

UNIVERSITY OF SOUTH ALABAMA  
COLLEGE OF ALLIED HEALTH PROFESSIONS  
DEPARTMENT OF CARDIORESPIRATORY CARE

CRC 335 Intensive Cardiorespiratory Care  
Spring semester 2018

5 semester hours

Course master: Tim Op't Holt, Ed.D., R.R.T., AE-C  
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**DESCRIPTION:** This course will focus on cases involving patients receiving intensive cardiorespiratory care modalities including basic respiratory care, mechanical ventilation, invasive and non-invasive monitoring, and artificial airways. Diagnostic issues include fiberoptic bronchoscopy, arterial blood gas analysis, and pulmonary function testing. Students will discuss the pharmacology, pathophysiology and health promotion/disease prevention aspects of each case. Relevant laboratory exercises will be conducted. Web enhanced

**COURSE GOALS:** Students will incorporate a small group session method of Problem-Based learning into their learning styles. Students will learn through this method a systematic approach to information gathering, incorporation of new material (as described above), and decision-making. Objectives are stated by the students.

**COURSE CONTENT:** Cases will be introduced that will promote cognitive knowledge and psychomotor skills in:

- A. chronic obstructive pulmonary disease
- B. interstitial lung disease
- C. Acute Respiratory Distress Syndrome
- D. congestive heart failure
- E. neuromuscular disease
- F. head trauma
- G. pharmacology
- H. postoperative ventilation
- I. arterial blood sampling and analysis
- J. patient assessment
- K. thoraco-abdominal trauma
- L. indications for mechanical ventilation

- M. managing patients on mechanical ventilation
- N. physiologic effects of mechanical ventilation
- O. hazards and complications of mechanical ventilation
- P. weaning from mechanical ventilation
- Q. hemodynamic monitoring
- R. classification of mechanical ventilators
- S. mechanical ventilators
- T. shock/sepsis
- U. bronchoscopy
- V. pulmonary function testing

#### EVALUATION:

1. **Content examinations**, designed to assess the student's cognitive knowledge. These examinations will be based on the learning issues specified by the students in their small groups. In addition, the facilitators will provide a list of NBRC matrix items as a guide for these examinations.
2. A **facilitator assessment of student performance (FASP)**, in which the facilitator and students will evaluate the students' participation in the small group.
3. An **individual process assessment (IPA)**, which will evaluate the student's clinical reasoning skills and approach to the patient.
4. **Laboratory skills exercises**, designed to assess the students' skills in performing respiratory care procedures.

A written examination will be administered after each case is concluded, the sum of which will constitute ~ 50% of the grade. A comprehensive final examination will be administered, which will constitute ~ 20% of the final grade. The FASP evaluation is 10% of the final grade and the IPA is 20% of the final grade. If there is an extenuating circumstance such that you need to schedule a later examination, see the course master.

#### REFERENCES:

Kacmarek et al, Eds. Egan's Fundamentals of Respiratory Care, 11th ed. Chicago, Mosby-Yearbook, 2016.

Taber's Cyclopedic Medical Dictionary, FA Davis; or online medical dictionary

Cairo J. Mosby's Respiratory Care Equipment, 9th ed.

White GC. Basic Clinical Lab Competencies for Respiratory Care, 5th ed. Albany, NY, Delmar, 2013.

Heuer & Scanlan, Eds. Wilkin's Clinical Assessment in Respiratory Care, 7th ed. Chicago, Mosby-Yearbook, 2014.

DesJardins & Burton. Clinical Manifestations and Assessment of Respiratory Disease. 7th ed. St Louis, Elsevier. 2015

Gardenhire, Rau's Respiratory Care Pharmacology 9<sup>th</sup> ed. Elsevier.

Cairo J. Pilbeam's Mechanical Ventilation, 6th ed. Chicago, Mosby-Yearbook, 2016.

Clinical Practice Guidelines of the American Association for Respiratory Care

Internet resources, as defined by the class members

#### OFFICE HOURS:

You may feel free to consult with the instructors whenever they are in their offices and not busy with another person. Feel free to make an appointment if you desire.

#### CLASS ATTENDANCE:

The PBL attendance policy is in the PBL student handbook. **Attendance is expected, unless the facilitator is previously notified.** When online resources are available, students are expected to make use of them to enhance their knowledge of the topic. A grade of F\* will be assigned in cases where the student does not officially withdraw, but fails to attend, or fails to complete assignments, or who fails to participate in class activities. It will be used when, in the opinion of the instructor, completed assignments or course activities are insufficient to make normal evaluation of academic performance possible.

#### ELECTRONIC DEVICES

Electronic devices such as smart phones and computers may be used during group discussion to refer to learning issues, FYIs, etc., but not for personal emails and other personal communications

#### STUDENTS WITH DISABILITIES:

In accordance with the Americans with Disabilities Act, students with bonafide disabilities will be offered reasonable accommodation. The Office of Special Student Services (OSSS) will certify a disability and advise faculty members of reasonable accommodations. If you have a specific disability that qualifies you for academic accommodations, please notify me and provide certification from Disability Services in the Office of Special Student Services. The Office of Special Student Services is located in Room 270 of the Student Center (460-7212).

#### CHANGES IN COURSE REQUIREMENTS

Since all classes do not progress at the same rate, the instructor/professor may wish to modify the above requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of exams, or the number and sequence of assignments. However, the students must be given adequate notification. Moreover, there may be non-typical classes for which these requirements are not strictly applicable in each instance and may need modification. If such modification is needed, it must be in writing and conform to the spirit of this policy statement.

## ACADEMIC DISRUPTION

The University of South Alabama's policy regarding Academic Disruption is found in The Lowdown, the student handbook.

<http://www.southalabama.edu/lowdown/academicdisruption.shtml>: Disruptive academic behavior is defined as individual or group conduct that interrupts or interferes with any educational activity or environment, infringes upon the rights and privileges of others, results in or threatens the destruction of property and/or is otherwise prejudicial to the maintenance of order in an academic environment. We expect students to be cordial, courteous and respectful of faculty members and fellow students.

## STUDENT ACADEMIC CONDUCT POLICY

The University of South Alabama's policy regarding Student Academic Conduct Policy is found in The Lowdown <http://www.southalabama.edu/lowdown/academicconductpolicy.shtml>: The University of South Alabama is a community of scholars in which the ideals of freedom of inquiry, freedom of thought, freedom of expression, and freedom of the individual are sustained. The University is committed to supporting the exercise of any right guaranteed to individuals by the Constitution and the Code of Alabama and to educating students relative to their responsibilities.

If a student violates these standards, they may be asked to leave.

- Students enrolled in online courses are expected to adhere to the Academic Conduct Policy. In particular, students are expected to complete their own coursework and not provide unauthorized information or materials to another student.

## ONLINE WRITING SUPPORT

- Information about the University Writing Center eTutoring can be found online at <https://www.southalabama.edu/writing>

## COUNSELING AND TESTING SERVICES

Counseling and Testing Services provides a variety of free and confidential services for students. For further information regarding this resource go to [www.southalabama.edu/counseling](http://www.southalabama.edu/counseling) or call the office at 460-7051.

## CRC 335 PBL Groups

Group 1	Group 2
Alhazmi	Alharbi
Lowrey	Larson
Riley	Parker
Harris	Gray
Campbell	Allehaibi
Norton	Powell
Nasher	

Book assignments: bring these books or the e-version to each group session

Book	Group 1	Group 2
Egan's Fundamentals	Alhazmi	Alharbi
Cairo equipment	Lowrey	Larson
White lab	Riley	Parker
Wilkin's assessment	Harris	Gray
DesJardins disease	Campbell	Allehaibi
Cairo Pilbeam's Ventilation	Norton	Powell

Other books: all or an E-version on computer

CRC 335 Schedule - Spring 2018

**Group 1 meets in CRC lab**

**Groups 2 meets in conference room**

Ventilator laboratory activities may be completed anytime other classes are not scheduled for your group and personnel are available to open the lab. **MAXIMUM** of two students/ventilator for laboratory exercises. Please sign-up for times on the sign-up sheet posted in the classroom.

<u>Day</u>	<u>date</u>	<u>case</u>	<u>activity/topic</u>	<u>refs</u>
Mon	2/12	Taylor	<b>Exam 5 CRC 332</b> 8am-10am f/b 335 orientation Ventilator classification, 10am-12pm Groups 1 & 2, 1-3	DesJardins, ch 18
Tue	2/13		Mardi Gras	
Weds	2/14		Group 1&2, 8-10am Ventilator classification, 10-12, 1-3	P, ch 1-3, E ch 42, Cairo, ch 12
Fri	2/16		Groups 1&2, 8-10 PB 840, 10-12	Cairo 450-453
Mon	2/19		<b>CRC 332 Final Exam 7:30-10am</b> Groups 1&2, 10-12	
Wed	2/21		Groups 1&2, 8-10am Graphics lecture, 10-12 Need for MV, 1-3	P, ch 9 P, ch 4; E ch 41
Fri	2/23		Groups 1&2, 8-10 Review and discussion, 1-3	
Mon	2/26	Pratt	<b>PBL Exam 1</b> , 8-10 Groups 1&2, 10-12 Drager Evita lecture, 1-3	Evolve website or Cairo 428-435.
Tue	2/27			
Wed	2/28		Groups 1&2, 8-10 Physiology lecture, 10-12 Physiology lecture, 1-3 Initiation of ventilation for neuromuscular disorders exercise	P, ch 16-17, E ch 43

Initiation of ventilation for closed head injury exercise  
ICU ventilator laboratory exercise

Fri	3/2		Groups 1&2, 8-10 Ventilator complications lecture, 10am-12pm	P: ch 14,18; E: p. 1078-1084
Mon notes	3/5	Albatross	Group 1&2, 8-10 Review and discussion, 10-12	CAD handout/lecture from CRC 332
Tue	3/6		<b>PBL Exam 2</b> , 8-10 Intubation lecture 10 - 12  Ventilator check lecture, 1-3	E: ch 33, C&P: p. 168-176, 180-199 P: ch 8.
Wed	3/7		Groups 1&2, 8-10 PB 980 lecture 10-12  View these videos: <a href="http://www.medtronic.com/content/dam/covidien/library/us/en/product/acute-care-ventilation/pb980-video-manual/index.html">http://www.medtronic.com/content/dam/covidien/library/us/en/product/acute-care-ventilation/pb980-video-manual/index.html</a>	
Fri	3/9		Groups 1&2, 8-10 Initiation of ventilation for pulmonary edema/CHF exercise ICU ventilator exercise	
Mon	3/12	Overman	Groups 1&2, 8-10 Review and discussion, 10-12	DesJardins: ch 12
Tue	3/13		<b>PBL Exam 3</b> , 8-10 Vent settings lecture, 10 -12 Vent settings lecture, 1-3 Initiation of ventilation for COPD exercise Initiation of ventilation for asthma exercise ICU ventilator exercise	P: ch 5-7, 13, E: ch 44
Wed	3/14		Groups 1&2, 8-10	
Fri	3/16		Group 1, 8-10 (Dr. Op't Holt) Group 2, 10-12 (Dr. Op't Holt) Vent settings lecture, 1-3 (if needed)	
Mon	3/19		Groups 1&2, 8-10	

Tue	3/20		Vent in COPD, 8-10	
Wed	3/21		Groups 1&2, 8-10	
Fri	3/23		Groups 1&2, 8-10	
Mon-Fri	3/26-30		Spring Break	
Mon	4/2	Kane	Groups 1&2, 8-10 Review and discussion, 10-12	DesJardins: ch 28
Tue	4/3		<b>PBL Exam 4</b> , 8-10am Improving oxygenation lecture, 10-12 Servoi ventilator lecture, 1-3 Initiation of ventilation for ARDS exercise ICU ventilator exercise	P: ch13 Cairo: 454-457
Wed	4/4		Groups 1&2, 8-10 Improving oxygenation/vent in ARDS, 10-12	
Fri	4/6		Groups 1&2, 8-10 Hemodynamics lecture, 1-3  Pharmacology lecture, 3-5	P: ch 11 White: Ch 13 & 14 Wilkin's ch 15&16 P: ch15
Mon	4/9		Groups 1&2, 8-10am	
Tue	4/10		Weaning lecture, 8-10 NPPV lecture, 10-12 Respironics V60:	P: ch 20, E: ch 47 P: ch 19, E: ch 45
<a href="https://www.theonlinelearningcenter.com/course-catalog/Product/module/7923/180">https://www.theonlinelearningcenter.com/course-catalog/Product/module/7923/180</a>				
Complete this module and submit the certificate.				
Wed	4/11		Groups 1&2, 8-10 Review and discussion, 11-12	
Fri	4/13		Groups 1&2, 8-10 Hamilton G5 ventilator lecture, 1-3pm (tentative) Cairo 440-449	
Mon	4/16		<b>PBL exam 5</b> , 10-12	
TBA			Final Examination – exam week	



