

ACADEMIC AFFAIRS

Mission Statement, Program Outcomes, and Assessment For Associates Degree in Respiratory Care Technology

Mission Statement: The mission of the Respiratory Care Technology Program is to provide didactic, laboratory, and clinical experiences that will enable graduates of the program to demonstrate the technical, professional and analytical skills needed to positively impact the surrounding communities through administration of respiratory modalities.

Program Outcomes: The Orangeburg-Calhoun Technical College Respiratory Care Technology Program utilizes the following indicators as expected outcome criteria.

Objective 1: Cognitive domain: Upon Completion of the Program, students will demonstrate the ability to comprehend, apply, and evaluate clinical information relevant to their roles as advanced level therapists.

Objective 2: Psychomotor Domain: Upon completion of the program, students will demonstrate the technical proficiency in the skills necessary to fulfill their roles as advanced level therapists.

Objective 3: Affective Domain: Upon completion of the program, students will demonstrate professional behavior consistent with employer expectations as advanced level therapists.

RESPIRATORY CARE TECHNOLOGY

Graduates with a degree in Respiratory Care Technology should be able to demonstrate knowledge and skills in the following areas:

I. Assess/Interpret Patient Needs & Make Recommendations Including
Age Specific Criteria

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| 1. Review patient record (history, etc.) | RES 101 |
| 2. Interview patient | RES 101 |
| 3. Assess patient status | RES 111 |
| 4. Evaluate need and indications for appropriateness of therapy ordered | RES 121 |
| 5. Perform palpation/percussion procedures | RES 150 |
| 6. Perform auscultation | RES 121; RES 150 |

7. Knowledge of pain management	RES 246
8. Assess apgar scoring/gestational age	RES 205
9. Review radiography procedure results	RES 111
10. Read & interpret radiographs, lab, data, ekg, etc.	RES 150; RES 255
11. Perform & evaluate spirometry/ABG/pulse oximetry/ ETCO ₂ , PEFR	RES 152
12. Participate in interdisciplinary patient care plans	RES 274
13. Knowledge of advanced directives	RES 101
II. Select, Assemble & Check Proper Operation & Cleanliness of Device Equipment	
1. Oxygen administration devices and equipment	RES 101
2. Aerosol generators	RES 121
3. Ventilators/breathing circuits/CPAP/BIPAP/IPPB	RES 131
4. Artificial airways (Passy-Muir speaking, Oral airways, nasal trumpet, trach button)	RES 131
5. Suction devices	RES 131
6. Chest tubes	RES 111
7. Perform preventive maintenance	RES 121; RES 131; RES 141
8. Chest Tubes	RES 111
9. Manometers & gauges	RES 101
10. Spirometers	RES 141
11. Resuscitation devices	RES 141
12. Percussors & vibrators	RES 121
13. PEP device, vibratory PEP	RES 121
14. Gas delivery (Liquid O ₂ /Specialty Gases)	RES 101
15. Pediatric equipment, croup tent/SPAG	RES 101
16. Neonatal equipment, O ₂ hood	RES 205
17. Select appropriate device for age and size	RES 205
18. Select appropriate agent for disinfection & sterilization	RES 236
19. Perform and monitor effectiveness of disinfection & sterilization procedures	RES 236
20. Terminate therapy based on adverse patient response & notify appropriate others	RES 121
21. Recommend modifications to patient care plan	RES 232
22. Perform and document quality control for: ABG analyzers, PFT	RES 152

equipment & gas metering devices	
23. Knowledge of CLIA/CAP/JACHO regulations	RES 101, RES 236
24. Follow OSHA guidelines for storage and transportation of clinical gases	RES 101
25. Environmental safety devices	RES 121
26. Troubleshoot equipment	RES 236
III. Initiate, Conduct, & Modify Therapeutic Procedures	
1. Explain goals & therapy to patient	RES 121
2. Practice standard precaution procedures	RES 121
3. Perform sterile procedures for sputum specimen collection and analysis	RES 150
4. Position patient properly	RES 121
5. Maintain adequate humidity	RES 101
6. Follow therapist-driven protocols	RES 274
7. Insert oral & nasal airways	RES 152
8. Assist/perform endotracheal intubation	RES 152
9. Maintain patent airway to include care of artificial airways, lavage, and suctioning	RES 152
10. Perform extubation	RES 253
11. Perform bronchial hygiene therapy	RES 121
12. Instruct & encourage proper breathing/coughing techniques	RES 121
13. Perform percussion, vibration, and postural drainage	RES 121
14. Perform nasotracheal & orotracheal suctioning	RES 152
15. Administer/adjust aerosol therapy	RES 121
16. Administer prescribed pharmacological agents	RES 121
17. Knowledge of aspirations, e.g., <i>meconium</i>	RES 205
18. Instruct, perform, & monitor incentive spirometry and peak flow	RES 121
19. Instruct, perform, & monitor IPPB therapy	RES 121
20. Perform PEP & vibratory PEP therapy	RES 121
21. Select appropriate ventilator	RES 141
22. Initiate proper mechanical ventilation parameters	RES 141
23. Administer, analyze and adjust oxygen therapy	RES 121; RES 131; RES 141
24. Initiate & adjust CPAP/BIPAP therapy	RES 101
25. Perform CPR, ACLS, PALS, NRP, & manual resuscitation	RES 150
26. Initiate and/or conduct pulmonary rehabilitation	RES 232

27. Monitor patient oxygenation during ambulation & nocturnal pulse oximetry	RES 150
28. Apply hemodynamic monitoring	RES 274
29. Initiate and maintain sterile techniques as appropriate	RES 152
30. Perform critical O ₂ transport	RES 150
31. Perform transcutaneous monitoring	RES 205
IV. Evaluate, Monitor, & Reassess Patient Response to Respiratory Therapy	
1. Measure & record vital signs	RES 101
2. Monitor cardiac rhythm	RES 123
3. Monitor hemodynamic status	RES 249
4. Recommend appropriate therapy & diagnostic tests	RES 232
5. Review RAD procedures results	RES 111; RES 123
6. Review chest x-ray	RES 111; RES 123
7. Auscultate chest	RES 121; RES 131
8. Monitor sputum	RES 121
9. Interpret arterial blood gases	RES 131
10. Adjust & check all alarm systems	RES 141
11. Initiate weaning procedures	RES 141
12. Note patient response to mechanical ventilation	RES 141
13. Evaluate wave-form	RES 249
14. Monitor cuff pressures	RES 131
15. Calculate VD/VT	RES 236
16. Calculate A—a DO ₂	RES 101
17. Measure compliance	RES 141
18. Measure vital capacity, basic spirometry, PIP, I:E, & NIF	RES 236
19. Calculate O ₂ content	RES 101
20. Assess and modify therapy as needed	RES 121; RES 131; RES 141
V. Patient and Significant Others Education	
1. Participate in interdisciplinary patient & family education	RES 232
2. Participate in discharge planning	RES 232
3. Conduct follow-up sessions as applicable	RES 232
4. Address prevention and wellness issues	RES 232
5. Provide education in asthma & smoking cessation, COPD	RES 232

6. Provide patient information on community services	RES 232
VI. Provide Documentation	
1. Record information re. therapy administered “ <i>what, how, when</i> ”	RES 101
2. Record objective data	RES 101
3. Record subjective data	RES 101
4. Communicate all pertinent patient information to appropriate others	RES 121
5. Follow institutional procedures for documentation	RES 101
6. Understand institutional procedures for documentation	RES 101
7. Chart all pertinent information	RES 121
VII. Assist Physician in Procedures	
1. Bronchoscopy	RES 249; RES 274
2. Thoracentesis chest tube insertion	RES 249; RES 274
3. Surgical procedures	RES 249; RES 274
4. Intubation, arterial line, swan-ganz	RES 152; RES 249
VIII. Training in Sub Acute/Home Health Care Sites	
1. Medicare resource knowledge as it related to RT	RES 111; RES 232
2. State of and Future of Health Care	RES 101; RES 232
3. Home health care observation	RES 274
IX. Diagnostics	
1. Perform & analyze diagnostic procedures, e.g., pulmonary function tests, electrocardiogram, arterial blood gas and analysis	RES 236
2. Perform EKG and review	RES 150; RES 236
3. Acquire knowledge of apnea monitoring/sleep studies/respiratory impedance, plethysmography	RES 274

Professional Skills Outcomes:

Graduates with a degree in Respiratory Care Technology will be able to demonstrate effective communication and professional skills in these areas.

EXAMPLE: Respiratory Care Technology

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| X. Demonstrate Professionalism | |
| 1. Present a clean, neat appearance | RES 101 |
| 2. Demonstrate a positive attitude | RES 101 |
| 3. Follow institution policies | RES 101 |
| 4. Recognize legal responsibilities | RES 101 |
| 5. Maintain patient confidentiality & privacy | RES 101 |
| 6. Demonstrate professional ethics | RES 101; RES 121 |
| 7. Give & receive criticism & praise appropriately | RES 101 |
| 8. Participate in continuing education and professional development | RES 101 |
| 9. Support state & national RT organizations | RES 101 |
| 10. Recognize that personal behavior outside the workplace may affect work performance/perception | RES 101 |
| XI. Effective Communication and Interpersonal Skills | |
| 1. Develop and practice critical thinking skills | RES 111; RES 121; RES 131; RES 141 |
| 2. Receive and give pertinent information, written & orally, within multidisciplinary team | RES 101, RES 121, RES 131, RES 141 |
| 3. Develop time management skills | RES 150, RES153, RES 253, RES 255, RES 274 |
| 4. Become a team player/communicate effectively with health care team | RES 150, RES 153, RES 253, RES 255, RES 274 |
| 5. Communicate with patients on their level | RES 150, RES 153, RES 253, RES 255, RES 274 |
| 6. Practice attentive listening skills | RES 150, RES 153, RES 253, RES 255, RES 274 |

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| 7. Develop and maintain working relationships with co-workers | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 8. Interpret non-verbal communication | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 9. Demonstrate a non-judgmental, caring attitude | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 10. Develop and demonstrate assertive techniques | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 11. Practice telephone etiquette | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 12. Write legibly | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 13. Exhibit self-confidence | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 14. Develop conflict management skills | RES 150, RES 153, RES 253, RES 255,
RES 274 |
| 15. Develop service excellence/patient satisfaction | RES 150, RES 153, RES 253, RES 255,
RES 274 |

XII. Effective Communication

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| 1. Developing listening skills | RES 101 |
| 2. Write legibly and coherently | RES 101, ENG 101 |
| 3. Create satisfactory medical correspondence | RES 101, ENG 101 |
| 4. Develop and prepare written and oral report | RES 101, ENG 101 |
| 5. Use current technology to communicate | RES 101, CPT 170 |
| 6. Identify chain of command for information flow | RES 101 |
| 7. Develop and demonstrate assertive techniques | RES 101 |
| 8. Communicate on level of receiver | RES 101 |
| 9. Exhibit positive body language | RES 101 |
| 10. Practice correct telephone etiquette | RES 101 |
| 11. Interpret non-verbal communication | RES 101 |
| 11. Give and receive constructive criticism | RES 101 |
| 12. Give and receive two-way communications | RES 101 |
| 13. Select appropriate format and style for written communications | RES 101 |
| 14. Develop skills for effective oral and visual presentations | RES 101, CPT 170, ENG 101 |
| 15. Interpret visual presentations | RES 101, CPT 170 |

16. Keep accurate records

RES 101

XIII. Teamwork

1. Develop and maintain relationships with co-workers
2. Become a team player with health care team
3. Give and receive information within multidisciplinary team

RES 150, RES 153, RES 253, RES 255,
RES 274
RES 150, RES 153, RES 253, RES 255,
RES 274
RES 150, RES 153, RES 253, RES 255,
RES 274

Assessment Methods:

Direct Student Learning Outcomes
Respiratory Care Technology

Direct student outcomes are assessed through objective and subjective testing methods. These include Laboratory Competencies where students must demonstrate proficiency skills in laboratory setting and Clinical Skills Competencies performed at designated clinical sites. The program has a review course, RES 241, which includes direct assessment of student performance through mock Self Assessment Examinations provided by the National Board for Respiratory Care. These mock student Self Assessment Examinations(SAE) are the Certified Respiratory Therapy Examination(CRT,SAE), the Registered Respiratory Therapy Examination(RRT, SAE) and Clinical Simulations Examination(CSE,SAE). Through this course, RES 241, students are required to attend the board review seminar provided by Ketterings Inc., which also provides direct testing of board examination information.

100% of students were successful in the RES 241 course.

Indirect Student Learning Outcomes

Indirect measurement of Respiratory Care Technology student outcomes are accomplished through job placement data, graduate surveys, employer satisfaction surveys, student evaluations, enrollment data, retention statistics and graduation rates.

Retention

OCtech Benchmark #1 – The program will have retained in the following Fall semester not less than 60% of the new students who enrolled in the prior Fall semester.

- Over the last three years, program retention has been: 2003 (100%), and 2004 (100%).

Job Placement

OCtech benchmark #2 – Using the State Technical College System definitions for employment, not less than 80% of the graduates of the program will have secured employment in the field.

- Job placement has been: 2003 (87.5%). The RES program recently transitioned to an advanced standing accreditation and, therefore, is reporting results from that point on.

Graduation Rates

OCtech benchmark #3 – The number of graduates will average 25% of the average annual fall enrollment for the program.

- The graduation rate has been: 2003-2004 (32.45%).

Internal Measures of Success

Direct measures of soft skills and academic/program foundation skills:

100% of students will score 75% or greater on mock SAE's

100% of students will achieve 93% or greater on Laboratory and Clinical Skills Competencies

100% of students will maintain an 80% average in all Respiratory course work, didactic and clinical

Indirect measures of program success

100% Employer Satisfaction Surveys will provide a 3.0 or greater on the Likert scale of 1-5

100% of Graduate surveys will provide a 3.0 or greater on the Likert scale of 1-5

Maximum student enrollment

Review Process and Use of Results:

Describe review process and deliverables.

Respiratory Care Technology is a competency-driven curriculum. Its competencies are determined through qualified DACUM panels and are validated by Health Care Professionals and the curriculum's own advisory committee. DACUMS are conducted every four years to ensure currency. The last DACUM was held in 2002. Based on the DACUM, the Respiratory Care Program faculty will perform the following internal processes yearly as part of the strategic planning and review process.

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- Ensure that program outcomes are appropriate and current.

- Ensure that program outcomes are addressed in the exit competencies of at least one required course.
- Ensure that within those required courses that students demonstrate the desired program outcome either through written or performance-based tests and/or graded assignment.
- Ensure that equipment inventory, facilities, and budget support program outcomes and the strategic plan.
- Ensure that successful completion of prerequisite courses is a satisfactory predictor of student success in subsequent courses.
- Monitor student portfolios from capstone performances against DACUM competencies.
- Review grade distribution and failure rates; student evaluations; job placement results; employer satisfaction survey; enrollment statistics; retention rates, and graduation rates.
- Ensure that the College Library can assure access to appropriate and current research materials.
- Provide feedback to the general education faculty on observed general education competencies and make recommendations as needed.
- Make a report to the advisory committee on assessment findings and solicit feedback.
- Work with Division Dean and Instructors to revise syllabi an/or course/department offerings as needed.
- Conduct program self study as required by accrediting agencies.

The Respiratory Care Technology program is accredited by the Committee on Accreditation for Respiratory Care(CoARC).

What action(s) did the Program take this past academic year that improved and expanded student-learning outcomes?

Changes have been made within the Respiratory Care Technology Program to improve student success based on recommendations from our advisory committee and instructors. The Advisory Board consists of members of local health care affiliates who would be in the positions to hire our graduates or hold the same types of jobs as our graduates.

Respiratory Care Technology Actions

Data Source: Advisory anecdotal records

Increase emphasis on Critical Care and Intensive Care Therapy: Program was changed to an Advanced Therapist Program. The higher level course work was incorporated into all of the RES courses. Advisory Minutes (2002) reflect the need for

Advanced Practitioners to meet the needs of the work force of our communities of interests. The NBRC Advance Therapists (RRT) matrix guidelines were used to incorporate needed curriculum into both the didactic and clinical course work. The main changes involved more Critical Care, Neonatal Care, and increased Physician through lecture and involvement with student clinical education. Clinical Experiences were also expanded by added additional ICU rotations(RES 253, 255, 274), Physician Rounds(RES 152, 253, 255, 274), and Neonatal Clinical Rotations(RES 274).

Measurement: 100% of Employer Satisfaction Surveys for 2004 graduates provide a 3 or greater on the Likert rating scale of 1-5

Data Source: Advisor anecdotal records, CRT pass rates

Improve problem Solving and Critical thinking Skills: Incorporated into all RES course work Problem Based learning Approach to Instruction. Students are given more Critical Thinking Scenarios with patient Case Study Reviews and Peer Reviews with Instructors acting as Facilitators.

Measurements: Seven out of the ten graduates of 2004 have successfully completed the CRT board examination.

100% of Employer Satisfaction Surveys for 2004 graduates provide a 3 or greater on the Likert rating scale of 1-5

Data Source: Advisory anecdotal records, Attrition and Graduation Rates

Incorporate an Additional Retention Strategy: A Shadowing Program was instituted (Summer 2004) to improve the retention outcomes. Once students are accepted into the Program but before classes begin they are assigned to spend time observing the job functions within a respiratory care department. This gives them a final opportunity before the program begins to understand clearly what type of responsibility and skills are required for successful outcomes.

Measurements: Results pending. Class which participated in Shadowing will graduate during the Summer 2006.