

9-2013

## AHRC 129.01: Patient Care and Assessment

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**The University of Montana – Missoula College  
Respiratory Care Program**

**COURSE NUMBER AND TITLE:** AHRC 129 PATIENT CARE AND ASSESSMENT

**DATE REVISED:** Summer 2013      **SEMESTER CREDITS:** 4

**CONTACT HOURS:** 4 hours per week / 60 hours per semester

**PREREQUISITE:** SCN 201N / 202N

**CLASS MEETS:** T, R, O910hrs – 1100hrs Room: HB 16

**FACULTY:** Nick Arthur

[nicholas.arthur@umontana.edu](mailto:nicholas.arthur@umontana.edu)

243-7836 (office)

Office: GH 4

Office Hours: M, W, F 1200hrs – 1400hrs, and by appointment

**RELATIONSHIP TO PROGRAM:**

This program offers the students the opportunity to develop a scientific basis for fundamental patient assessment skills that are integral to the Respiratory Care Program. Bedside patient assessment as well as interpretation of diagnostic studies and test results will be introduced.

**COURSE DESCRIPTION:**

Assessment of the cardiopulmonary system along with diagnostic and laboratory test interpretations are covered. Peer and instructor review of selected clinical competencies are studied in a laboratory setting. Students will be expected to actively participate in class discussion.

**STUDENT PERFORMANCE OUTCOMES:**

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

1. Discuss and demonstrate proper techniques for taking patient vital signs.
2. Demonstrate proper techniques of auscultation, percussion, and palpation.
3. Describe and discuss various disorders of body systems using appropriate medical terminology, abbreviations, and descriptive terms.
4. Discuss why specific laboratory tests are run.
5. Describe the physiological process measured directly or indirectly by each lab test.
6. Identify normal lab values and discuss clinical implications of laboratory findings.
7. Interpret an array of acid-base and blood gas results and physiological significance.
8. Describe bedside and formal pulmonary function studies, normal values and the significance of abnormal values on patient status.
9. Discuss a variety of sleep disorders and assessment relative to clinical experience.
10. Have a basic understanding of X-ray interpretation.
11. Discuss basic concept of electrocardiogram testing, ECG, and its diagnostic functions.
12. Discuss age-specific variations in basic assessment and vital signs.
13. Discuss issues surrounding respiratory care delivery in the home environment and alternative settings

**METHODS OF INSTRUCTION:** Lecture, reference reading, video presentations, assignments, and group discussion.

**STUDENT ASSESSMENT METHODS AND GRADING PROCEDURES:**

There will be five major exams and a number of quiz/worksheets during the course. Specific dates of exams will depend upon our progress through the course material and will be announced well in advance. Exam content will be as follows:

- |                |                           |
|----------------|---------------------------|
| <b>Exam 1:</b> | <b>Units I &amp; II</b>   |
| <b>Exam 2:</b> | <b>Unit III</b>           |
| <b>Exam 3:</b> | <b>Unit IV</b>            |
| <b>Exam 4:</b> | <b>Unit V</b>             |
| <b>Exam 5:</b> | <b>Units VI &amp; VII</b> |

**Unit Exams: 70%**  
**Quizzes: 20%**  
**Participation: 10%**  
**(Approximate breakdown)**

| <b>GRADING SCALE:</b> |      |         |      |      |        |
|-----------------------|------|---------|------|------|--------|
| A =                   | 4.0  | 95-100% | C =  | 2.00 | 74-76% |
| A- =                  | 3.67 | 90-95%  | C- = | 1.67 | 70-73% |
| B+ =                  | 3.33 | 87-89%  | D+ = | 1.33 | 67-69% |
| B =                   | 3.00 | 84-86%  | D =  | 1.00 | 64-66% |
| B- =                  | 2.67 | 80-83%  | D- = | .667 | 60-63% |
| C+ =                  | 2.33 | 77-79%  | F =  | 0.00 |        |

Students in the Respiratory Care Program **must have a "B-" (80% or greater) final grade in order to progress** within the program. Test questions will be based on unit objectives. Unit objectives are to be used as study guides.

#### **METHODS TO IMPROVE COURSE:**

Student evaluations and respiratory faculty assessment of course content.

**ATTENDANCE:** Class attendance is an integral part of this course. Exam dates will be announced. Only legitimate reasons for missing an announced exam will be accepted. Failure to appear for scheduled exams will result in zero points awarded. Expect periodic unannounced quizzes. There is no make-up for missed quizzes.

SEE: TEST/QUIZ MAKEUP

### **Please refer to your Student Manual for additional Policies and Student Resources.**

#### **ACADEMIC INTEGRITY:**

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by The University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at [http://life.umt.edu/vpsa/student\\_conduct.php](http://life.umt.edu/vpsa/student_conduct.php).

#### **DISABILITY ACCOMODATION:**

Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please speak with me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disabilities Services website at <http://www.umt.edu/dss/> or call 406-243-2243 (voice/text)

**Note: Instructor reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances.**

**Cell Phones/Pagers:** Due to an increasing number of students, who own and use cell phones and pagers, it has become necessary to institute a policy during class times. As you are aware, these tools are distracting to an entire class. However, some students require them for business, which allows them to further their education. Please follow these guidelines:

If the cell phone/pager is not business or emergency related, please turn it off.

Use the vibrating option on your pager.

Do not listen to the messages in class. Please leave class quietly.

**CELL PHONES AND PAGERS MUST BE TURNED OFF DURING EXAM AND CLASS**

#### **PRESENTATIONS.**

**SEATING:** Many classrooms have chairs to accommodate persons with disabilities. These chairs will display the international disability symbol and are assigned to a particular student. Please refrain from using these chairs or making adjustments to them unless the chair is assigned to you. If you think you may have the need for a specific chair, please contact Disability Student Services. Thank you for your cooperation.

**TEST/QUIZ MAKEUP:** Make-up exams and lab experiences **will only be given under extreme circumstances** and then only if: **a)** permission is granted *in advance* by the course instructor, or **b)** a written excuse is provided by a medical doctor. **The burden of proof is on the student**, so you must document and prove a justifiable absence. Not following this procedure prior to the exam will automatically result in a zero points awarded for the exam. Missed tests need to be made up within **one week** of the original date given. You are responsible for contacting the Academic Support Center, 243-7826, to schedule the make-up. Failure to do so will result in a **ZERO** grade for the missed test.

The faculty senate guidelines concerning the issuance of incomplete grades will be followed. Attention to critical dates such as P/NP, drop, etc. is the responsibility of the student. Students wishing to drop the class after the drop deadline will need a documented justifiable reason for doing so. Dropping the class for fear of

bad grade or to protect a GPA are **not** justifiable reasons. The principles embodied in the **Student Handbook Code** will be adhered to in this course.

**Quizzes:** Failure to be present for quizzes will result in a zero being recorded and used in computing your average. There will be no make-up opportunities for missed quizzes.

**Homework: It is the expectation that homework will be turned in when due.** If you are not present, it is your responsibility to see that it is in my mailbox by 4:00 p.m. on the due date **or a zero will be recorded and used in computing your average.**

**Student Decorum:** All students are expected to conduct themselves in a professional manner at all times in both the classroom and alternative settings. Discussions of an academic nature are encouraged and can enhance student learning. However, social conversation is not appropriate during lectures as it creates a distraction to students and faculty. Respect and courtesy will be shown at all times to peers, faculty, and the general public. **There are no exceptions to this policy at any time or under any circumstances.**

#### **REQUIRED TEXTS:**

Clinical Assessment in Respiratory Care, 6<sup>th</sup> Edition

Author: Wilkins, et al

Publisher: Mosby, ISBN: 978-1-4160-5923-3

Basic Clinical Lab Competencies for Respiratory Care, 4<sup>th</sup> Edition

Author: White

Publisher: Delmar, ISBN: 0-7668-2532-9

## **Unit outlines, Objective, and Readings :**

### **Unit I: The Patient Encounter.**

#### **Outline:**

A. Preparing for the Patient Encounter:

B. Medical History & Interview:

C. Cardiopulmonary Symptoms:

#### **Objectives:**

At the end of this unit the student will be able to:

1. Describe the use of Space as applied to patient/clinician interaction
2. Recognize the importance of "Territoriality"
3. Describe methods for structuring the patient interview and methods of obtaining an accurate and complete patient history
4. Identify the content, sources, importance, and components of a comprehensive patient history
5. Describe the causes and characteristics of common Cardiopulmonary symptoms including cough, sputum production, dyspnea, chest pain, edema, GERD, fever, diaphoresis, hemoptysis, hyper/hypotension.

#### **Reading:**

Wilkins, Chapters 1, 2, 3

### **UNIT II: Physical Assessment.**

**Outline:**

## A. Vital Signs:

- Competency for RES 130 from White's Basic Clinical Lab Competencies:  
p. 29-Vital Signs  
p. 175 – Pulse Oximetry Monitoring

## B. Fundamental Physical Exam:

- Competencies for RES 130 from White's Basic Clinical Lab Competencies:  
p. 31- Breath Sounds (auscultation)  
p. 45- Physical Assessment

**Objectives:**

Upon completion of this unit the student will be able to:

1. Identify the four classic vital signs, their normal values, and the significance of abnormal values.
2. Describe equipment and techniques used to obtain measurements of vital signs
3. Describe factors that may limit or impair the accuracy of vital sign measurements
4. Define basic terminology of vital signs
5. Identify the importance of "Trends" in measurements
6. Identify and describe principles of the examination of the head and neck, thorax, lungs, precordium, abdomen, and the extremities
7. Gain basic understanding of techniques of auscultation and interpretation of lung sounds both normal and abnormal (adventitious)
8. Please see Wilkins Ch. 5 learning objectives for greater detail.

**Readings:**

Wilkins, Chapters 4, 5

White, Chapters 2, 3

**UNIT III: Assessment of Pulmonary Function.****Outline:**

## A. Pulmonary Function Testing:

- Competencies for RES 130 from White's Basic Clinical Lab Competencies:  
p. 97 - Bedside Pulmonary Function Testing  
p. 99 - Basic Spirometry

**Objectives:**

Upon completion of this unit the student will be able to:

1. Describe the purpose of, and indications for, Pulmonary Function Testing (PFT)
2. List and describe the standard equipment found in the PFT lab
3. Define basic PFT terminology (values, measures, flows, volumes)
4. Describe Normal PFT values and the factors that determine /influence them
5. Identify abnormalities associated with obstructive and restrictive pathologies and their effect on measured PFT values
6. Identify the theory and methods used to measure RV and FRC
7. Identify the theory and methods used to measure Diffusion Capacity
8. Describe the significance of pre/post bronchodilator PFT results
9. Explain the correct interpretation of PFT results in terms of obstructive, restrictive, normal

**Readings:**

Wilkins, Chapter 9

White, Chapter 5

Reference Egan Ch. 19

**UNIT IV: Laboratory Assessment.****Outline:**

A. Clinical Laboratory Studies:

B. Interpretation of Blood Gases:

### Objectives:

Upon completion of this unit the student will be able to:

1. Describe Formed elements and plasma of the blood
2. Identify the normal values and significance of hematology lab tests including CBC, sedimentation rate, coagulation studies, Hematocrit, Hemoglobin
3. List the causes and significance of common White Cell abnormalities
4. Define Anemia and describe common causes and significance of findings
5. Describe clinical implications of reduced platelet count
6. List normal values for Chemistry Panel significance of Abnormal findings
7. Describe principles of Sputum collection, analysis, gram stain, culture and sensitivity
8. Identify common causes of Pneumonia
9. Identify the significance of abnormal findings during examination of Pleural fluid
10. Describe common indications and findings of Urinalysis
11. Describe common indications and findings of Skin testing
12. Define normal values for pH, PaO<sub>2</sub>, PaCO<sub>2</sub>, HCO<sub>3</sub>, SaO<sub>2</sub>, P(A-a)O<sub>2</sub>, CaO<sub>2</sub>.
13. Describe the clinical indications for ABG sampling and the common techniques used for sample acquisition.
14. Describe, in basic terms, the causes, significance, and expected compensatory responses of simple ABG acid-base disorders
15. **NOTE: ABG's will be covered in much greater depth in future courses**

### Readings:

Wilkins, Chapters 7, 8

## UNIT V: Diagnostic Imaging.

### Outline:

A. Chest Radiograph & other imaging tools:

[www.netanatomy.com](http://www.netanatomy.com) & Handout worksheet for self-study.

B. Interpretation of Electrocardiogram Tracings:

Competency for RES 130 from White's Basic Clinical Lab Competencies:

p. 67 - Chest X-Ray Interpretation

p. 113 - Electrocardiograms

### Objectives:

Upon completion of this unit the student will be able to:

1. Describe how a Radiographic image is produced
2. Define Radiolucent, Radiopaque, common terminology/descriptors of CXR
3. Identify and describe different types of x-ray image (AP, PA, Lat.Dec., etc) and indications for each
4. Explain indications, advantages, and disadvantages of various radiographic views
5. Identify anatomical structures seen on chest film
6. Identify various non-anatomical objects (catheters, tubes, etc) on a chest film and determine proper positioning of each
7. Describe the systematic approach to x-ray interpretation and quality of image production
8. Evaluate chest film for clinical findings typical of common lung/ thorax/ cardiac disorders
9. Describe the indications and advantages of other imaging techniques (MRI, CT, PET, Angiography)
10. Describe clinical value of and indications for ECG
11. Define and identify the key components of the Cardiac conduction system as seen on ECG tracings
12. Identify normal and abnormal measures of cardiac electrical activity (PR interval, QRS complex)
13. Describe a systematic approach to basic ECG interpretation (rate, rhythm, etc)
14. Describe criteria for common rhythm abnormalities (dysrhythmias)
15. Describe ECG abnormalities associated with chronic lung disease

### Readings:

Wilkins, Chapters 10, 11  
White, Chapters 4, 6  
Reference Egan Ch. 20  
Guest Lecturer

## **UNIT VI: Bronchoscopy and Nutrition.**

### **Outline:**

A. Flexible Fiber optic Bronchoscopy:

Clinical Practice Guidelines Refer to AARC Clinical Practice Guidelines

At: [www.rcjournal.com/cpgs](http://www.rcjournal.com/cpgs), Bronchoscopy

Competency for Bronchoscopy Observation found in RES 130 Syllabus.

B. Nutritional Assessment:

### **Objectives:**

Upon completion of this unit the student will be able to:

1. Define basic terminology of endoscopy
2. Identify common indications for bronchoscopy and differentiate between diagnostic and therapeutic
3. Discuss complications and contra-indications for bronchoscopy
4. List essential equipment, brushes, forceps, needles, for sterile and non sterile biopsies and procedures.
5. Describe drugs commonly used for procedure, patient care, and recovery.
6. Describe the relationship of nutrition to respiration, muscle efficiency, metabolism
7. Define RQ and identify the effect of various nutritional constituents upon metabolism
8. Identify the importance of appropriate nutrition to favorable patient clinical outcomes
9. Describe the methods available for meeting nutritional needs and the advantages/ disadvantages of each

### **Readings:**

Wilkins, Chapter 17, 18. Video Presentation in class

## **UNIT VII: Geriatric Assessment , Sleep Medicine, and Home Care.**

### **Outline:**

A. Assessment of Sleep & Breathing:

B. Assessment of Older Adult Patients:

C. Assessment of the Home Care Patient:

### **Objectives:**

Upon completion of this unit the student will be able to:

1. Describe techniques for reducing barriers to communication with older patients
2. Identify age related structural and physiological changes in the cardiopulmonary system
3. List diagnostic tests and vital signs that have altered, age related normal values
4. Describe the correlation between sleep apnea, snoring, and excessive daytime sleepiness
5. Describe the potential effect of sleep disordered breathing on various body systems
6. Describe the physiological parameters monitored during polysomnography and the way in which they are used to quantify and measure various types of sleep disordered breathing
7. List the clinical assessment criteria for apnea types (obstructive, central, mixed) and apnea severity (mild→severe)
8. Describe the normal stages of sleep and the structural/physiological changes associated with each
9. List the advantages/disadvantages/challenges of patient care in the home setting and identify the types of patients best suited to home care
10. Identify tools and resources used in home care and identify those tools and resources not available
11. Describe patient care plan, evaluation, assessment, and follow up in home care setting
12. Describe Respiratory care equipment specific to home care and the unique characteristics (features, maintenance, cleaning, disinfection, etc.) required

13. Identify the importance of the patient support network and the need to educate those individuals assisting in patient home care
14. Describe the criteria used to determine the safety and appropriateness of the home care setting

**Readings:**

Wilkins, Chapters 13, 19, 20

Guest Lecture