RESP 122-CRITICAL CARE MANAGEMENT 4 CREDITS

SYLLABUS

CATALOG DESCRIPTION

This course presents emergency airway management techniques and the concepts, applications, and monitoring of patients on mechanical ventilation. Included are non-invasive and invasive monitoring techniques, transcutaneous, capnography, and respiratory mechanics.

Prerequisites: RESP 116, 120, 126, 128

Co-Requisites: RESP 124, 220, 226, 228

Semester Offered: Summer Semester

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in…

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

GENERAL LEARNING OBJECTIVES

Upon successful completion of the course, the student will be able to:

1. List and describe the 2 basic classifications of airway obstructions.
2. Describe the indications for artificial airways.
3. Discuss oral and naso-tracheal intubation and extubation.
4. Discuss the indications for tracheostomy and demonstrate procedure for trach care.
5. Explain and demonstrate the suctioning technique.
6. Describe the classification of mechanical ventilators based on trigger, control, cycle, and limit.
7. Identify and discuss the different modes of ventilation.

8. Interpret waveforms.
9. Discuss the indications, hazards and complications of mechanical ventilation.
10. Given a simulated doctor's order, demonstrate how to initiate, maintain and monitor patient-mechanical ventilation system.
11. Discuss the criteria and methods of weaning.
12. Explain the rational for performing the following specialized monitoring procedures

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SPECIFIC LEARNING OBJECTIVES

Upon successful completion of the course, the student will be able to:

1. List and describe the 2 basic classifications of airway obstructions:
   A. Identify the anatomical structures in the upper airway.
   B. Identify the goals of airway management.
   C. Discuss the kinds of airway obstruction.

2. Describe the indications for artificial airways:
   A. Explain the mechanism of airway maintenance with the following devices, their indications, advantages, disadvantages, and hazards.
      a. nasopharyngeal airway
      b. oropharyngeal airway
   B. Review other emergency airways and their clinical use to include:
      a. ETC
      b. LMA
      c. PTLA
      d. combi-tube
      e. cricothyrotomy
      f. mouth to mask barrier devices
   C. Compare and contrast the characteristics of the following types of suction catheters:
      a. whistle tip
      b. coude tip
      c. closed suction systems
   D. Review the AARC clinical practice guidelines for management of airway emergencies.
   E. Discuss the rationale for application in intermittent versus continuous suction.
   F. Discuss the complications of suctioning and relate how to minimize these effects.

3. Discuss oral and naso-tracheal intubation and extubation:
   A. Identify the oral and nasal routes of intubation and their advantages and disadvantages.
   B. Describe two types of laryngoscopes and blades used for intubation, including: conventional and fiberoptic laryngoscopes; Macintosh and Miller blades.
   C. Discuss the construction and design of an endotracheal tube. Discuss the significance of the following components in relation to their function:
      a. Murphy eye
      b. cuff
      c. pilot tube
      d. markings
      e. pilot balloon
   D. List the indications for intubation.
   E. Describe complications of intubation.
   F. Give the criteria for extubation.

G. Demonstrate the process of intubation and extubation.

4. Discuss the indications for tracheostomy and demonstrate procedure for trach care:
   A. List the indications for a tracheostomy.
   B. Explain the purpose of tracheostomy and stoma care, and the associated hazards and complications.
   C. Identify types of tracheostomy cannulas and describe their clinical applications.
   D. Identify specialized tracheostomy tubes and appliances and describe their clinical applications:
      a. Pitt speaking tube
      b. Trach button
      c. Kistner button
      d. Passy Muir valve
      e. Olympic Trach talk
   E. Discuss cuff pressures and how they should be maintained.
   F. Demonstrate the proper technique for stoma and tracheostomy care.

5. Explain and demonstrate the suctioning technique:
   A. Review the AARC clinical guidelines for nasotracheal suctioning, and suctioning the mechanically ventilated adult with an artificial airway.
   B. List the complications of suctioning.
   C. Demonstrate suctioning of the artificial airway.

6. Describe the classification of mechanical ventilators based on trigger, control, cycle, and limit:
   A. Describe types of triggering mechanisms and how they are set.
   B. Describe limiting and cycling mechanisms, how they are set, and how they differ.
   C. Compare the four types of breath types and their waveform to include:
      a. pressure controlled breath
      b. volume controlled breath
      c. flow controlled breath
      d. time controlled breath

7. Identify and discuss the different modes of ventilation:
   A. Define continuous mechanical ventilation.
   B. Differentiate between invasive and noninvasive ventilation.
   C. State the advantages and disadvantages of the following modes:
      a. Control mode
      b. Assist mode
      c. Assist/control mode
      d. Continuous Positive Airway Pressure (CPAP)
      e. Pressure support
      f. Synchronized Intermittent Mandatory Ventilation (SIMV)
      g. Minimum mandatory ventilation (MMV)
      h. Airway Pressure Release Ventilation (APRV)
      i. Bi-level Ventilation
      j. Other special modes
   D. Describe PEEP and CPAP, and their applications.
   E. Discuss the physiological effects of PEEP and CPAP.

8. Interpret waveforms:
   A. Discuss the advantages and disadvantages of the different waveforms in volume control and interpret the peak, plateau, and mean airway pressures in each type.

9. Discuss the indications, hazards and complications of mechanical ventilation:
   A. Discuss the indications for mechanical ventilation.
   B. List the criteria for implementation of mechanical ventilation to include:
      a. Ventilatory mechanics
      b. Respiratory frequency
      c. Minute volume
      d. Vital capacity
      e. Maximum inspiratory force
      f. Peak expiratory flow
      g. Spontaneous tidal volume
   C. List the hazards and complications of mechanical ventilation.

10. Given a simulated doctor's order, demonstrate how to initiate, maintain and monitor patient-mechanical ventilation system:
   A. Demonstrate ventilator set-up, alarm setting, maintenance and trouble-shooting.
   B. Discuss patient-ventilator monitoring.
   C. Apply clinical scenarios to mechanical ventilator situations.
   D. Identify common patient-ventilator problems and how to correct them.
   E. Make changes as indicated.
   F. Demonstrate how to change a ventilator circuit.
   G. Review the AARC clinical practice guidelines for patient-ventilator system checks, ventilator circuit changes, and noninvasive mechanical ventilation.

11. Discuss the criteria and methods of weaning:
   A. Identify the criteria used to determine a patient's ability to be weaned or discontinued from mechanical ventilation to include: mechanics of ventilation, oxygenation, and ventilation parameters.
   B. Discuss the physiologic effects of weaning.
   C. Discuss the methods and modes of ventilation used in the weaning process.
   D. Discuss complications and hazards of weaning.

12. Explain the rational for performing the following specialized monitoring procedures:
   A. Shunt studies
   B. Vd/Vt ratios
   C. Static and dynamic compliance
   D. Raw
   E. Paw

ASSESSMENT TECHNIQUES

1. Quizzes
2. Homework/Project
3. Skills Competencies
4. Mid-term Exam
5. Final Exam

ACCOMODATIONS STATEMENT

Students who need accommodations (i.e., notetaker, interpreter, special seating, etc.) need to provide accommodation notices to the instructor. Students can contact the Students with Disabilities on Campus (SDOC) Coordinator in the Counseling Center, located in the Administration Building, to make arrangements and provide documentation in accordance with the Americans with Disabilities Act of 1990.

ACADEMIC HONESTY RULES

San Juan College expects all students to adhere to the Academic Honesty Rules as posted on our website, http://www.sanjuancollege.edu/academichonesty. All Health Sciences Programs have a responsibility to ensure enrolled students and graduates are safe, ethical and competent practitioners. To ensure professionalism, students and faculty must uphold and abide by college and program accreditation specific policies.

SYLLABUS DEVELOPED AND/OR REVIEWED BY:

Dean of Health Sciences: _____ Date: _____

Director of Respiratory Therapy: _____ Date: _____

Clinical Coordinator of RT: _____ Date: _____