT 2545 Clinical Prac	ctice IV			
Classification:	Associate of Applied Science Degree Requirement				
Description:	This course is a continuation of Clinical Practice III. Students will rotate through respiratory care areas. A procedural guide is utilized to evaluate student competency and performance.				
Hour Breakdown:	Semester Credit Hou	rs Lecture	Lab/Clinical	Clock Hours	
	5	0	15	225	

Prerequisite:

Instructor Approved

- 1. Perform advanced respiratory care procedures independently.
 - a. Analyze hemodynamic data. TMC/CSE I-A(11g), C(9), D(8), E(11), II-A(24)
 - b. Perform selected conventional and non-conventional modes of mechanical ventilation. TMC/CSE III-A-C
 - c. Perform critical care procedures. TMC/CSE III-A-H
 - d. Evaluate ventilator graphics and recommend changes based on analysis. TMC/CSE III-C(6)
 - e. Observe or assist in the performance of special procedures related to respiratory care. TMC/CSE III-H(1-10)
 - f. Assist in advanced cardiopulmonary life support techniques. TMC/CSE III-G(1-3)
- 2. Perform neonatal/pediatric respiratory care procedures.
 - a. Observe or assist in neonatal/pediatrics management. TMC/CSE I-A(9)
 - b. Observe or assist in neonatal/pediatric resuscitation techniques. TMC/CSE III-G(1&3)
 - c. Participate in physician interaction, inter-professional skills and communication. TMC/CSE III-G(2), I(1-5)
- 3. Present a critical care case presentation.
 - a. Collect patient data.
 - b. Develop a care plan.
 - c. Deliver an oral presentation.
- 4. Participate in professional development to include, interview techniques, appropriate attire and social media guidelines.

Course Number and Name:	RCT 2613	Neonatal/Pediatrics Management
	HOL LOTO	reconatal, realatives management

This course is a study of fetal development and the transition to extrauterine environment. It includes the most common cardiopulmonary disorders, neonatal and pediatric disease processes, and the modes of treatment.

Semester Credit HoursLectureLabClock Hours33045

Prerequisite:

Instructor Approved

- 1. Apply concepts related to neonatal management.
 - a. Discuss the process of fetal lung development. TMC/CSE I-A(9), I-B(2d)
 - b. Describe factors contributing to cardiopulmonary transition between fetal and neonatal life. TMC/CSE I-A(9), I-B(2d)
 - c. Describe techniques of physical assessment of the neonate. TMC/CSE I-A(9)
 - d. Describe etiology, pathophysiology, clinical manifestations, diagnosis, and treatment of neonatal cardiopulmonary diseases. TMC/CSE I-B(6c-e)
 - e. Discuss the indications, the hazards, and equipment related to the treatment of neonatal disorders. TMC/CSE II-A
 - f. Discuss appropriate techniques of treatment of neonatal cardiopulmonary failure according to the Neonatal Resuscitation Program. TMC/CSE III-G(1)
- 2. Apply concepts related to pediatric management.
 - a. Describe etiology, pathophysiology, clinical manifestations, diagnosis, and treatment of pediatric cardiopulmonary diseases. TMC/CSE III-I(5)
 - b. Discuss the indications, hazards, and equipment related to the treatment of pediatric disorders. TMC/CSE II-A
 - c. Discuss appropriate techniques of treatment of pediatric cardiopulmonary failure according to PALS Resuscitation Guidelines. TMC/CSE III-G(1)
 - d. Discuss sedation and comfort techniques for pediatric patients as they apply to general floor and ICU care. TMC/CSE III-H(8)

Description:	This course is designed to care practice through the simulations in a laboratory approach to problem solvi techniques may include tr	integrate the use of care pla y environment ing. Critical thi aditional face	essential eler ans, case stuc t. Students w inking is emp -to-face or or	ments of respiratory lies, and clinical ill develop an analytical hasized. (Delivery Iline.)		
Hour Breakdown:	Hour Breakdown: Semester Credit Hours Lecture Lab Clock Hours					
	3	2	2	60		

Respiratory Care Seminar

Prerequisite:

Course Number and Name:

Instructor Approved

RCT 2713

- 1. Review NBRC Detailed Content Outline for the Therapist Multiple Choice Examination.
 - a. Complete mock exams.
 - b. Discuss NBRC exam content.
 - c. Discuss test taking strategies.
 - d. Discuss cognitive levels to include recall, application, and analysis.
- 2. Review NBRC Detailed Content Outline for the Clinical Simulation Examination.
 - a. Complete mock exams.
 - b. Discuss NBRC exam content.
 - c. Discuss test taking strategies.
 - d. Discuss cognitive levels to include recall, application, and analysis.
- 3. Participate and demonstrate in professional development to include but not limited to temporary licensure, resume building, interview techniques, appropriate attire and social media guidelines

Appendix A: Recommended Tools and Equipment

Capitalized Items

Access to some tools and equipment may be provided by Respiratory Care Technology Program facilities.

- 1. Air compressor, 10–20 PSIG (1 per program)
- 2. Air compressor, high pressure (50 PSIG) (1 per program)
- 3. Airways, adult tracheostomy care simulator (2 per program)
- 4. Airways, fiber optic intubation laryngoscope (1 per 5 students)
- 5. Analogs, adult, mechanical test lungs (1 per program)
- 6. Analogs, infant, mechanical test lungs (1 per program)
- 7. Analytical equipment, assorted aneroid (1 per program)
- 8. Analytical equipment, spirometer (1 per program)
- 9. Analytical equipment, calibrated laboratory type (1 per program)
- 10. Bulk delivery system outlets (1 per 3 students)
- 11. Cardiac monitor with oscilloscope (1 per program)
- 12. Chest percussor (1 per 5 students)
- 13. Defibrillator, with monitor (teaching model)
- 14. Electrocardiograph, 12 channel (1 per program)
- 15. Hospital bed, electric (1–5 per program)
- 16. Humidifiers, ventilator (5 per program)
- 17. Manikins, adult arterial puncture arm (1 per 5 students)
- 18. Manikins, infant, arterial arm (1 per 5 students)
- 19. Manikins, infant intubation (1 per 5 students)
- 20. Manikins, adult intubation (1 per 5 students)
- 21. Manikin, ACLS advanced cardiac life support (1 per program)
- 22. Manikins, patient care with breath and heart sounds (1 per program)
- 23. Manikins, adult CPR (1 per 5 students)
- 24. Manikins, infant resuscitation (1 per 5 students)
- 25. Manikins, pediatric resuscitation (1 per 5 students)
- 26. Monitor, apnea (1 per program)
- 27. Nebulizers, aerosol, croup tent (1 per 10 students)
- 28. Nebulizers, aerosol, ultrasonic (1 per program)
- 29. Oscillator, high frequency chest wall (HFCWO) (1 per program)
- 30. Oxygen blender (1 per 10 students)
- 31. Oxygen concentrator (1 per program)
- 32. Oxygen Analyzer (1 per 4 students)
- 33. Analyzer, end tidal carbon dioxide (1 per program)
- 34. Analyzer, end tidal carbon monoxide (1 per program)
- 35. Pulse oximeter (2 per program)
- 36. Respirometer (1 per 5 students)
- 37. Suction source, piped vacuum (1 per program)
- 38. Suction source, portable (1 per program)
- 39. Therapy unit, intrapulmonary percussive (1 per program)
- 40. Oxygen flow meter (20 per program)
- 41. Air flow meter (20 per program)

- 42. Ventilator, bi-pap unit with alarm (1 per program)
- 43. Ventilator, intrapulmonary percussive
- 44. Ventilator, volume (1 per program)
- 45. Ventilator, neonatal mechanical (1 per 5 students)
- 46. Ventilator, microprocessor controlled with graphics (5 per program)
- 47. Ventilator, pressure cycled with stand (1 per 3 students)
- 48. Ventilator, neonatal, high frequency jet ventilator (1 per program)
- 49 Ventilator, neonatal, oscillator ventilator (1 per program)
- 50. Wheelchair, standard adult (1 per program)
- 51. Airway pressure disconnect alarm (1 per program)
- 52. X-ray view box, large (1 per program)
- 53. Pulmonary function machine, portable with spirometry and flow volume loop (1 per program)
- 54. Monitor, transcutaneous oxygen and carbon dioxide monitor (1 per program)
- 55. Portable liquid oxygen system (1 per program)
- 56. Computer (1 per 2 students)
- 57. Model, anatomical, segmental lung (1 per 5 students)
- 58. Model, anatomical, skeleton (1 per program)
- 59. Model, anatomical, upper airway (1 per program)
- 60. Printer, with cable, to be network compatible (1 per 2 computers)
- 61. Computer carts on wheels (1 per each computer)
- 62. TV (1 per program)
- 63. VCR/DVD (1 per program)
- 64. Video camera, DVD (1 per program)
- 65. Data video projector (1 per program)
- 66. Smart board (1 per program)
- 67. Inhaled nitric oxide delivery system (1 per program)

Non-Capitalized Items

- 1. Airway, laryngeal mask (1 per program)
- 2. Blankets (bed) (1 per bed)
- 3. Blood pressure monitors (1 per 2 students)
- 4. Pillows (2 per bed)
- 5. Sheets (3 per bed)
- 6. Nebulizers, aerosol, all purpose (1 per 5 students)
- 7. Flutter (1 per 5 students)
- 8. PEP Positive Expiratory Pressure device (1 per program)
- 9. Suction regulator (1 per 5 students)
- 10. Airways, double lumen (1 per program)
- 11. Airways, esophageal, tracheal Combitube ETC (1 per program)
- 12. Airways, assorted sizes and types
- 13. Airways, cuff pressure manometer (1 per 5 students)
- 14. Airways, negative inspiratory force meter (1 per 5 students)
- 15. Analogs, simple test lungs (1 per student)
- 16. Analytical equipment, calibrated super syringe (1 per program)
- 17. Analytical equipment, PCO2 electrode (1per program)
- 18. Analytical equipment, PH electrode (1 per program)
- 19. Analytical equipment, PO2 electrode (1 per program)
- 20. Analytical equipment, stopwatches, fast sweep (1 per program)
- 21. Cart, E cylinder (3 per program)

- 22. Cart, H cylinder (1 per program)
- 23. Gauges, bourdon (1 per 5 students)
- 24. Generator, Downs Flow (1 per program)
- 25. High pressure delivery tubing (10 air and 10 oxygen per program)
- 26. Humidifiers, heaters (5 per program)
- 27. Humidifiers, heaters (wrap-around) (2 per program)
- 28. Kinetic flow tubes (1 per program)
- 29. Model, anatomical, heart (1 per 10 students)
- 30. Resuscitator, adult self-inflating (1 per 5 students)
- 31. Resuscitator, gas powered (1 per program)
- 32. Resuscitator, pediatric (1 per 5 students)
- 33. Resuscitator, neonatal (1 per 5 students)
- 34. Stethoscope, Doppler (1 per program)
- 35. Thermometer, electronic, tympanic (1 per program)

Recommended Instructional Aids

It is recommended that instructors have access to the following items:

- 1. Tool kit (1 per program)
- 2. Video screen (1 per program)
- 3. TV (1 per program)
- 4. Video camera, DVD (1 per program)
- 5. Destination presentation system (1 per program)
- 6. Data video projector (1 per program)
- 7. Smart board (1 per program)

"Other equipment items can be added when deemed appropriate by the community college industry craft committee or by industry/business training requirements."

Appendix B: Curriculum Definitions AND Terms

- Course Name A common name that will be used by all community colleges in reporting students
- Course Abbreviation A common abbreviation that will be used by all community and junior colleges in reporting students
- Classification Courses may be classified as the following:
 - Career Certificate Required Course A required course for all students completing a career certificate.
 - Technical Certificate Required Course A required course for all students completing a technical certificate.
 - Technical Elective Elective courses that are available for colleges to offer to students.
- Description A short narrative that includes the major purpose(s) of the course
- Prerequisites A listing of any courses that must be taken prior to or on enrollment in the course
- Corequisites A listing of courses that may be taken while enrolled in the course
- Student Learning Outcomes A listing of the student outcomes (major concepts and performances) that will enable students to demonstrate mastery of these competencies

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75% of the time allocated to each course. The remaining 25% of each course should be developed at the local district level and may reflect the following:
 - Additional competencies and objectives within the course related to topics not found in the state framework, including activities related to specific needs of industries in the community college district
 - Activities that develop a higher level of mastery on the existing competencies and suggested objectives
 - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed or revised
 - Activities that include integration of academic and career-technical skills and course work, school-to-work transition activities, and articulation of secondary and postsecondary careertechnical programs
 - Individualized learning activities, including work-site learning activities, to better prepare individuals in the courses for their chosen occupational areas
- Sequencing of the course within a program is left to the discretion of the local college. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors. Programs that offer an Associate of Applied Science Degree must include all of the required Career Certificate courses, Technical Certificate courses **AND** a minimum of 15 semester hours of General Education Core Courses. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester. Each community college specifies the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science Degree at their college.
- In order to provide flexibility within the districts, individual courses within a framework may be customized by doing the following:

- Adding new student learning outcomes to complement the existing competencies and suggested objectives in the program framework.
- Revising or extending the student learning outcomes
- Adjusting the semester credit hours of a course to be up 1 hour or down 1 hour (after informing the Mississippi Community College Board [MCCB] of the change)

Appendix C: Course Crosswalk

Course Crosswalk Respiratory Care Technology CIP 51.0908– Respiratory Care Technology									
Note: Courses that have been added or changed in the 2011 curriculum are highlighted.									
Existing			Revised						
2011 MS Curriculum Framework			2020MS Curriculum Framework						
Course	Course Title	Hours	Course	Course Title	Hours				
Number			Number						
RCT 1213	Respiratory Care Science	3	RCT 1213	Respiratory Care Science	3				
RCT 1223	Patient Assessment and		RCT 1223	Patient Assessment and Planning					
	Planning	3			3				
RCT 1313	Cardiopulmonary Anatomy		RCT 1313	Cardiopulmonary Anatomy and					
	and			Physiology					
	Physiology	3			3				
RCT 1322	Pulmonary Function Testing	2	RCT 1322	Pulmonary Function Testing	2				
RCT 1416	Respiratory Care Technology		RCT 1416	Respiratory Care Technology I					
	1	6			6				
RCT 1424	Respiratory Care Technology		RCT 1424	Respiratory Care Technology II					
	П	4			4				
RCT 1515	Clinical Practice I	5	RCT 1515	Clinical Practice I	5				
RCT 1523	Clinical Practice II	3	RCT 1523	Clinical Practice II	3				
RCT 1613	Respiratory Care		RCT 1613	Respiratory Care Pharmacology *					
	Pharmacology *	3			3				
RCT 2333	Cardiopulmonary Pathology	3	RCT 2333	Cardiopulmonary Pathology	3				
RCT 2434	Respiratory Care Technology		RCT 2434	Respiratory Care Technology III					
	111	4			4				
RCT 2533	Clinical Practice III	3	RCT 2533	Clinical Practice III	3				
RCT 2545	Clinical Practice IV	5	RCT 2545	Clinical Practice IV	5				
RCT 2613	Neonatal/Pediatrics		RCT 2613	Neonatal/Pediatrics					
	Management	3		Management	3				
RCT 2713	Respiratory Care Seminar	3	RCT 2713	Respiratory Care Seminar	3				

Appendix D: Recommended Textbook List

RESPIRATORY CARE TECHNOLOGY	TEXTBOOK LISTS
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CIP: 51.0908- RESPIRATORY CARE TECHNOLOGY

Title	Author	ISBN				
Practical Math for Respiratory Care	Raymond Sibberson	139780815180012				
Respiratory Care Calculations 4 th Edition	David W. Chang	9781284196139				
Fundamentals of Respiratory Care	Kenneth A. Wyka; Paul J. Mathews; John Rutkowski	9781111321093				
Respiratory Care Principles and Practice	Dean R. Hess, Neil R. MacIntyre, MD, William F. Galvin, Shelley C. Mishoe,	9781284155228				
Foundations in Neonatal and Pediatric Respiratory Care	Teresa A. Volsko; Sherry Barnhart,	9781449652708				
The Comprehensive Respiratory Therapist Exam Review	James Sills	9780323241342				
Respiratory Therapy Exam Review	Gary Persing	9780323553681				
Basic Clinical Lab Competencies Respiratory Care	Gary White	9781435453654				
Egan's Fundamentals of Respiratory Care, 12th Edition	By Robert M. Kacmarek, PhD, RRT, FAARC, James K. Stoller, MD, MS and Al Heuer, PhD, MBA, RRT, RPFT, FAARC	ISBN: 9780323811217				
Workbook for Egan's Fundamentals of Respiratory Care, 12th Edition	Robert M. Kacmarek, PhD, RRT, FAARC, James K. Stoller, MD, MS and Al Heuer, PhD, MBA, RRT, RPFT, FAARC	ISBN: 9780323553667				
Mosby's Respiratory Care Equipment, 10th Edition	J. M. Cairo, PhD, RRT, FAARC	ISBN: 9780323712217				
Respiratory Care Anatomy and Physiology, 4th Edition	Will Beachey, PhD, RRT, FAARC	ISBN: 9780323416375				
Rau's Respiratory Care Pharmacology, 10th Edition	Douglas S. Gardenhire, EdD, RRT-NPS, FAARC	ISBN: 9780323553643				
Workbook for Rau's Respiratory Care Pharmacology, 10th Edition	Douglas S. Gardenhire, EdD, RRT-NPS, FAARC	ISBN: 9780323553650				
Clinical Manifestations and Assessment of Respiratory Disease, 8th Edition	Terry Des Jardins, MEd, RRT and George G. Burton, MD, FACP, FCCP, FAARC	ISBN: 9780323553698				
Neonatal and Pediatric Respiratory Care, 5th Edition	Brian K. Walsh, PhD, RRT-NPS, RRT-ACCS, RPFT, FAARC	ISBN: 9780323479479				
Respiratory Physiotherapy Pocketbook, 3rd Edition	Jane Cross, EdD, MSc, Grad Dip Phys, MCSP, Mary Ann Broad, BSc, MCSP, MSc, BSc, MCSP,	ISBN: 9780702055072				

	Matthew Quint, Grad Dip Phys, MCSP, MPhil, Paul Ritson, MCSP, Grad Dip Phys and Sandy	
	Thomas, MEd, Cert Ed, MCSP, Dip TP	
Clinical Skills: Respiratory Care	Elsevier	ISBN: 9780323394321
Crash Course Respiratory	Hannah Lawrence, BSc, MBBS,	ISBN: 9780702073663
Medicine, 5th Edition	MRCP and Thomas Moore, BMedSci, BMBS, MRCP	
Respiratory Physiology, 2nd Edition	Michelle M. Cloutier, MD	ISBN: 9780323595780
Pilbeam's Mechanical Ventilation, 7th Edition	J M Cairo, PhD, RRT	ISBN: 9780323551274
Workbook for Pilbeam's Mechanical Ventilation, 7th Edition	J M Cairo, PhD, RRT	ISBN: 9780323551267
Respiratory Care: Principles and Practice 4 th edition	Dean R. Hess, PhD, RRT, FAARC; Neil R. MacIntyre, MD, FAARC; William F. Galvin, MSEd, RRT, CPFT, AE-C, FAARC; Shelley C. Mishoe, PhD, RRT, FAARC	ISBN: 978128415522
Respiratory Care: Patient Assessment and Care Plan Development Second Edition	David C. Shelledy, PhD, RRT, RPFT, FAARC, FASAHP; Jay I. Peters, MD	ISBN: 9781284206227
Respiratory Care Calculations Revised Fourth Edition	David W. Chang, EdD, RRT	ISBN: 9781284196139
The Respiratory Therapist as Disease Manager First Edition	Harry R Leen, RRT, MPH	ISBN: 9781284168952
Respiratory Care: Cardiopulmonary Anatomy & Physiology First Edition	Margaret V. Clark, MSc, RN, RRT-NPS, CMPP	ISBN: 9781284164848
Equipment for Respiratory Care Second Edition	Teresa A. Volsko, MBA, MHHS, RRT, CMT-E, FAARC; Robert L. Chatburn, MHHS, RRT-NPS, FAARC; Mohamad F. El-Khatib, MD, PhD, MBA, RRT	ISBN: 9781284196221
Cardiopulmonary Pharmacology for Respiratory Care First Edition	Jahangir Moini, MD, MPH	ISBN: 9781449615604
Neonatal Respiratory Car <u>e</u> <u>Handbook</u> <u>First Edition</u>	Elgloria A. Harrison, MS, RRT- NPS	ISBN: 9780763755461