GROSSMONT COLLEGE

Official Course Outline

RESPIRATORY THERAPY 208 – INVASIVE AND NONINVASIVE CARDIOPULMONARY MONITORING

1. Course Number Course Title Semester Units Semester Hours

RESP 208 Invasive and Noninvasive 4.0 3 hours lecture: 48-54 hours

Cardiopulmonary Monitoring 3 hours lab: 48-54 hours

96-108 outside-of-class hours

for lecture

192-216 total hours

2. Prerequisites

A “C” grade or higher in Respiratory Therapy 116 and 118 and 122 and 150

Corequisite

Respiratory Therapy 201 and 222

Recommended Preparation

None.

3. Catalog Description

This course is designed to provide theory and hands-on practice in various means of monitoring the patient in the acute care setting. An introductory level of advanced modes of ventilation, principles of weaning from mechanical ventilation as well as monitoring the cardiovascular system with capnography, electrocardiography and hemodynamic monitoring in the critical care setting will be presented.

4. Course Objectives

The student will:

a. Determine the settings needed to accomplish adequate minute volume and oxygenation in advanced modes of mechanical ventilation

b. Review the principles of pressure and flow monitoring to include principles of operation and factors, which influence accuracy of the measurement.

c. Accurately describe the events noted in graphic monitoring of flow pressure and volume waveforms of ventilation.

d. Interpret the EKG pattern from a given tracing and the clinical implications/treatment of each rhythm.

e. Appropriately, perform defibrillation and cardioversion in a lab model.

f. Review the principles of invasive monitoring of the intracardiac pressure and patterns associated with hemodynamic compromise.

g. Calculate the values normally derived from the hemodynamic waveform monitored from a pulmonary artery catheter.

h. Calculate the oxygen delivery and uptake as determined by blood gas data from the systemic system and the pulmonary artery systems.

i. Discuss the causes of various normal and abnormal hemodynamic profiles.

j. Accurately assess a capnogram.

k. Demonstrate the proper procedure for arterial punctureand arterial line draw.

5. Instructional Facilities

a. Standard classroom

b.Standard Respiratory Therapy skills lab

c. Computer laboratory

d. High fidelity simulation laboratory

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6. Special Materials Required of Student

1. Appropriate clinical attire as specified in the Student Handbook
2. Watch with second hand
3. Stethoscope
4. Small scissors
5. Calculator
6. Computer and printer access
7. DataArc license agreement [www.dataarc.ws](http://www.dataarc.ws)
8. Grossmont College Respiratory Therapy student name tag
9. Grossmont College badge buddy

7. Course Content

a. EKG interpretation and dysrhythmia identification

b. Hemodynamic monitoring for the cardiopulmonary assessment as it applies to both the noncritical and critical care environment

c. Advanced modes of mechanical ventilation

d. Capnography

e. Arterial puncture and arterial line draw

f. Interpretation and assessment of advanced diagnostic procedures in clinical presentations such as bronchoscopy and chest drainage systems

8. Method of Instruction

a. Lecture

b. Clinical simulation and lab exercises

c. Critical thinking activities such as concept mapping and graphic organizers

d. Demonstrations

e. Class and group discussion.

f. Role playing

g. Analysis of case studies

h. Student presentations

i. Multimedia resources such as virtual simulation programs and video presentations

9. Methods of Evaluating Student Performance

a. Quizzes

b. Written examinations including a comprehensive final examination

c. Evidence based research assignments on topics such as cardiopulmonary procedures and clinical best practices

d. Verbal questioning

e. Written assignments such as short answer questions, laboratory reports, and interpretation of lab data, and peer review

f. Oral and visual presentations

g. Interdisciplinary activities such as code blue day or hospital day

10. Outside Class Assignments

1. Written assignments based on experiments and laboratory experiences
2. Reading assignments such as textbook and journal articles
3. Written assignments such as journal entries, discussion boards, student assessment questions, peer tutoring
4. Laboratory reports based on experiments and laboratory experiences

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11. Texts

a. Required Text(s):

(1) Kacmarek, Robert. *Egan’s Fundamentals of Respiratory Care*. St. Louis, MO: Elsevier, 11th ed. 2016.

(2) Wesley, Keith. Huszar’s *Basic Dysrhythmias and Acute Coronary Syndromes*. St. Louis, MO: Elsevier, 2011

(3) Pilbeam, Susan. *Mechanical Ventilation*. St. Louis, MO: Elsevier, 6th ed, 2015

b. Supplementary texts and workbooks:

Department of Respiratory Therapy.  *Grossmont College Respiratory Therapy Student Handbook*.  El Cajon, CA: Grossmont College 2018/2019

Addendum: Student Learning Outcomes

Upon completion of this course, our students will be able to do the following:

a. Accurately apply advanced modes of mechanical ventilation specifically to a critically ill patient’s condition.

b. Apply, manipulate, and modify various invasive and noninvasive monitoring techniques appropriate to the patient’s condition or disease.

Date approved by the Governing Board: May 21, 2019