

Bergen Community College
Division of Health Professions
Department of Respiratory Care
**RSP-231 Respiratory Care
Clinical Externship IV**

Semester and Year: Fall

Course and Section Number: Respiratory Care Clinical Externship IV, RSP-231-001

Meeting Times and Locations:

Instructor:

Office Location:

Phone:

Department Secretary:

Office Hours:

Email address:

Course Description

Lecture hours, laboratory hours, and credits: 0 lectures, 2 labs, 2 credits

Prerequisite: RSP-226. Co-requisites: RSP-240 and RSP-250

Course Description: This course is designed to provide the respiratory care student with the opportunity to develop advanced skills in the management of ventilator patients in adult critical care areas. Students will also receive an introduction to the neonatal / pediatric intensive care units. In addition, rotations through specialty areas are provided. Emphasis is placed on patient evaluation and education, decision-making skills, communication, and critical thinking skills.

Student Learning Objectives: As a result of meeting the requirements in this course, at a minimum proficiency of 78%, the student will:

1. Properly assemble, disassemble, clean, functionally check, describe, and apply the operation of the various mechanical ventilators in real patient situations utilizing various modes of ventilation.
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3. Properly assemble, disassemble, clean, functionally check, describe, and apply the operation of the following pressure ventilators in real patient situations.
4. Given a specific ventilator, modify or provide for the following:
 - a. FiO_2 between 0.21 and 1.0
 - b. Continuous monitoring of V_T or V_E
 - c. Variable humidification
 - d. Minimal or variable dead space
 - e. Disconnect and modify alarm system
 - f. All ventilation modes
 - g. High frequency ventilation

5. Maintain continuous and accurate flow sheets on all patients receiving respiratory care and be responsible, where indicated and prescribed, for the following measurements or calculations:
 - a. V_T , V_E
 - b. Static and dynamic compliance
 - c. Negative inspiratory force
 - d. $P(A-a)O_2$, % shunt, respiratory index
 - e. V_D/V_T ratio
 - f. PaO_2 / FiO_2
 - g. Arterial blood gases
 - h. Cuff pressures
 - i. Ventilator alarms
6. Properly interpret the significance of the above data relative to patient management (i.e., ventilator commitment, ventilator discontinuance, CPAP, and weaning parameters).
7. Practice and demonstrate competency in proper airway management and assessment (pharyngeal, endotracheal, and tracheostomy tubes), including:
 - a. Naso/Oropharyngeal suctioning
 - b. Tracheobronchial suctioning
 - c. Tracheostomy care
 - d. Cuff management
 - e. Pre-intubation preparation
 - f. Bronchoscopy assisting
 - g. Post-intubation management
 - h. Extubation management
 - i. Auscultation
8. Describe the correct monitoring parameters and evaluate patients whose support modes are being changed (i.e., to SIMV, T-tube, CPAP, PEEP, PS, etc.)
9. Properly assemble, explain the function of, functionally check and apply the following techniques in real patient situations:
 - a. SIMV
 - b. Pressure support
 - c. SIMV with pressure support
 - d. Adult non-invasive ventilation
 - e. Pressure control
 - f. PRVC
 - g. And other modes of ventilation exposed to in the clinical setting.
10. Provide for and explain alternate methods of monitoring ventilatory parameters of patients receiving SIMV, PS, CPAP, and Bi-PAP.
11. In conjunction with the nursing staff, accurately measure and record the following patient parameters:
 - a. Vital signs
 - b. Capnography
 - c. CVP / Swan Ganz
 - d. I & O
12. Given an ECG rhythm strip, correctly interpret it, and justify it to patient management.
13. Correctly prepare, perform, assess and record all pulmonary physical therapy as assigned on both spontaneously breathing and mechanically assisted patients.
14. Correctly prepare, perform, assess, and record all oxygen therapy, aerosol therapy, IPPB therapy, and/or incentive spirometry therapy according to the competency manual.
15. In conjunction with the nursing staff, properly monitor and maintain thoracic drainage units.
16. Participate in the following activities:
 - a. Pulmonary rounds
 - b. Pulmonary conference
 - c. Department report
17. Given various treatments (to include aerosol therapy, IPPB, oxygen therapy, pulmonary physical therapy, and incentive spirometry) at differing time intervals, properly organize,

- Schedule, perform, assess, record and bill the assigned therapy, within an appropriate time interval.
18. Perform a complete and comprehensive oral report of patient needs, therapeutic approach, treatment procedure, and efficiency of therapy to incoming / outgoing staff.
 19. Demonstrate and explain the proper clinical utilization of ventilators utilized for IPPB.
 20. Correctly change all ventilator circuits in the critical care areas, according to the specified procedure and policies.
 21. Assist in any cardiopulmonary resuscitation attempts and complete in writing a cardiac arrest report and procedure summary, which describes precipitating factors, procedure, personnel, therapeutic intervention, and results/prognosis.
 22. Describe and prepare the necessary equipment for sampling of arterial blood.
 23. Properly select a sample site (palpation, modified Allen test, etc.) and secure an arterial sample of sufficient quantity for analysis.
 24. Ensure proper homeostasis after sampling of arterial blood.
 25. Properly handle the sample after the puncture, and describe the rationale for post-sampling procedures (ice, puncture proof container, pressure to puncture site, etc.)
 26. Perform correctly the analysis of a sample of arterial blood and accurately ascertain the following parameters.
 - a. PaCO_2
 - b. HCO_3
 - c. pH
 - d. BE
 - e. PaO_2
 - f. SaO_2
 27. Define the acid / base status.
 28. Relate the acid / base status and level of oxygenation to patient management.
 29. Describe the concept of buffer base and base excess relative to the metabolic component of acid / base physiology.
 30. Describe and locate the basic structures of a blood gas analyzer.
 31. Properly interpret any and all arterial / capillary blood gas results at each clinical session. This will include an interpretation of acid / base status and oxygenation status.
 32. Properly perform calibration, slope and controls of the blood gas machine at various clinical sites.
 33. Describe the indications, equipment, procedure, hazards, and complications of indwelling arterial lines. Describe further how to obtain an arterial sample from the stopcock system.
 34. Assemble and demonstrate proficiency in the utilization of a functional CPAP & Bi-PAP device capable of delivering a variable, monitored, and accurate FIO_2 via:
 - a. Mask CPAP / BiPAP
 - b. Nasal prongs
 35. Describe (from observation) the indications, technique, hazards, and complications of umbilical artery catheterization and alternate blood gas sampling techniques in the neonate / pediatric patient.
 36. Describe specific purposes of pulmonary function testing.
 37. Differentiate lung volume / capacity measuring tests, air flow-volume measuring tests, and supplementary pulmonary function tests (non-standard spirometry).
 38. Describe general maneuvers/means of measuring lung volumes / capacities, air flow-volume, and supplementary pulmonary function tests.
 39. Describe a systematic means of interpreting pulmonary function test results.
 40. Explain the usefulness of bronchodilator therapy during pulmonary function testing and determine the usefulness of bronchodilator therapy by assessing pulmonary function test results.
 41. Assist with the administration of any available pulmonary function tests (including bronchodilator therapy), when permitted by the pulmonary function lab technician.
 42. Observe and assist bronchoscopy studies and stress testing.
 43. Satisfactorily perform the objectives from all previous clinical courses as required.
 44. Participation in clinical rounds with the medical director.

- a. Make recommendations to the patients care plan.
- b. Modify the patient's care plan.
- c. Perform assessments as directed by the medical director.

Course Content

This course will be presented and delivered at specific hospitals sites. Each site can offer different exposures to the equipment used in respiratory care.

Special Features of the Course

MoodleRooms used to enhance the interaction with the student.

Anecdotal Notes:

Each student is required to complete, and review with his or her instructor, an anecdotal note form for each day in clinical into the DataArc system. Each clinical instructor must validate these notes in the DataArc system.

All students are responsible for making certain that their competencies are complete, and must hand in all required materials.

Course Texts and/or Other Study Materials

- Kacmarek, R. Egan's Fundamentals of Respiratory Care, 11th ed. Elsevier, 2017 ISBN: 978-0-323-34136-3
- Computer software: competency system by: DataArc

Reading assignments from Egan's:

- Acid-Base Balance
- Electrocardiogram and Laboratory Assessment
- Analysis and Monitoring of Gas Exchange
- Pulmonary Function Testing
- A Synopsis of Thoracic Imaging: Chest x-ray, CT, and MRI
- Airway Management
- Emergency Life Support
- Respiratory Failure and the Need for Ventilatory Support
- Ventilator Modes and Functions
- Physics and Physiology of Ventilatory Support
- Initiating and Adjusting Ventilatory Support
- Noninvasive Positive Pressure Ventilation
- Monitoring and Management of the Patient in the ICU
- Discontinuing Ventilatory Support

Research, Writing, and Examination Requirement(s)

Competency Evaluations:

Prior to performing a competency in the clinical setting, the student must have successfully completed the competency in the laboratory. The clinical instructor will then evaluate individual competencies performed by the student in the hospital and enter them into the DataArc system. The competency evaluation for each task must be attained at a satisfactory level. For this portion of the final course grade, the student will be graded on completing the assigned competencies. A student who has successfully achieved a competency will be expected to repeat the competency, when necessary, at an acceptable level during subsequent clinical experiences.

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Oral Presentations:

Students may be expected to present an oral case study to the medical director, program faculty, and any clinical staff members. These will be completed during a clinical meeting day.

Means of Assessment

Students will be assessed in the following methods: via clinical instructor evaluations entered via the DataArc system, procedural competency evaluations via DataArc system, oral exam, and a final written exam in multiple choice format via the computer in Moodle rooms.

Grading Policy

Grade Computation:

The clinical instructor will evaluate individual competencies performed by the student. The competency evaluation for each procedure must be attained at a satisfactory level within a prescribed time period.

Evaluation of Clinical Performance – Each student will have an evaluation of overall clinical performance at the end of each clinical rotation. The average of these evaluations will be the basis for part of the final course grade.

Grading Format:

Instructor evaluations	60%
Competency evaluations, assignments	10%
Final exam – written	15%
Final exam – oral	15%

Grade Determination:

A	Student must demonstrate superior work; excel to contribute positively to class discussions and demonstrated skills.	93 - 100
B+	Student must merit excellent work; contribute to class discussions and demonstrated skills	88 - 92.9
B	Student must show above average work and an above average standard of achievement	83 - 87.9
C+	Student must meet and attain a standard of achievement with reasonable theoretical knowledge and demonstrated skills	78 - 82.9
F	Student fails to meet acceptable standards and skills	<78
N	Incomplete – Student has not completed course requirements	

Late work or Assignments:

Late work and make-up examinations will be penalized with a grade being no greater than 75%. Late work will be submitted as soon as possible; makeup exams will be completed at the end of the semester.

Attendance Policy

BCC Attendance Policy:

All students are expected to attend punctually every scheduled meeting of each course in which they are registered. Attendance and lateness policies and sanctions are to be determined by the instructor for each section of each course. These will be established in writing on the individual course outline. Attendance will be kept by the instructor for administrative and counseling purposes.

Course Attendance Policy: For every absence in any given semester, 5pts will be taken off the student's final grade. See the department policy and procedure manual for the course attendance and lateness policy.

Departmental Policy Statements

1. Acceptable quality of work and mature behavior are expected from every student at all times. Students are regarded as professionals and are expected to conduct themselves accordingly.
2. High standards of professional performance demand that students maintain good academic progress throughout their course of study in the program.

3. Students demonstrating chronic tardiness or absenteeism will be placed on academic warning or probation, and may be subjected to termination from the program.
4. Absence from a class during a scheduled exam will be subject to the policy of the instructor for that specific course. If the student is going to miss a scheduled exam it is expected that the student will contact the instructor ahead of time by e-mail or phone to the department office.
5. All students are required to adhere to the policies and procedures of the school as outlined in the college catalogue.
6. Additional department policies are located in the Student Policies and Procedures Manual.

Student and Faculty Support Services

1. The program faculty maintain office hours for counseling and are available to provide tutorial assistance to students.
2. Students must make appointments in advance to meet with the respective instructors.
3. Students may also obtain assistance from the College Tutoring Center. Appointments must be made in advance through this center.
4. The College has a personal counseling center for those students who may need personal assistance. Appointments are made directly through this center.
5. Any problems, concerns, or questions should be directed to the course instructor or the student's advisor.
6. Statement on Civility
 - a. Refer to the Standards of Conduct Subsection found in the Student Judicial Affairs Policies & Procedures Section found in the Student Handbook.
7. Academic Integrity
 - a. Refer to the Academic Integrity Subsection; found in the Academic Regulations, Academic Policies Section found in the Academic Policies & Regulations Area of the College Catalog
8. Other possible College, Divisional, and/or Departmental Policy Statements to be referenced
 - a. ADA statement.
 - i. Students with documented disabilities who require accommodations by the American with Disabilities Act (ADA) can request support services from the Office of Specialized Service of Bergen Community College located in room L-115 of the Pitkin Education Center.
<http://www.bergen.edu/Pages1/Pages/5175.aspx>
 - b. Sexual Harassment statement.
 - c. Statement on acceptable use of BCC technology.
 - d. Statement on the purpose and value of faculty office hours.
9. Student and Faculty Support Services
 - a. List support services, e.g., the Writing Center, the Math Lab, the Tutorial Center, Online Writing Lab (OWL), Office of Specialized Services, etc.
10. BCC Library
 - a. The Sidney Silverman Library is committed to providing a quiet, welcoming, respectful atmosphere conducive to study and research in an environment that is comfortable, clean, and safe. The use of the library will be beneficial in providing resources on researching topic information, citation styles, finding current articles among many other media services available.