



MIDWESTERN STATE UNIVERSITY

## Course Syllabus: Adult Critical Care

Robert D. & Carol Gunn College of Health Sciences & Human Services

RESP 3543 Section 201

Spring 2019: January 14- May 11

### Contact Information

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### Textbook & Instructional Materials

Cairo, J. (2016). *Pilbeam's mechanical ventilation: physiological and clinical applications*. 6th ed. St. Louis, Mo.: Elsevier.

ISBN: 978-0-323-32009-2

### Course Description

The focus of this lecture course is a thorough review of ventilatory support techniques. Emphasis is placed on adult applications; however some neonatal and pediatric support techniques are covered. Topics include etiology of respiratory failure, physical implications of positive pressure ventilation, methods of providing support, prescribing machine settings and managing the patient-ventilator system, hemodynamic and gas exchange monitoring, weaning techniques and non-invasive applications.

### Course Objectives

Upon completion of this course, the student will be able to:

1. Discuss the basic design features of ventilators
2. Classify ventilators and how they work
3. Define what constitutes a mode of ventilation
4. Classify and discuss modes of ventilation
5. Explain the indications for basic modes of ventilatory support
6. Discuss the effects of mechanical ventilation on oxygenation, ventilation and lung mechanics
7. Discuss the effects of mechanical ventilation on other body systems
8. Describe the complications and hazards of providing mechanical ventilatory support
9. Discuss how to minimize the adverse effects of mechanical ventilation
10. Review the indications for mechanical ventilation
11. Identify and assess patients who need ventilatory support

12. Describe how to choose the correct ventilator to begin ventilatory support
13. Describe how to select the appropriate mode of ventilation for a patient condition
14. Describe how to apply initial settings, assess response and make appropriate adjustments
15. Describe the types of monitoring best applied to patients receiving mechanical ventilation in the ICU
16. Discuss monitoring and trouble-shooting the patient-ventilator system in the ICU
17. Explain how to evaluate a patient before attempting ventilator discontinuance or weaning
18. Describe the techniques, advantage and disadvantages of various weaning methods

#### Study Hours and Tutoring Assistance

Please refer to Lattes & Learning Schedule or setup appointment with instructor.

#### Student Handbook

Refer to: [Student Handbook 2017-18](#)

#### Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.

#### Grading

Course Grade - \*\*A minimum grade of 75 (C) is required in all respiratory courses. Failure to attain a minimum grade of C will prevent the student from progressing in the program.

Table 1: Grading Scale.

Grade	Percentage
A	90-100%
B	80 to 89%
C	75 to 79%
D	60 to 74%
F	Less than 60%

Table 1: Percentage allocated to each assignment

Assignments	Percentage
Lecture Examinations (5)	50%
Homework/Classroom Assignments	10%
Clinical Applications Project	20%
Final Examination	20%
Total Points	100%

#### Lecture Examinations

During the semester there will be in-depth exams covering the specified material. Examinations may consist of true/false, multiple choice, short answer or essay questions. The examinations will count towards 50% of the overall grade. Students will be granted 85 minutes to complete each exam. These will appear on the Course Schedule in more detail.

#### Homework

Each unit will have a homework assignment. These will typically be definitions and short answer questions. The assignment is due on the day of each unit exam. Homework may be found in D2L.

#### Clinical Applications Project

Students will complete a project to present to the class dealing with specific problems in mechanical ventilation: Details below.

#### Final Examination

The final will be a comprehensive examination consisting of any combination of true/false, multiple choice, short answer or essay questions.

#### Missed Homework/Exam Policy

Each student should make every effort to ensure that all assignments are submitted in a timely manner. A 10% reduction will be taken for each day after the scheduled due date for the assignment. If a student is going to miss an examination, it is the student's responsibility to contact the instructor prior to the exam to arrange with the instructor to make up the missed exam. A 15% reduction will be taken for each day (weekends and holidays included) after the scheduled exam date. The professor reserves the right to make unscheduled exams essay in nature and considerably more challenging.

#### Extra Credit

Extra credit will not be given in this course.

### Important Dates

Last day for term schedule changes: January 16, 2019

Deadline to file for graduation: February 18, 2019

Last Day to drop with a grade of "W:" March 25, 2019

Refer to: [Drops, Withdrawals & Void](#)

### Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

### Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. Although in general students are graded on intellectual effort and performance rather than attendance, absences may lower the student's grade where class attendance and class participation are deemed essential by the faculty member. In those classes where attendance is considered as part of the grade, the instructor should so inform students of the specifics in writing at the beginning of the semester in a syllabus or separate attendance policy statement. An instructor who has an attendance policy must keep records on a daily basis. The instructor must give the student a verbal or written warning prior to being dropped from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college has the authority to establish an attendance policy, providing the policy is in accordance with the General University Policies.

### Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ***Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.*** Computers are available on campus in various areas of the buildings as well as the Academic Success Center. **Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into [D2L](#).

### Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

### Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exist in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

### Services for Students With Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to <http://www.mwsu.edu/student-life/disability>.

### College Policies

#### Campus Carry Rules/Policies

Refer to: [Campus Carry Rules and Policies](#)

#### Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

#### Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

## Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University [Undergraduate Catalog](#)

## Course Schedule:

### Notice

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

## Course Schedule

Week	Date	Topic	Text Reference	Assignments
1	January 14	Syllabus Review Basic Terms/Concepts for MV How Ventilators Work	Ch. 1 Ch. 2	
	January 16	How a Breath is Delivered	Ch. 3	HW #1 due by 1159pm
2	January 21	No Classes MLK Day		
	January 23	Need for MV	Ch. 4	
3	January 28	<b>Exam #1</b> Selecting Vent & Mode	Ch. 5	HW #2 due by 0900
	January 30	Initial Vent Settings Final Vent Setup	Ch. 6 Ch. 7	
4 & 5	February 4-15	Clinical Rotation		
6	February 18	Initial Pt. Assessment Ventilator Graphics	Ch. 8 Ch. 9	
	February 20	<b>Exam #2</b> Assessment of Resp. Function	Ch. 10	HW #3 due by 0900
7	February 25	Hemodynamics Improve Ventilation	Ch. 11 Ch. 12	
	February 27	Improve Ventilation Improve Oxygenation	Ch. 12 Ch. 13	
8 & 9	March 4-15	Clinical Rotation		
	March 18-22	Spring Break		
10	March 25	Improve Oxygenation	Ch. 13	
	March 27	<b>Exam #3</b> VAP	Ch. 14	HW #4 due by 0900
11	April 1	Sedative, Analgesics, Paralytic Extrapulmonary Effects of MV	Ch. 15 Ch. 16	
	April 3	Effects of PPV	Ch. 17	
12	April 8-12	Clinical Rotation		
13	April 15	<b>Exam #4</b> Troubleshooting/Problem Solve	Ch. 18	HW #5 due by 0900
	April 17	Troubleshooting/Problem Solve Weaning	Ch. 18 Ch. 20	
14	April 22-26	Clinical Rotation		
15	April 29	Special Techniques	Ch. 23	
	May 1	<b>Exam #5</b> Project Presentations @ 0930		HW #6 due by 0800
	May 2	Case Studies		
16	May 6	Final Exam @ 1pm		

## Clinical Application Project

**OVERVIEW:** In the context of a group project, students will **address a specific disease in mechanical ventilation** and present their work to the class.

### Outline

**DISEASE PROCESS:** Present a clinical case for one of the following problems:

ARDS, Asthma, Neuromuscular disease, Emphysema, Pulmonary embolism, Flail Chest, Pneumonia, Interstitial Lung Disease

**Present:**

- a review of the patient assessment
- disease etiology
- the groups most affected
- the prevalence of the disease or condition

**PULMONARY PATHOLOGY:** Describe the effects on the lung, including gas exchange disruption and pulmonary mechanics i.e. compliance and resistance.

**VENTILATOR MANAGEMENT STRATEGIES:** Outline contemporary views on the ventilator management of the disease process. Utilize all resources including textbooks (Egan), periodicals (Chest, ARRD, JAMA), and web based sources (ARDSNET).

**OUTCOMES:** In this section the group should present outcomes data. For example, information related to **mortality and morbidity**.

**Project management** – Students will be allowed to self-select into groups and topics will be chosen randomly. Each group will only have one topic to present and the groups will contain no more than 2 to 3 persons. Completed projects will be presented at the end of the semester and comprise a percentage of the final grade. Rubric can be found in D2L.

### Project Requirements

- 15 minute presentation
- 10-20 slides (not including title and reference slides)
- APA format is to be used throughout the presentation
- Minimum of 5 current resources are needed
- Be creative!!! Add pictures, x-rays, etc. as needed
- Every team member must speak