



North Central State College
MASTER SYLLABUS
2019-2020

- A. Academic Division: Health Sciences
- B. Discipline: Respiratory Care
- C. Course Number and Title: RESP1250 Cardiopulmonary Anatomy & Physiology
- D. Course Coordinator: Sharon Conley, BSRT, RRT, RCP, CHT
Assistant Dean Melinda Roepke, MSN, RN

Instructor Information:

- Name: [Click here to enter text.](#)
- Office Location: [Click here to enter text.](#)
- Office Hours: [Click here to enter text.](#)
- Phone Number: [Click here to enter text.](#)
- E-Mail Address [Click here to enter text.](#)

- E. Credit Hours: 4
- F. Prerequisites: BIOL1730, RESP1110, RESP1130, RESP1190
Co-requisite(s): RESP1220, RESP1270
- G. Syllabus Effective Date: Fall 2019
- H. Textbook(s) Title:

Cardiopulmonary Anatomy & Physiology

- Author: Terry Des Jardins
- Copyright Year: 2012
- Edition: 6th
- ISBN #: 978-0840022585

Egan's Fundamentals of Respiratory Care

- Authors: Kacmarek, Stoller, and Heuer
- Copyright Year: 2016
- Edition: 11th
- ISBN #: 978-032334136-3

- I. Workbook(s) and/or Lab Manual: None
- J. Course Description: This course is a study of the physic principles as they apply to cardio-pulmonary physiology, anatomy of the lungs and heart, the mechanics of ventilation and pulmonary circulation, airway resistance, hemodynamics, lung compliance, and the non-uniform distribution of ventilation and perfusion. Gas laws and other mathematical equations will be studied and applied to the cardiopulmonary system. Oxygen transport and carbon dioxide transport are also covered in detail.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Apply basic laws of physics dealing with phases of matter, work, energy, gas laws, temperature, the atmosphere and pressure, electricity and magnetism	Quiz week 4, Midterm Exam week 8
2. Locate the anatomical structures of the cardio-respiratory system and describe their physiologic function	Quiz week 2, Midterm Exam week 8
3. Apply the laws of physics and how they relate to the anatomy and physiology of the respiratory system with emphasis on the mechanics of ventilation and it's relationships with airway resistance and compliance	Quiz week 4, Midterm Exam week 8
4. Apply the laws of physics as they relate to gas exchange and diffusion in the respiratory system with emphasis on the diffusion of oxygen and carbon dioxide	Quiz week 5, Midterm Exam week 8
5. Identify lung volumes and capacities and explain how they relate to one another	Quiz week 4, Midterm Exam week 8
6. Describe cardiopulmonary circulation including normal blood flow and distribution through the circulatory system and understand the variables that will affect the flow and distribution of blood	Quiz week 6, Midterm Exam week 8
7. Diagram normal hemodynamic pressures of the circulatory system and explain their relationship to pathology	Quiz week 14, Final Exam week 16
8. Explain the distribution of ventilation and perfusion with the relationship to normal lung anatomy and in certain pathologies	Quiz week 10, Final Exam week 16
9. Explain solutions, body fluids, and electrolytes as they apply to body fluid homeostasis : Explain the regulation and control of the following electrolytes: a. sodium b. chloride c. potassium d. bicarbonate	Midterm exam week 8, Final Exam week 16
10. Describe fetal lung development and circulation development and circulation	Quiz week 11, Final Exam week 16
11. Explain normal chemical electrophysiology of the heart and explain the five phases of the cardiac cell action potential. Interpret basic ECG rhythms	EKG Homework assignment, Quiz week 12 & 13, Final Exam week 16
12. Explain neuro regulation of ventilation focusing on the respiratory centers in the brain and peripheral chemoreceptors	Quiz week 10, Final Exam week 16

M. Topical Timeline (Subject to Change):

- Week 1 – Anatomy and Physiology of the Respiratory System
- Week 2 – Ventilation
- Week 3 – Pulmonary Function Testing and Spirometry
- Week 4 – Pulmonary Gas Diffusion
- Week 5 – Circulatory System
- Week 6 – Oxygen and Carbon Dioxide Transport
- Week 7 – Acid Base Balance
- Week 8 – Midterm
- Week 9 – Ventilation/Perfusion, Control of Ventilation
- Week 10 – Fetal Development
- Week 11 – Electrophysiology of the Heart and EKG's
- Week 12 – EKG Interpretation
- Week 13 – Hemodynamics and Monitoring
- Week 14 – Kidney function and Respiratory Affects

N. Course Assignments:

1. Quizzes
2. Exams
3. EKG homework assignment
4. Group Discussion

O. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93-100	A	4.00	Superior
90-92	A-	3.67	Superior
87-89	B+	3.33	Above Average
83-86	B	3.00	Above Average
80-82	B-	2.67	Above Average
77-79	C+	2.33	Average
73-76	C	2.00	Average
70-72	C-	1.67	Below Average
67-69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

P. Grading and Testing Guidelines:

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Q. Examination Policy:

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R. Class Attendance and Homework Make-Up Policy:

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S. Classroom Expectations:

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T. College Procedures/Policies:

Important information regarding College Procedures and Policies can be found on the [syllabus supplement](#) located at <https://sharept.ncstatecollege.edu/committees/1/curriculum/SiteAssets/SitePages/Home/SYLLABUS%20SUPPLEMENT.pdf>

The information can also be found Choose an item.