



Lansing School of Nursing & Health Sciences

CPS 440 Cardiopulmonary Monitoring

Summer 2007
Monday 1:00-3:30 PM
Tuesday 1:30-3:30 PM
Miles Hall 120
 rev 6-2007

Course Description

This course includes a detailed treatment of pressure, volume, and flow scalars in mechanically ventilated patients; work of breathing and lung mechanics measurements; and end-tidal carbon dioxide monitoring. Other topics considered are electrocardiography and hemodynamic monitoring.

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Course Objectives

1. Upon completing this course, the student will demonstrate a comprehensive, working understanding of cardiopulmonary monitoring in the critical care setting. And,
2. Will apply this technology or information derived from it effectively in the clinical setting.

		Where <i>bold italicized text</i> appears in the Assignment column these are available under Course Documents
June 4	Introduction to instrument measurement Scalar graphics during mechanical ventilation	Measurement Scalars during mechanical ventilation slides
June 5	Scalar graphics during mechanical ventilation Pressure-Volume graphics during mechanical ventilation	Pressure-volume loops in mechanical ventilation MacIntyre & Branson, Ch 6
June 11	Pressure-Volume Graphics continued Bedside assessment of pulmonary mechanics: Instruments, techniques and application	Bedside assessment mechanics Yang & Walker Tobin and Jubran

June 12	Work of breathing monitoring Noninvasive gas monitoring	Read "work of breathing" section in Yang and Walker article Hess & Kacmarek, Ch 24 Kline et al. Annals of Emergency Medicine 1998; 32:289-296. Noninvasive gas monitoring
June 18	Examination 1 (33%) Review of cardiac anatomy and introduction to electrocardiography	Ehrat, pp. 1-12 ECG 1
June 19	The conduction system of the heart Sinus and atrial arrhythmias	Ehrat, pp. 15-42 Ehrat, pp. 45-86 ECG 2
June 25	Junctional or nodal arrhythmias Ventricular arrhythmias	ECG 2 , Ehrat, pp. 90-105 ECG 3 , Ehrat, pp. 110-138
June 26	Conduction disturbances and heart blocks Identification of ischemia, injury, and infarct	Ehrat, pp. 142-174 Ehrat, pp. 277-318
July 2	Examination 2 (33%) EKG monitoring laboratory	
July 3	Fundamentals of hemodynamic monitoring	Pressure and intracardiac pressure monitoring Ehrat, pp. 333-363
July 9	Hemodynamic monitoring continued Cardiac Output	Left ventricular preload Cardiac output
July 10	Right and left heart afterload Diagnosis and treatment of acute coronary syndromes	Right and left heart afterload calculations Cardiovascular drugs Ehrat, pp. 321-330
July 16	Specific monitoring considerations for patients with cardiac diseases	Monitoring the patient with cardiac disease
July 17	Multiple system organ failure	Monitoring the patient with multiple system organ failure
July 23	Monitoring the patient in shock	Monitoring the patient in shock
July 24	Shock continued	
July 30	Review Day	

July 31-Aug 4	Examination 3 (33%)

Grading and Course Policies

Complete all readings and assignments listed in the Course Schedule before the class meets. Consult the Course Schedule for examination dates & weighting toward the final grade. There are no make-up examinations in this course.

The student must earn a C grade or better in this course to continue in the Cardiopulmonary Science Program. The basis for final grades is the scale shown on the right.

A+ =	99	100
A =	90	98
A- =	88	89
B+ =	85	87
B =	80	84
B- =	78	79
C+ =	75	77
C =	70	74
D =	65	69
F =	<	64

Academic Honesty

I strongly endorse and will follow the academic honesty policy published in the Bellarmine *Catalog 2005-2007* (pp. 55-56) and in the *2005-2006 Student Handbook* (pp. 16-19).

Students must be fully aware of what constitutes academic dishonesty; claims of ignorance cannot be used to justify or rationalize dishonest acts. Academic dishonesty can take a number of forms, including but not limited to cheating, plagiarism, fabrication, aiding and abetting, multiple submissions, obtaining unfair advantage, and unauthorized access to academic or administrative systems or information. Definitions of each of these forms of academic dishonesty are provided in the academic honesty section of the *2005-2006 Student Handbook*. All detected instances of academic dishonesty will be reported to the Provost, and sanctions will be imposed as dictated by the policy. Penalties range from failing an assignment or test to dismissal from the University, depending, in part, on the student's previous record of academic dishonesty

Student Responsibilities

Disability Services: Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Disability Services Coordinator (Room 225, Horrigan Hall or 452-8150). Please do not request accommodations directly from the professor.

Required Texts

Ehrt KS. *The Art of EKG Interpretation*. Dubuque, IA: Kendall/Hunt Publishing Company, 2005, 6th edition.