



INSTRUCTIONAL PACKAGE

RES 249

Comprehensive Applications

Effective Term

Summer/2018

INSTRUCTIONAL PACKAGE

PART I: COURSE INFORMATION

Effective Term: 2018

COURSE PREFIX: RES 249

COURSE TITLE: COMPREHENSIVE APPLICATIONS

CONTACT HOURS: 6hrs.

CREDIT HOURS: 2

RATIONALE FOR THE COURSE:

1. Provide continued clinical experiences supporting the application of previously acquired lab based clinical skills to patients in appropriate hospital based clinical rotations.
2. Provide new clinical experiences that support current and previously acquired clinical skills to patients in alternative Respiratory Care settings.
3. Demonstrate the ability to safely apply previously acquired didactic and lab course material to respiratory care patients.
4. Perform basic respiratory care procedures in a safe and effective manner.
5. Apply and enhance communication skills with patients, clinical preceptors as well as other members of the health care team needed to deliver an appropriate respiratory care.
6. As well as serving all persons while in clinical rotations without discrimination by acknowledging and appreciating diversity.
7. Apply course content material to successfully pass Respiratory Care credentialing exams.

COURSE DESCRIPTION:

This course includes the integration of didactic and clinical training in respiratory care technology. This section will introduce students to the alternative types of Respiratory Care including Homecare, Sleep Clinics, and Pulmonary Rehabilitation.

PREREQUISITES/CO-REQUISITES:

General Education courses BIO 210, 211, 225, MAT 120, ENG 101, PSY 201, and HUM. Respiratory Care courses RES 101, RES 121, RES 246, RES 152, RES 111, RES 131, RES 232, RES 154. *Required prerequisite courses must be completed with a grade of "C" or better.*

REQUIRED MATERIALS:

Mosby's Respiratory Care Equipment, J. M. Cairo, 9th edition.

Wilkins' Clinical Assessment in Respiratory Care, 7th edition.

Respiratory Simulations, Oakes

Classmate

Dana Oakes, Pocket Guide to Respiratory Care 9th ed. and ABG Pocket Guide 2nd ed.

Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.

[BOOKSTORE.](#)

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

March 2018

ADDITIONAL REQUIREMENTS:

Scrubs, Shoes, Watch and Stethoscope

Optional: hemostats, scissors, and pocket pulse oximeter

TECHNICAL REQUIREMENTS:

Access to Desire2Learn (D2L), HGTC's student portal for course materials.

WaveNet and D2L email access.

- Data Arc account for clinical time clock, procedure checklist, and clinical assessment evaluations.
- Prior to graduation, each student must take and pass a series of comprehensive secure NBRC respiratory care exam. The first attempt fees for the exams will be included in tuition costs.
 - You must score 75% or greater on each of these exams.
 - THIS FEE INCLUDES THE COST OF THE DATAARC SYSTEM.

CLASSROOM ETIQUETTE:

It is recognized that personal communication devices, including smart phones, can play a fundamental role in both education and urgent personal connections (for example, a school calling about a sick child). For this reason, use of such devices is permitted in the classroom, with specific reservations:

1. Please set all devices to 'silent' or 'vibrate' during instructional time.
2. Use of devices during testing is NOT allowed.
3. Please limit use of devices to urgent personal connections and educational purposes directly related to the course material being discussed.
4. If you receive an urgent text/call during class that requires immediate attention, please quietly excuse yourself from the classroom to respond to the call.
5. Please refrain from using 'ear buds' or continually using the device as a learning distraction. Professor retains the right to disallow the use of such devices should the policy become a distraction.
6. When on experiential rotations, students are expected to abide by the policies of that institution.

PLAGIARISM & CHEATING:

Refer to the College catalog & Student handbook (<http://www.hgtc.edu/documents/policys/Chapt9.pdf>). The student may be assigned a failing grade for the course, or may be required by the professor to withdraw from the course and/or the respiratory care program. Such actions are deemed to be unprofessional behavior within this program and will not be tolerated.

Part II: Student Learning Outcomes**COURSE LEARNING OUTCOMES and ASSESSMENTS*:**

1. Demonstrate effective communication with respiratory preceptors, as well as all other members of the health care team. As well as serving all persons while in clinical rotations without discrimination by acknowledging and appreciating diversity. (Affective-Behavior)
2. Demonstrate the ability to record accurate and complete documentation of respiratory care services provided to patients. (Cognitive-Knowledge & Psychomotor-Skills)
3. Students will demonstrate the ability to provide appropriate patient assessments to provide the following treatment applications: oxygen, medication aerosol, mucous clearance, lung inflation

therapies applying each (DAS) Data Arc Sheet & (TSS) therapeutic summary sheet. (Cognitive-Knowledge & Psychomotor-Skills)

4. Students will exhibit the ability to perform a thorough patient assessment, and apply critical decision making skills to determine the patient's cardio-pulmonary status and diagnosis, recommend or suggest modifications to the patient's current respiratory care plan based on AARC CPG's and the clinical affiliates patient care policies. (Cognitive-Knowledge & Psychomotor-Skills)
5. Students will demonstrate the ability to safely perform and analyze an ABG. (Psychomotor-Skills)
6. Students will demonstrate the ability to perform artificial airway assessment. (Psychomotor-Skills)
7. Students will demonstrate the ability to maintain an artificial airway. (Cognitive-Knowledge)
8. Students will demonstrate the ability to perform endotracheal suctioning. (Psychomotor-Skills)
9. Student's will exhibit the critical thinking skills to interpret clinical findings and based on the clinical findings, provide supraglottic or subglottic tracheal suctioning and suggest modifications to the patient's current respiratory care plan based on AARC CPG's and the clinical affiliates patient care policies. (Cognitive-Knowledge & Psychomotor-Skills)
10. Administer oxygen therapy (Psychomotor-Skills)
11. Administer aerosol therapy to a critical care patient. (Psychomotor-Skills)
12. Administer airway care to a critical care patient. (Psychomotor-Skills)
13. Assess a critical care patient. (Cognitive-Knowledge)
14. Assist in providing basic home care procedures including patient assessment. (Psychomotor-Skills)
15. Practice proper and patient specific, emergency care. (Affective-Behavior)
16. Apply medical ethics and laws specific to the practice of respiratory care. (Affective-Behavior)
17. Apply knowledge and skills needed to successfully pass NBRC exams. (Cognitive-Knowledge)

TOPICAL OUTLINE

- I. Humidity and Aerosol Therapy
- II. Medical Gas and Oxygen Therapy
- III. Hyperinflation Therapy
- IV. Chest Physiotherapy
- V. Patient Assessment and Monitoring
 - a. Chest X-Ray
 - b. Arterial Blood Gas
 - c. Breath Sounds and Airway Assessment
- VI. Airway Care
- VII. Advanced Diagnostics
 - a. Pulmonary Function Testing Chapter 6
 - b. Polysomnography Chapter 10
 - c. Pulmonary Rehab Chapter 10
 - d. Home Care Chapter 10
- VIII. Emergency Care, NBRC TMC exams and Ethics

COURSE OBJECTIVES

Module I

Material Covered: Humidity and Aerosol Therapy

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition

- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- **Case Study / Tests /TMC Exam**
 - List the Goals, Indications, Contra-indications and hazards of Humidity and Aerosol Therapy.
 - Interpret a Humidity and Aerosol Therapy case study and determine if the therapy ordered was indicated or contra-indicated.
- **Clinical Performance/ Skill Check Video following (DAS) Data Arc Sheet.**
- **Clinical Simulation**

Learning Outcomes: (Psychomotor-Skills)

1. List and explain the Goals, Indications, Contra-indications and hazards of Aerosol therapy.
2. Interpret a Humidity and Aerosol Therapy case study and determine if the therapy ordered was indicated or contra-indicated.
3. Administer aerosol therapy with small volume nebulizers.
4. Administer bland aerosol therapy with cool large volume nebulizers.
5. Administer bland aerosol therapy with heated large volume nebulizers.
6. List & explain the steps required to obtain a sputum sample for C&S.

Treatment Rotation

Student Preparation:

Prior to this rotation, the student is required review the Aerosol, therapeutic summary sheet (TSS) and specific terms associated with the patient administration for each therapy such as: patient assessment process, normal patient VS ranges, body humidity, humidity deficit, humidity goals and hazards, MDI and Aerosol therapy, particle size, optimal breathing pattern to achieve optimal aerosol deposition, goals and hazards of aerosol therapy. The student is required to review all medications & solutions used in lung inflation and aerosol therapy and their desired clinical MOA Mode of Action.

Overall Objective:

To assess the skills presented in the previously-taken didactic courses specifically related to periodic clinical treatments as applicable to the clinical environment. It is the intent of the clinical experience to develop confidence and improvement on deficiencies.

Objectives:

1. The student must be able to demonstrate a complete and working knowledge of the indications, contraindications, side-effects, hazards and precautions of Humidity and Aerosol / MDI therapy.
2. The student must be able to monitor the patient's vital signs, elicit the proper response from the patient to achieve the desired therapeutic goals for each treatment modality, and be able to recognize and react properly to adverse reactions. (Apply the 3W's)
3. Should be able to assess the effects of the various treatments and be able to evaluate treatment success and assess the sputum obtained.
4. The student should be able to trouble shoot the treatment device and how to correct minor problems to insure proper patient application.
5. The student should know how to clean, sterilize, the repair process and store equipment.

6. The student must know the indications, contraindications, side-effects, hazards and effects of respiratory care drugs.
7. The student must know the dosages of the various drugs and be able to administer the various drugs and assess their effectiveness and react properly in the presence of an adverse reaction.
8. The student should be able to give an effective, safe treatment to the patient. They should know how to position and coach him to achieve the best results. They should be able to set goals for the patient and be able to assess the results.
9. The student must be able to position and treat the patient safely and effectively, recognize and appropriately respond to adverse patient reaction and be able to evaluate patient effort and educate patient to become involved in their care.
10. The student must be able to demonstrate a complete understanding and working knowledge of the indications, contraindications, side-effects, hazards, and precautions of aerosol/MDI therapy.
11. The student should be able to give the proper medication and give a safe effective aerosol treatment to the patient. They must be able to monitor the patient's vital signs, regulate equipment for the best treatment, and be able to recognize and react to adverse reaction.
12. The student should be familiar with the equipment used for aerosol treatment and be well educated in their use (Micro-nebulizers, High output nebulizers, Mini Heart, Large Heart Nebulizers, Aero-Eclipse nebulizers (misers)).
13. The student must be able to evaluate therapy and educate patients on how to become involved in their own care.

Module II

Material Covered: Medical Gas and Oxygen Therapy

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition
- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- **Case Study / Tests /TMC Exam**
 - List and explain the Goals, Indications, Contra-indications and hazards of Medical Gas and Oxygen Therapy.
 - Interpret a Medical Gas and Oxygen Therapy case study and determine if the therapy ordered was indicated or contra-indicated.
- **Clinical Performance/ Skill Check Video following (DAS) Data Arc Sheet.**
- **Clinical Simulation**

Learning Outcomes: (Psychomotor-Skills)

1. List and explain the Goals, Indications, Contra-indications and hazards of Oxygen therapy.
2. Interpret an Oxygen Therapy case study and determine if the therapy ordered was indicated or contra-indicated.
3. Perform medical gas therapy.

Oxygen Therapy Rotation

Student Preparation:

Prior to this rotation, the student will review the following concepts and terms associated with the patient administration, weaning and discontinuation of medical gases such as: O₂, NO, He/O₂. (Tank colors, gas property, analyze and adjust medical gas concentration, tank safety systems, tank sizes,

bank systems and liquid O₂ systems, flow meters, duration of equipment flow and patient demand flow, regulators, reducing valves, blenders, high / low flow and fixed / variable O₂ devices. Normal patient VS and the various assessment ranges used to recommend appropriate treatment for patients who show signs of hypoxemia and hypoxia.

Over All Objective:

The overall objective of this rotation is to test the skills presented in the previously taken didactic courses specifically related to oxygen therapy and care of patients on this therapy as applicable to the clinical environment. It is the intent of the clinical experience to develop confidence and improvement on deficiencies.

Objectives:

1. Identify the various cylinder colors, shoulder stamps and labels and interpret them accurately.
2. Identify the various storage locations of cylinders in the hospital. They should know the laws governing storage of cylinders.
3. The student should be able to safely transport cylinders from place to place using the proper equipment and body mechanics.
4. Understanding and identification for each safety system must be complete. They should be able to connect and disconnect hardware easily and without delay.
5. Identify various parts of the regulator, and know the difference between a preset, an adjustable, and a multistage regulator. The student should also know the various safety pressure relief valves.
6. The student must be able to apply a regulator to a cylinder with ease and without delay. They should take precautions to keep dirt out of the regulator.
7. The student should be able to pressurize and decompress a regulator without damage to the device and be able to remove and store the regulator properly.
8. The student must be able to identify the various parts of a flow meter and know the difference between compensated and uncompensated. They must be able to test a flow meter for compensation.
9. Should be able to connect a flow meter to a gas source, humidifiers and other gas administration equipment devices.
10. The student must be able to assess patient and equipment to determine if it is a high or low flow system and is delivering correct O₂ percentage.
11. The student must be able to correct the situation if there is evidence the system does not meet or exceed patient's peak inspiratory flow.

Module III

Material Covered: Lung Inflation / Hyperinflation Therapy

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition
- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- **Case Study / Tests /TMC Exam**
 - List and explain the Goals, Indications, Contra-indications and hazards of Hyperinflation therapy.
 - Interpret a Hyperinflation Therapy case study and determine if therapy ordered was indicated or contra-indicated.
- **Clinical Performance/ Skill Check Video following (DAS) Data Arc Sheet.**
- **Clinical Simulation**

Learning Outcomes: (Psychomotor-Skills)

1. Administer incentive spirometry treatment including patient instruction and follow up.
2. Administer intermittent positive pressure breathing to a critical care patient.

Treatment Rotation

Student Preparation:

Prior to this rotation, the student is required review the IS and Lung Hyper Inflation therapeutic summary sheet (TSS) and specific terms associated with the patient administration of each therapy. Review concepts and terms such as: pressure, flow, time, I:E ratio, rate, sensitivity, optimal breathing pattern to achieve optimal therapy effect. Review medications & solutions used in lung inflation therapy and their desired clinical MOA Mode of Action.

Over All Objective:

The overall objective of this rotation is to test the skills presented in the previously-taken didactic courses specifically related to periodic clinical treatments as applicable to the clinical environment. It is the intent of the clinical experience to develop confidence and improvement on deficiencies.

Objectives:

1. The student must be able to demonstrate a complete and working knowledge of the indications, contraindications, side-effects, hazards and precautions of Lung Inflation therapy.
2. The student must be able to monitor the patient's vital signs, elicit the proper response from the patient to achieve the desired therapeutic goals for each treatment modality, and be able to recognize and react properly to adverse reactions. (Apply the 3W's)
3. Should be able to assess the effects of the various treatments and be able to evaluate treatment success and assess the sputum obtained.
4. The student should be able to trouble shoot the treatment device and how to correct minor problems to insure proper patient application.
5. The student should know how to clean, sterilize, the repair process and store equipment.
6. The student must know the indications, contraindications, side-effects, hazards and effects of drugs used in respiratory care.
7. The student must know the dosages of the various drugs and be able to administer the various drugs and assess their effectiveness and react properly in the presence of an adverse reaction.
8. The student should be able to set up various pieces of equipment for I.S. and educate patient to get involved in their care.
9. The student should be able to give an effective, safe treatment to the patient. They should know how to position and coach him to achieve the best results. They should be able to set goals for the patient and be able to assess the results.
10. The student must be able to position and treat the patient safely and effectively, recognize and appropriately respond too adverse patient reactions and be able evaluate patient effort and educate patient to become involved in their care.
11. The student should be able to give and evaluate therapy and educate patients on how to become involved in their own care.

Module IV

Material Covered: Mucous Clearance Adjuncts / Chest Physiotherapy

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition
- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- **Case Study / Tests /TMC Exam**
 - List and explain the Goals, Indications, Contra-indications and hazards of Mucous Clearance therapy.
 - Interpret a Mucous Clearance therapy case study and determine if the therapy ordered was indicated or contra-indicated.
- **Clinical Performance/ Skill Check Video following (DAS) Data Arc Sheet.**
- **Clinical Simulation**

Learning Outcomes: (Psychomotor-Skills)

1. Administer postural drainage.
2. Administer chest percussion.

Treatment Rotation

Student Preparation:

Prior to this rotation, the student is required review the Mucous Clearance (P&PD) therapeutic summary sheet (TSS) and specific terms associated with the patient administration of the therapy. Review concepts and terms such as: Optimal body positions for therapy and improving oxygenation, breath sounds (normal & abnormal), secretions (CCA) color, consistency and amount, chest x-ray land marks and terms.

Over All Objective:

The overall objective of this rotation is to test the skills presented in the previously-taken didactic courses specifically related to periodic clinical treatments as applicable to the clinical environment. It is the intent of the clinical experience to develop confidence and improvement on deficiencies.

Objectives:

1. The student must be able to demonstrate a complete and working knowledge of the indications, contraindications, side-effects, hazards and precautions of Mucous Clearance therapy and the various Mucous Clearance treatment delivery methods.
2. The student must be able to monitor the patient's vital signs, elicit the proper response from the patient to achieve the desired therapeutic goals for each treatment modality, and be able to recognize and react properly to adverse reactions. (Apply the 3W's)
3. Should be able to assess the effects of the various treatments and be able to evaluate treatment success and assess the sputum obtained.
4. The student should be able to trouble shoot the treatment device and how to correct minor problems to insure proper patient application.
5. The student should know how to clean, sterilize, the repair process and store equipment.
6. The student should be able to give an effective, safe treatment to the patient. They should know how to position and coach him to achieve the best results. They should be able to set goals for the patient and be able to assess the results.
7. The student must know indications, contraindications, side-effects, hazards, and precautions of other mucus clearance techniques. (PEP, Vibratory PEP, Flutter, Acapella, High frequency Chest wall compression devices (VEST))
8. The student must be able to position and treat the patient safely and effectively, recognize and appropriately respond too adverse patient reaction and be able evaluate patient effort and educate patient to become involved in their care.

Module V

Material Covered: Patient Assessment & Monitoring

- Arterial Blood Gas Assessment Chapter 2
- Chest X-Ray Interpretation Chapter 3
- ECG Interpretation Chapter 4

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition
- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- Case Study/Tests/Presentations/Lab Competency/TMC Exam
- Clinical Performance/ Skill Check ABG arterial blood gas.
- Clinical Sheets

Learning Outcomes: (Cognitive-Knowledge)

1. Perform patient assessment including inspection: Palpation, percussion, auscultation, and evaluation of radiograph, laboratory, and other diagnostic materials.
2. Perform an Arterial Blood Gas according to DAS following AARC CPG's.
3. Assess a critical care patient's ABG Arterial Blood Gas, ECG Electrocardiogram and X-ray.

ECG & STRESS TEST ROTATION OBJECTIVES

Student Preparation:

Prior to this rotation, the student is required review specific terms associated with the patient electrocardiogram acquisition, electrophysiology of the heart, 12 lead placement on chest, rhythm identification, NSR, tachycardia, bradycardia, PVC, Multi focal PVC, V-Tach, V-Fib, Asystole, Ischemia, Infarction

Over All Objective:

The overall objective of this rotation is to test the skills presented in the previously-taken didactic courses specifically related the aspects of modern ECG, Holter Monitoring and Stress testing as available in the clinical environment.

Objectives:

1. Assist and perform 12 lead EKG on patients.
2. Assist with or perform holter monitoring and cardiac stress testing on patients.
3. Identify normal sinus rhythm on ECG recordings.
4. Identify basic arrhythmias on ECG tracings to include at least sinus tachycardia, bradycardia, ventricular fibrillation, ventricular tachycardia, and asystole.
5. Trouble shoot ECG device for possible machine/operator problems on the ECG strip.
6. Monitor blood pressure and vital signs on stress test patients.
7. Perform an ECG on a patient with minimal supervision.

Module VI

Material Covered: Airway Care of a Critical Care Patient

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition
- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- Case Study/Tests/Presentations/Lab Competency/TMC Exam
- Clinical Performance/ Skill Check (Endotracheal Suction Clinical Check Off). DAS & TSS and AARC CPG's.
- Clinical Sheets

Learning Outcomes: (Psychomotor-Skills)

1. Evaluate and provide maintenance of an artificial airway.
2. Administer suction via various artificial airways according to DAS & TSS and AARC CPG's.
3. Secure an endotracheal tube and a tracheostomy tube
4. Perform Oral, ETT and Tracheostomy Care.

Module VII

Material Covered: Advanced Diagnostics

- Pulmonary Function Testing Chapter 6
- Polysomnography Chapter 10
- Pulmonary Rehab Chapter 10
- Home Care Chapter 10

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition
- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- Case Study/Tests/Presentations/Lab Competency/TMC Exam
- Clinical Sheets

Learning Outcomes: (Knowledge-Cognitive)

1. Explain the purpose of advanced diagnostic procedures.
2. Perform advanced diagnostic procedures including patient assessment testing and evaluation of results.
3. Perform standard rehabilitation/home care procedures including patient assessment, chest physiotherapy, oxygen therapy, aerosol therapy, and exercise therapy.

PULMONARY FUNCTION ROTATION

Student Preparation:

The student is required to review specific vocabulary / terms associated with caring for patients who need Spirometry, Indirect Volumes studies & DLCo performed.

Overall Objective: The student should safely and accurately perform and interpret the PFT.

Objectives:

1. Observe / participate in the following:

- a. Proper and timely PFT equipment set up.
 - b. Perform calibration check according to the most current ATS guidelines.
 - c. Obtaining current patient history and subjective information.
 - d. Identify the appropriate testing protocol based on patient presentation.
 - e. The explanation of PFT procedure in an understandable manner to the patient.
2. Perform Spirometry appropriately according to current ATS guidelines.
 3. Identify test criteria for **Acceptability** according to most current ATS spirometry guidelines.
 - a. No cough during the first second of exhalation
 - b. No Obstructed mouthpiece (tongue or dentures)
 - c. No Leak
 - d. Poor patient effort or early termination or cut-off
 - e. They have good starts with an Extrapolated volume 5% of FVC or 0.15 L, whichever is greater.
 - f. No Early Termination / satisfactory exhalation of 6s (3 s for children) **or** a plateau in the volume–time curve.
 4. Observe and participate in making the necessary adjustments to patient performance as needed.
 5. Identify the three acceptable spirograms that have been obtained.
6. Identify tests that meet **Repeatability** criteria according to the most current ATS spirometry guidelines
 - a. The two largest FVC's must be within 150 mL of each other
 - b. The two largest FEV1's must be within 150 mL of each other
 - c. Minimum of three satisfactory maneuvers.
 7. Identify if testing criteria has been met and if the testing can be concluded.
 8. Observe and participate in the process of assessment and establishing a diagnosis.
 9. Observe and participate in the process of developing a treatment plan.

Polysomnography (Sleep Lab) Rotation

Student Preparation:

Prior to this rotation, the student should review terms and concepts associated with polysomnography and CPAP / BiPAP treatment for OSA. Review RLS, insomnia, obesity, MSLT, narcolepsy.

Over All Objective:

To take those skills learned in previous didactic instruction and clinical rotations pertaining to polysomnography and CPAP / BiPAP treatment for OSA and apply these skills to the diagnostic care environment.

Objectives:

1. Understand the uses of the following physiologic electrodes and their role in an all-night sleep study.
 - A. EEG leads
 - B. Periocular leads
 - C. EMG leads
 - D. Airflow leads (thermistors)
 - E. Chest and abdominal effort leads
 - F. EKG leads
 - G. SAO₂
2. Identify the (RDI) following respiratory abnormalities as they occur on a polysomnographic record:
 - A. Obstructive sleep apnea

- B. Hypopnea
 - C. Central apnea
 - D. Mixed apnea
3. Identify the following sleep stages as they occur on a polysomnographic record:
 - A. Awake
 - B. Stages of Sleep
 - C. REM
 4. Identify a desaturation and be able to correlate with the other sleep channel parameters.
 5. Understand CPAP and/or BIPAP titration and be able to recommend an initial CPAP / BiPAP levels and the process of incremental increases in CPAP in order to reach a therapeutic level according to each patient's needs.
 6. Identify the SpO2 level that supplemental O2 would be added to CPAP therapy to correct hypoxemia?
 7. Identify how much O2 would be added initially, the level of SaO2 desired and the period of time required before the next increase of supplemental O2.
 8. Understand the significance of a clinical history to a polysomnographic recording.
 9. Understand the criteria used for polysomnography reimbursement
 10. Patient follow up and treatment to insure appropriate therapy has started in a timely manner.

HOME CARE ROTATION

Student Preparation:

Prior to this rotation, the student will review the following concepts and terms associated with the Multidisciplinary Care Plan Approach, Case Manager, and criteria used for home care qualification. Review home O2 administration, O2 conservation devices, Pulse dosed O2, O2 delivery systems, tanks, liquid, compressors, flow meters, duration of equipment flow, POX, CPAP, BiPAP, Smart card technology, approved home equipment cleaning techniques.

Overall Objective: To give Respiratory Care students exposure to health care services provided outside of the hospital.

Objectives:

1. **Equipment Set Up:** Students should observe and assist with set up / monitoring of durable medical equipment in a patient's home.
 - a. Home Oxygen delivery systems and backup systems:
 - O2 cylinders
 - Liquid O2
 - O2 concentrators (molecular sieve)
 - b. Patient Care Devices:
 - Pulse Oximetry
 - Humidity therapy
 - Apnea monitors
 - Pneumocardiograms
 - CPAP & BiPAP machines
 - Auto titrating CPAP
 - Smart Card technology
2. **Safety:** Students should observe and assist with patient teaching and the survey of a patient's home to assure:
 - Patient safety (filters, signs, electrical, equipment location)
 - Infection Control

3. **Equipment Maintenance:**

Students assist with routine/preventive maintenance of durable medical equipment.

- Cleaning process for processing home equipment.

4. **Patient Education:**

Students should observe and participate in the continuing patient education.

- Treatment plan implementation
- Exercise plan implementation

5. **Patient Billing & Insurance:**

Students become familiar with process of billing insurance/government for reimbursement.

- Criteria used to determine patient qualifications for Home Oxygen therapy.

Pulmonary Rehabilitation Rotation

Overall Objective: Provide the respiratory care student the opportunity to observe and participate in the pulmonary rehabilitation process.

Objectives:

1. Assist staff in preparation for receiving patient for the Pulmonary Rehab.
2. Perform an initial assessment of the patient prior to the rehabilitation session.
3. Identify patient target heart rate and exercise goals prior to the rehabilitation session.
4. Assist with monitoring patients during the Pulmonary Rehab.
5. Perform post session assessment.
6. Observe patient counseling sessions with the preceptor.

Hyperbaric Oxygen Rotation

Student Preparation:

Prior to this rotation, the student will review the following concepts and terms associated with the Hyperbaric Oxygen and its application.

Overall Objective: H.B.O. rotation is designed to introduce students to the treatment of diseases which requires the application of a barometric pressure above Atm. conditions.

Objectives:

1. State indications of H.B.O.
2. State hazards and contraindications for H.B.O.
3. Describe how H.B.O. can aide in treatment of:
 - A. CO poisoning
 - B. Anaerobic infections (Gas gangrene)
 - C. Gas embolism
 - D. Tissue transplants / grafts
 - E. Thermal Burns
4. Describe why transcutaneous monitoring may be required before H.B.O.
5. Obtain a list of the 4 categories or condition which may be treated by H.B.O.
6. Assist in performing patient therapy.

Module VIII

Material Covered: Emergency Care, NBRC TMC exams and Ethics

Resources:

- Mosby's Respiratory Care Equipment, 9th Edition
- Egan's Fundamentals of Respiratory Care, 11th Edition

- Dana Oakes / Classmate Respiratory Simulations

Assessments:

- Case Study / Tests / TMC Exam
- Clinical Sheets

Learning Outcomes: (Affective-Behavior)

1. Practice proper and patient specific, emergency care.
2. Apply medical ethics and law specific to the practice of respiratory care.
3. Demonstrate knowledge and skills needed to successfully pass NBRC exams

****Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

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Part III: Grading and Assessment

EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS*

Students’ performance will be assessed and the weight associated with the various measures are listed below. The following will be evaluated to obtain a grade in the clinical course requirements:

Cognitive (25%)	Quizzes, tests, case studies, and presentations, etc. Students must achieve 70% or better on the NBRC CRRT and RRT self-assessment exams.
Psychomotor (35%)	All course required <u>Skill Check Assessment</u> and <u>Laboratory Competency Practical Examination</u> must be completed. All check-offs are worth 35% of the student’s clinical grade.
Affective (40%)	Development of appropriate attitude is as important as skill and knowledge development. Affective evaluation will focus on attention on the development of professional behaviors.

“Students, who consistently are unable to meet the clinical objectives, use unsafe methods of delivering patient care, who show inadequate preparation in caring for patients, or who demonstrate unprofessional conduct in the clinical area may receive an unsatisfactory clinical evaluation. An unsatisfactory clinical evaluation constitutes failure of the course and immediate withdrawal from the program.”

Evaluation

Data Arc Records (Time, ADL, Site, Preceptor) (Affective-Behavior)	15%
Data Arc (Affective Evals) (Affective-Behavior)	25%
Case Study (Knowledge-Cognitive)	20%
Clinical check offs (Psychomotor-Skills)	35%
<u>Clinical Mid Term / Final Exam (Knowledge-Cognitive)</u>	<u>5%</u>
TOTAL	100%

****Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

LATE ASSIGNMENTS:

1. A maximum of one (1) scheduled examination may be made up at the discretion of the course instructor with proper medical documentation. Any subsequently missed examinations will receive a grade of 0.
2. Makeup examinations will be taken at a time and location designated by the instructor.
3. A 10 point overall deduction will be applied to the score for missed examinations.
4. All clinical site ID badges must be returned to the DCE at the start of the final exam. Students failing to turn in all clinical site ID badges will be counted absent, thereby excluding them from taking the final exam. Attendance and Late Assignment policies will be applied, ultimately negatively affecting the students overall final grade.
5. Homework / discussion post / classmate assignments are only accepted at the designated due date. All assignments not submitted by the designated due date will receive a (0) grade.
6. All Data Arc documentation must be submitted prior to the start of the final exam. Data Arc documentation not submitted by the start of the final exam will result in a grade of zero (0) will be assigned to that particular Data portion of the overall grade.

Data Arc

Data Arc is a database-tracking system that monitors and collects information of students' clinical performance. Clinical evaluation forms and check-offs can now be completed online and directly sent to the students' instructors for review. Each therapist has a login and password that allows him or her to enter the system. In addition, each facility has a generic login that allows a therapist to enter data even if he or she is not in the system. It is preferred that all evaluators have an individualized login/password. Below are instructions:

1. Go to www.dataarc.ws
2. Mouse over Allied Health, Click on Respiratory Care
3. Type the log in and password provided
4. You should now be on the Clinical Instructor/student page navigation page
5. In the light blue box at the top of the page, click on the desired evaluation
6. For Clinical Instructors Select "Add"
7. Complete evaluation

Skill Check Assessment:

The student is required to successfully complete each skill check assessment for the course prior to the final laboratory competency practical examination or per the instructor's schedule. The course instructor will announce the due date of the skill check assessments in the course calendar informational sheet. Failure to complete a skill check assessment will not allow the student to complete the laboratory competency practical examination, which will result in failure of the course.

Laboratory Competency Practical Examination

A minimum of 75% and all critical elements must be achieved to pass the laboratory competency practical examination. Three attempts will be given for the competency. Repeat competency will be awarded a maximum of 75%. Students will only be allowed to try the competency one time per day. Failure to pass the competency within three attempts will result in dismissal from the program.

Each student must demonstrate safety and behavior competence in designated criteria to successfully pass the Clinical Education Course. Students who do not pass a Clinical Education Course will be removed from the program.

Evaluation Process

Every respiratory care student will be issued a list of competencies at the beginning of his or her clinical instruction course (RES 249). The clinical competencies are on the Data Arc system. If the competency is listed on the pick-list, he or she is allowed to perform the activity. Clinical competencies are a three-step process:

1. Complete the clinical competency in the lab
2. Score a "satisfactory" form a qualified RCP in the clinical setting
3. Score a second "satisfactory" score from a qualified RCP in the clinical setting.

Summary Performance Evaluation

The following will utilize a pass/fail (satisfactory/unsatisfactory) grading criteria to evaluate the clinical/lab psychomotor portion of the skills check evaluation:

Satisfactory: Completion of Skills Check on the first attempt (85-100%) and receives a (P) Pass Grade in D2L.

- The Skills Check was performed accurately, or was able to correct performance without injury to the patient or decreasing the effect of therapy being given.

Unsatisfactory performance: Completion of skills check first attempt with a grade (<85%) will require remediation and receives a (F) Fail Grade in D2L:

- The grade of (F) will be entered into D2L until a subsequent successful completion has been achieved by the 3rd attempt.
- After the 3rd attempt, if the student does not pass the psychomotor evaluation with an 85% or greater, the grade of (F) will remain in D2L.
- Failure to complete a critical skill within the 3 attempt limit will result as a failure of the course.

Evaluation List

The following list of competencies will be evaluated for RES 249, additional list will be evaluated through a progression of the clinical courses of the Respiratory Care program at Horry Georgetown Technical College as

Semester	Class	Course	Emphasized Clinical Tasks	Tasks that may be performed with minimum supervision
Fall	Freshmen	RES 152	Handwashing, Chart Review, Patient Assessment, O2 Therapy, Tanks, Incentive Spirometry, Aerosol / Humidity Therapy, CPR	
	Seniors	RES	Mechanical Ventilation, Vent Graphics, NIPPV, Intubation, Home Care, PFT/Interpretation	O2 Therapy, Lung Inflation / IS, Aerosol/Humidity Therapy, Mucus Clearance (P&PD, Flutter Valve), CPR, ECG, ABG analysis, Airway care/Sxn, Mechanical Ventilation, PFT/Interpretation
Spring	Freshmen	RES 154	Medication Aerosol, Lung Inflation Therapy (Easy PAP/ IPPB), Aerosol / Humidity Therapy, Mucus Clearance (P&PD, Flutter Valve), PFT/Spirometry, ABG's, SXN, CPR, ECG	Handwashing, Chart Review, Patient Assessment, O2 Therapy, Tanks, Lung Inflation / IS, Aerosol / Humidity Therapy, CPR
	Seniors	RES	Adult Ventilator Care, Cardiac Catheterization, Nep/PEDS, Sleep Lab, Emer. Dept., CPR	O2 Therapy, Lung Inflation / IS, Aerosol/Humidity Therapy, Mucus Clearance (P&PD, Flutter Valve), CPR, ECG, ABG analysis, Airway care/Sxn, Mechanical Ventilation, PFT/Interpretation
Summer	Freshman	RES	ABG analysis, Airway care / Suctioning, Mechanical Ventilation Set Up, ACLS	O2 Therapy, Lung Inflation Therapy (Easy PAP/ IPPB), Incentive Spirometry, Aerosol/Humidity Therapy, Mucus Clearance (P&PD, Flutter Valve), CPR, ECG, ABG analysis, Airway care/Suctioning

the student masters each list and modality. This list is available on the Data Arc system. For this course RES 249, the following will be evaluated by the three criteria: observation, performed with assistance, and performed unassisted via clinical lab and score a "satisfactory" by two Respiratory Care Practitioners (RCP) in the clinical setting.

Adult Diagnostics Competencies
Arterial Blood Gases
ABG Sampling
Suction Procedures
Endotracheal Suctioning

Emphasized Clinical Tasks by Semester Note: Emphasized Clinical Tasks are those procedures the students are learning to perform and will be evaluated on during the semester. Students are expected to perform all procedures that they have been "Checked Off" on with minimum supervision.

Clinical Competency Performance Criteria

Data Arc clinical assessment sheets are available diagnostic competency and are required to evaluate students psychomotor, cognitive and effective evaluation.

Affective Evaluations

Affective evaluations are the third part of the clinical evaluation process. They represent the instructors' overall view of the student's ability to communicate, confidence and independence, initiative and cooperation, maturity, professional ethics, organization and theory application. Points for the observed level of performance are assigned. Guidelines for outstanding behavior are outlined in the Student Handbook, Policies and Procedures of the Respiratory Care program.

5= Exceptional. Ready for clinical application with minimal supervision. Always arrives on time and prepared. Always exhibits concern for the dignity and welfare for patients and team members; prevents conflict of interest; always takes measures to deal with conflict effectively. Demonstrates a superior understanding of the concepts, facts, and theories specific to the situation. Can perform the skill with confidence, without error and greatly exceeding standards. Seldom requires assistance. Plans ahead, always works efficiently and manages time wisely.

4= Above Average. Regularly arrives on time and prepared. Consistently displays concern for dignity and welfare of patients and team members; prevents conflict of interest; seeks assistance when conflict arises. Demonstrates a complete and thorough understanding of the concepts, facts, and theories specific to the situation. Can perform the skill with confidence and above the expected standards. Requires minimal assistance. Completes assigned tasks in a timely fashion, and seldom needs direction.

3= Acceptable. Rarely absent but informs appropriate personnel; is seldom late or unprepared, but notifies appropriate personnel. Generally displays concern for dignity and welfare of patients and team members; avoids conflict of interest; and recognizes conflicts as they arise. Demonstrates a general knowledge of the concepts, facts, and theories specific to the situation. Carries out the skill without significant error and meets the accepted standards most of the time. Requires occasional assistance. Completes assigned tasks, needs occasional direction.

2= Below Average. Is periodically late or unprepared. Sometimes neglectful of patients or team members dignity or welfare; occasionally fails to recognize conflict of interest; needs direction in avoiding conflict. Demonstrates an incomplete understanding of the concepts, facts, and theories specific to the situation. Makes non-critical errors when performing the skill and barely meets the expected standards. Inconsistent in completing tasks and needs help in prioritizing work. Requires frequent prompting or assistance.

1 = Unacceptable. Absent repeatedly and neglects to inform appropriate personnel; student is frequently late and unprepared. Is negligent or inconsiderate of patients or team member's dignity or welfare; or demonstrates conflict of interest; or provokes conflict. Demonstrates no understanding of the concepts, facts, and theories specific to the situation. Cannot perform the skill or is in danger of harming the patient. Needs constant assistance. Rarely completes assigned tasks, wastes time and needs constant assistance and direction.

N/A Not Applicable- Objective not applicable to this clinical setting

N/O Not Observed-Objective Not Observed to the extent that a rating is appropriate

*designated safety criteria elements that the student must receive a 4 to pass the course regardless of the average score

designated *behavioral foundational elements in clinical practice* that the student must receive a 4 to pass the course regardless of the average score

GRADING SYSTEM:

To provide information to each student concerning the calculation of grades and to assure consistency and fairness in assigning grades. The Respiratory Care Program grading policy is different than the HGTC grading policy.

Policy:

1. A grade of "C" or better must be achieved in all required respiratory care program courses in order for a student to progress through the program. A final grade of less than 75 is not passing in the Respiratory Care Program and does not meet the requirements for progression within the program. This policy is different than the Horry Georgetown Technical College Grading Policy.

GRADING SCALE:

100-90 = A

89-80 = B

79-75 = C

74-69 = D

68 - 0 = F

Each student must demonstrate safety and competence in required laboratory skill check assessments and laboratory competency practical examinations. Each course with a laboratory component includes skill check assessments that must be mastered within the course.

Skill Check Assessment:

The student is required to successfully complete each skill check assessment for the course prior to the final laboratory competency practical examination or per the instructor's schedule. The course instructor will announce the due date of the skill check assessments in the course calendar informational sheet. Failure to complete a skill check assessment will not allow the student to complete the laboratory competency practical examination, which will result in failure of the course.

Laboratory Competency Practical Examination

A minimum of 75% and all critical elements must be achieved to pass the laboratory competency practical examination. Three attempts will be given for the competency. Repeat competency will be awarded a maximum of 75%. Students will only be allowed to try the competency one time per day. Failure to pass the competency within three attempts will result in repeat of the failed lab course.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of eighty percent (80%) of his or her classes in order to be eligible to receive credit for any course. However, due to the varied nature of courses taught at the College, a more rigid attendance policy may be required by individual instructors. At a minimum, a student may be withdrawn from a course(s) after he or she has been absent in excess of ten percent (10%) of the total contact hours for a course. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

Students are responsible for all course work and class assignments; therefore, they are expected to regularly and promptly attend each meeting of class and or clinical rotations for which they are enrolled. Students should limit absences to those that are unavoidable and, with the professor's consent, should make up all work missed. Unannounced quizzes will *not* be made up and late homework will *not* be accepted. Two consecutive absences will result in a student/advisor conference. Tardiness should be avoided. **Three tardies count as one absence.**

Students are allowed to miss a maximum of 10% of the total clinical time that is scheduled for the semester. (Example: Clinic meets for 2 days per week for the semester; allowable time a student may miss a total of 2 days for the semester)

The procedure for being excused must be followed see Respiratory Clinical Policies Page 1, 2C. **Any** absence beyond the allowed time for the semester will result in an "F" grade. Under extenuating circumstances, the DCE may allow the student to miss **up to a total** of 20% of the total hours. The student is responsible for documenting in writing to the DCE's satisfaction, the extenuating circumstances. The DCE is under NO obligation to accept the student's documentation or extend the student the additional 10% in allotted absences. The student should also understand the following:

- Arriving to class/clinic late or leaving class/clinic early counts towards the allotted hours of time missed.
- Specialty Rotations: Students are responsible for attending at the assigned clinical time in specialty rotations. Failure to do so will result in a 26% reduction in the student's overall final grade.
- Once the student exceeds the hours of absences, the student will be terminated from the course. Students withdrawn from a course due to excessive absences will receive a grade of Withdraw ("W") up to the 2/3 point of the semester. Thereafter, a Withdraw ("W") or Withdrew Failing ("WF") will be assigned dependent upon his/her academic status at the time of last date attended.

Clinical attendance records are maintained in the **Data Arc system** and begin on the first day of class for both new and returning students, regardless when he/she registers during the five-day registration and add/drop period at the beginning of each term.

Lab Attendance Requirements

The lab meeting times are included in the attendance policy in the same manner as a regular lecture meeting. The attendance of the lab class will be combined with the lecture section for a total attendance.

Part V: Student Resources



The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

1. **Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
2. **On-line student success and academic support resources**.

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455. Room locations and Live Chat is available on the SSTC website.



Student Information Center: WaveNet Central (WNC)

WNC offers to all students the following **free** resources:

2. **Getting around HGTC:** General information and guidance for enrollment!
3. Use the [Online Resource Center \(ORC\)](#) for COMPASS support, technology education, and online tools.
4. **Drop-in technology support or scheduled training** in the Center or in class.
5. **In-person workshops, online tutorials and more services** are available.

Visit the WNC website: [Wavenet Central](#). Live Chat and Center locations are posted on the website. Or please call one of the following locations: WNC Conway, 349-5182; WNC Grand Strand, 477-2076; and WNC Georgetown, 520-1473.

Student Testing: (If course is offered in multiple format include this section, delete if only F2F sections are offered.)

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms

Further more tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through RPNOW, our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

Disability Services

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Jocelyn Williams, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

Statement of Equal Opportunity/Non-Discrimination Statement

Horry Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, gender, national or ethnic origin, age, religion, disability, marital status, veteran status, sexual orientation, gender identity, or pregnancy in educational programs and/or activities.

Title IX Requirements

Horry Georgetown Technical College prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking. Any student who believe he or she has experienced or witnessed discrimination including sexual harassment, domestic violence, dating violence, sexual assault or stalking is encouraged to report such incidents to one of the College's Title IX Coordinators.

*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

Inquiries regarding the non-discrimination policies:	
Student and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Associate Vice President for Student Affairs.	Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Associate Vice President for Human Resources.
Dr. Melissa Batten, AVP Student Affairs <i>Title IX Coordinator</i> Building 1100, Room 107A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5228 Melissa.Batten@hgtc.edu	Jacquelyne Snyder, AVP Human Resources <i>Section 504, Title II, and Title IX Coordinator</i> Building 200, Room 212A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5212 Jacquelyne.Snyder@hgtc.edu