



## Advanced Cardiopulmonary Anatomy and Physiology

RES 207.01

Winter 2019

**Number of Credits:** 3

**Office Phone:** (517) 796-8684

**Days Class Meets:** Monday

**Cell Phone:** (616) 446-3856

**Meeting Times:** 9:30am-12:30 pm

**Contact Email:** flintanm@jccmi.edu

**Location:** HLC 201

**Office Hours: Mon.:** 4 to 6 pm;

**Instructor:** Ann Flint, EdD, RRT

**Tues.:** 11am to 5pm

**additional by appt**

**Office:** JW 245

**Online:** JetNet course

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### Course Description

This course advances the student's knowledge of cardiopulmonary physiology. The cardiac sections cover gross and histologic cardiovascular anatomy, neural/endocrinologic control of cardiac function, hemodynamics, microcirculatory disorders, and a review of common cardiac arrhythmias. The pulmonary section covers bronchopulmonary anatomy, gas diffusion, blood flow, ventilation/perfusion relationships, gas transport, mechanics and control of ventilation, and lung responses to changing environments and conditions.

### Prerequisite(s)

RES 120 Respiratory Care Techniques III

RES 125 Clinical Practice II

RES 126 Cardiopulmonary Pathophysiology II

### Course Goals

The course goals and objectives incorporate specific General Education Outcomes (GEOs) and Essential Competencies (ECs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges, universities, and reflect input from the professional communities we serve. GEOs and ECs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs. The course objectives addressed in this class include the following:

- **Cognitive (EC 1):** Each student will be expected to **State normal values for common clinical hemodynamic parameters and identify common cardiovascular disorders using assessment of hemodynamic data.**

## Course Objectives

Major Units:

1. Cardiovascular Anatomy and Physiology
2. Cardiac Conduction and Basic ECG Interpretation
3. Advanced ECG Interpretation
4. Clinical Cardiac Devices, MI, and Cardiovascular Pharmacology
5. Hemodynamic Monitoring
6. Cardiac Output, Thermodilution and IABP

**Detailed objectives will be distributed during the course to align with these general objectives.**

## Textbooks/Reference Materials

**Required Texts:**

1. Clinical Electrocardiography, 9<sup>th</sup> edition, Goldberger, Elsevier, 2018, ISBN 978-0-3234-0169-2. (**Goldberger**)
2. Egan's Fundamentals of Resp. Care, 11<sup>th</sup> ed., Kacmarek et. al., Elsevier, 2017, ISBN 978-0-3233-4136-3. (**Egan**)
3. Respiratory Care: Patient Assessment and Care Plan Development, 1<sup>st</sup> ed., Shelledey and Peters, Jones and Bartlett, 2016, ISBN 978-1-4496-7244-7. (**Shelledey**)
4. Clinical Manifestations and Assessment of Respiratory Disease, 7<sup>th</sup> ed., Des Jardins, Elsevier, 2015, ISBN 978-0-3232-4479-4. (**Des Jardins**).
5. Lecture syllabus, unit outline, class handouts and supplements, Calculator, Straight-edge, minimum of 15 cm long, marked in millimeters and centimeters.

**Other/Optional Reference Sources (used by program faculty)**

1. Pilbeam's Mechanical Ventilation, 6<sup>th</sup> ed., Cairo., Elsevier, 2016, ISBN 978-0-3233-2009-2. (**Pilbeam**).
2. The Essentials of Respiratory Therapy, 4th ed., Kacmarek, et. al., Mosby, Inc., 2005. (**Kacmarek**).
3. Clinical Blood Gases, 2<sup>nd</sup> ed., Malley, Elsevier, 2005, ISBN 978-0-7216-8422-2. (**Malley**).

NOTE: (**Bold Name**) represents how this text will be referred to when cited in unit outlines.

**Textbook Zero:** All texts are available in digital format from the book store / many online sources.

## Grading Procedure

Course points are derived from unit exams, quizzes and assignments, and a comprehensive final exam. Most testable material for unit and final exams is listed in unit objectives, but can also be based on relevant review questions from the previous term as well as other classes in this term, and may include additional material as covered in class outlines and lecture. Additional quizzes, assignments, case studies or exams may be assigned in addition to those scheduled.

The system for evaluation will consist of:

- Exams: 70%
- Quizzes/Assignments: 10%
- Final: 20%

**A no show/no call for any scheduled or announced exam/quiz may result in a test grade of zero.** Notification of a desire to schedule a make-up test is to be received prior to the time of the original exam in order to be routinely eligible for a makeup exam. **If taken the same day as decided by the instructor, there is no penalty, as long as there has been prior notice given.** This must be arranged with the instructor in advance. I may be notified directly by phone or via voice-mail message at (616) 446-3856. **By**

**course policy, all first make-up exams lose 8 points from the final grade, a subsequent make-up exam loses 16 points, and a third requested make-up loses 24 points.**

**Cell phones** are to be set so as not to disrupt normal classroom communications; i.e., no cell phone ringing should be detectable to faculty or students. **For each incidence of detectable cell phone activation, 5 points will be deducted from the student's final total points earned.** You may excuse yourself if an urgent call is expected or you feel that it needs to be taken immediately, but your phone should be set on vibrate or with the ringer lowered in such an extreme case. Please do not abuse this privilege.

During an exam, only pencils, exam/Scantron, and program provided simple calculator are allowed. All cell phones, smart watches, personal graphing calculators and other electronic devices are not allowed. These may be placed in a book bag, purse or other suitable container and stored at the front of the room for the duration of the exam.

Students will be expected to complete an evaluation of the course on-line in JetNet at the conclusion of the semester.

### **Grading Scale for All Respiratory Care Courses**

To pass RES 207 the final course average score must be  $\geq 76\%$ .

<b>GPA</b>	<b>GRADE RANGE</b>
4.0	93-100%
3.5	89-92%
3.0	84-88%
2.5	80-83%
2.0	76-79%
1.5	73-75%
1.0	68-72%
0.5	64-67%
0.0	0-64%

### **Academic Honesty Policy**

If I suspect you of academic dishonesty, I will follow JC's Academic Honesty Policy and take appropriate action up to and including assigning a failing grade for the paper, project, report, exam, or the course itself (whichever I deem necessary). To see the policy, visit: <https://www.jccmi.edu/wp-content/uploads/StudentCodeOfConduct.pdf>.

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

**Plagiarism is defined as the failure to give credit for the use of material from outside sources.**

**Plagiarism includes but is not limited to:**

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

**Cheating is defined as obtaining answers/material from an outside source without authorization.**

**Cheating includes, but is not limited to:**

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

### **Incompletes Policy**

(Excerpt from JC Policy) "A student may request an incomplete from the instructor. The incomplete will be granted only if the student can provide documentation that his or her work up to that point is sufficient in quality, but lacking in quantity, due to circumstances beyond the student's control. Furthermore, a written plan for making up the missing work within one semester must be completed by the student. Final determination of whether an incomplete will be given is the instructor's decision."

### **Help**

It can be very frustrating when you do not understand concepts and are unable to complete homework assignments. However, there are many resources available to help you with your study of respiratory care (besides visiting me during office hours):

- **CENTER FOR STUDENT SUCCESS:** Tutors (plus additional services for academic success) can be accessed by calling **796-8415** or by stopping by the **Center for Student Success, Bert Walker Hall, Room 138**. Arrange to get regular assistance from a tutor. Also, students requiring special assistance (including those affected by the Americans with Disabilities Act) should contact the Center for Student Success. This is the first step in acquiring the appropriate accommodations to facilitate your learning. It is important to contact a Center for Student Success professional **prior to the start of the semester** in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. **Accommodations do not automatically carry over to the next semester.** <https://www.jccmi.edu/center-for-student-success/accommodations-for-students-with-disabilities/>
- **STUDY GROUP:** Find a study partner or a study group. Sometimes it helps to work through problems with another person.
- **JETNET:** There will be material posted there to help students and allow them to ask questions of the instructor and/or the group.
- **EMAIL:** The best and quickest way to get a hold of me, besides attending class, of course.
- **Redo problems** from tests and homework assignments, particularly ones that you got wrong or have trouble understanding. Remember that you must crawl before you can walk. Similarly, you must have a good handle on the basics of respiratory care before you can master the advanced concepts.

## Student Responsibilities

See **Respiratory Care Program Handbook** for program expectations.

**Class Conduct:** Please recognize that all students have an equal right to a quality classroom experience. Behavior that would adversely affect the rights of another student (i.e. side conversations, disruptive actions, etc.) will result in those responsible being asked to leave for the remainder of the period and losing credit for any work that is missed.

**Classroom expectations:** There are three expectations that will be enforced in the classroom:

1. First, attendance is very important to successfully learn and retain lecture information. Therefore attendance in class all day, every day is expected and encouraged. According to the **JC Respiratory Care Program Student Handbook**, student responsibilities include “taking an active role in the learning process”, and one cannot do this if you are not there and participating in discussion and class activities. The student will be responsible for contacting the instructor to obtain any make up material needed as a result of the absence. In order to facilitate preparation of such materials, the student will probably best contact the instructor as much in advance as possible via email or phone prior to class time if there is any expected absence or any makeup material needed. Then the student will need to contact the instructor after the absence to obtain any missing materials. As for notes or other content covered during class, it is the student’s responsibility to gather such material, so going to the instructor and asking for any handouts or materials is the student’s responsibility. Also, having a fellow student from whom the student can get such notes is vital in the event of an absence.
2. In addition, the **JC Respiratory Care Program Student Handbook** will be followed closely pertaining to classroom behavior. As stated in the Handbook, “Responsibilities borne by the student in maintaining an optimal learning environment include treating other students, instructors, respiratory therapists, and co-workers (e.g. nurses) with the respect afforded to fellow health care professionals.” Mutual respect between the instructor and all students is expected at all times. Disrespect and other disruptive behaviors which inhibit the teaching and learning to which the entire class is entitled will not be tolerated. Any incidents will be handled in keeping with the disciplinary policy spelled out beginning on **p. 16** of the **JC Respiratory Care Program Student Handbook**, and appropriate action taken up to and including **class expulsion**.
3. Thirdly, assignments or take home quizzes are expected to be handed in on the appropriate due date (which shall be **one week** from when they are given out in class). They may be handed in any time on the due date up to 4 pm with no penalty. In general, assignments that are late will be subject to a late penalty (5 pts/day deducted from the final grade for that assignment, for up to 8 days late to give a maximum of –40 pts for turn-ins late by one week; assignments turned in later than 8 days will lose an additional 10 pts/week).

## Attendance Policy

In compliance with Federal Title IV funding requirements, as well as college initiatives, reporting of student participation in classes will occur at three designated times each semester. Instructors will assign one of three non-transcribed letter symbols to each student during each reporting period (see below). Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

### Participation/Progress Symbols

- H – The student is not doing acceptable work and needs **Help** to be successful.
- Q – The student has not participated and the instructor believes they have unofficially withdrawn (**Quit**). These students will be dropped/withdrawn from the class.
- V – The instructor **Verifies** that the student is participating and doing acceptable work.

**Caveat**

All lectures cancelled, **regardless** of reason, will be made up at a later time to be determined by course instructor.

**Failure of Course**

See program handbook for program reentry process.

## Calendar

Week	Monday
1 <b>Jan</b>	<b>JAN 14</b> Cardiac A & P Review
2	21 Cardiac A & P Review
3 <b>Jan/ Feb</b>	28 <b><u>RES 207 Unit 1 Exam</u></b> Cardiac Conduction
4	4 Basic ECG
5	11 Basic ECG
6	18 <b><u>RES 207 Unit 2 Exam</u></b> Advanced ECG
7 <b>Feb/ Mar</b>	25 Advanced ECG
8	4 <b><u>RES 207 Unit 3 Exam</u></b> Hemodynamic Monitoring
<b>Spring Break</b>	11 <b>SPRING BREAK /NO CLASS!</b>
9	18 Hemodynamic Monitoring
10	25 Cardiac Output and IABP
11 <b>Apr</b>	<b>APR 1 <u>RES 207 Unit 4 PRACTICAL Exam</u></b> Cardiovascular Pharmacology
12	8 Clinical Cardiac Devices; ACLS Mock Exercises
13	15 <b><u>RES 207 FINAL Exam</u></b>
14	22 Clinical Cardiopulmonary Cases; CSE and CRT Discussion
15	29 Clinical Cardiopulmonary Cases; CSE and CRT Discussion

## Important Dates: Winter 2019

DATE	EVENT
JAN. 14, 2019	DAY AND EVENING CLASSES BEGIN
JAN. 14 – MAY 5, 2019	SEMESTER DATES
FEB. 1, 2019	IN-SERVICE DAY. NO CLASSES
FEB. 15, 2019	PATHWAY SHOWCASES DAY. NO CLASSES
MAR. 11-17, 2019	MID-SEMESTER BREAK. NO CLASSES
MAY 4, 2019	COMMENCEMENT
MAY 5, 2019	END OF WINTER SEMESTER
MAY 7, 2019	GRADES DUE