



INSTRUCTIONAL PACKAGE

RES 111

Pathophysiology

Effective Term
Spring/2020

INSTRUCTIONAL PACKAGE

Part I: Course Information

Effective Term: Spring 2020 (201920)

COURSE PREFIX: RES COURSE TITLE: Pathophysiology

CONTACT HOURS: 2 CREDIT HOURS: 2

RATIONALE FOR THE COURSE:

RES 111 is a lecture course that will identify and describe the components of the patient assessment. In RES 111, you will evaluate patient clinical assessments and identify the lung disease associated with the patient. Students will also formulate the respiratory care treatment plan using SOAP notes and the proper respiratory modality commonly used for pulmonary diseases.

COURSE DESCRIPTION:

This course is a study of the general principles and analyses of normal and diseased states.

PREREQUISITES/CO-REQUISITES:

General Education courses BIO 210, 211, 225, MAT 120, ENG 101, PSY 201, and HUM. Respiratory Care Program first semester courses RES 101. Required prerequisite courses must be completed with a grade of "C" or better.

REQUIRED MATERIALS:

Des Jardins, T. and Burton, G.G. (2016). Clinical Manifestations & Assessment of Respiratory Diseases, 8th ed. Elsevier St. Louis, MO. ISBN# 9780323553698

Des Jardins, T. and Burton, G.G (2002). Case Studies to Accompany Clinical Manifestations & Assessment of Respiratory Diseases, 2nd ed. Elsevier St. Louis, MO. ISBN# 978-0323-010757

Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.

[BOOKSTORE](#).

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

TECHNICAL REQUIREMENTS:

Access to Desire2Learn (D2L), HGTC's student portal for course materials.

WaveNet and D2L email access.

CLASSROOM ETIQUETTE:

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

PLAGIARISM & CHEATING:

Refer to the College catalog & Student handbook HGTC Handbook.

The student may be assigned a failing grade for the course or may be required by the professor to withdraw from the course and/or the respiratory care program. Such actions are deemed to be unprofessional behavior within this program and will not be tolerated.

Part II: Student Learning Outcomes

1. Identify the components and meaning of the findings from a thorough patient assessment.
2. Identify the elements and diagnosis of respiratory failure.
3. Identify the etiology, pathophysiology, clinical features and treatment of the following disease states: Asthma, COPD, Cystic Fibrosis, Pulmonary Embolism, Acute Respiratory Distress Syndrome (ARDS), Chest Trauma, Atelectasis, Neuromuscular Diseases, Bacterial Pneumonia, and Tuberculosis

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

Module I

Material Covered: Patient Assessment

- Chapter 1 Patient Assessment & Interview p 1-7
- Chapter 2 Physical exam p 10-25
- Chapter 6 ECG p 81-82
- Chapter 7 Chest X-ray p 89-91
- Chapter 8 Sputum, Hematology, Thoracentesis p 39, 105 & 107

Assessments:

- Homework
- Quiz
- Test

Learning Outcomes:

1. List information gathered while interviewing a patient and taking their medical history.
2. Describe a successful interview sequence between a respiratory therapist and patient.
3. Identify & explain the 5 techniques of communication.
4. Identify normal values for vital signs and what will make them increase or decrease.
5. Identify the parts of a physical exam: Inspection, palpation, percussion and auscultation and what is evaluated with each part.
6. Identify and define that 10 different breathing patterns.
7. Identify/Describe the following physical and what they may indicate cyanosis, pallor, clubbing, peripheral edema, neck vein distention, jaundice, capillary refill
8. Identify types of chest abnormalities: Barrel Chested, Pectus Carinatum (pigeon breast), Pectus excavatum, Kyphosis, Scoliosis, and Kyphoscoliosis.
9. Define subcutaneous emphysema.
10. Identify the technique for tactile fremitus & possible causes of increase & decrease fremitus.
11. Describe the technique used for assessing chest expansion/ chest motion symmetry and possible causes for asymmetry movement.
12. Define percussion notes & causes: Resonance, flatness, dullness, tympany, hyperresonance
13. Identify parts of a stethoscope and know their primary functions.
14. Identify proper patient breathing instructions for listening to their breath sounds.

15. Describe/Identify normal and abnormal breath sounds and cause of abnormal sounds.
16. Define: voice resonance, egophony, and bronchophony
17. Identify normal values for vital signs and what will make them increase or decrease.
18. Identify normal & abnormal sputum characteristics & what is/has occurred when they change.
19. Define the following: sputum culture/sensitivity, gram stain, acid fast stain.
20. Identify normal lab values (CBC, Electrolytes)
21. Identify conditions that will cause normal lab values (CBC, Electrolytes) to be abnormal.
22. Know anatomical landmarks and common terms related to X-rays.
23. Define bronchoscopy and discuss its purpose.
24. Discuss the difference between a rigid bronchoscope and a flexible bronchoscope.
25. List the hazards of bronchoscopy.

Module II

Material Covered: ABG Assessment & Respiratory Failure

- Chapter 4 Arterial Blood Gas p 57-66
- Chapter 10 Respiratory Failure p 139 - 143

Assessments:

- Homework
- Quiz
- Test

Learning Outcomes:

1. Identify the normal & critical arterial & venous blood gas measurements.
2. Given an ABG result, interpret the acid base balance & oxygenation for an ABG sample.
3. Define Acute & Chronic.
4. Describe how acute changes on PaCO₂ affect pH and HCO₃ values.
5. Describe conditions needed to stimulate peripheral chemoreceptors to increase resp. rate?
6. Identify acute alveolar hyperventilation by listing ABG values and the most common cause.
7. Define acute ventilatory failure and list ABG values associated with acute ventilatory failure.
8. Identify the 2 reasons the anion gap is assessed in patients with metabolic acidosis.
9. Identify the most common cation and anion used to calculate the anion gap.
10. Define chronic vent failure and list ABG values associated with chronic ventilatory failure.
11. Identify & define 4 Major Common errors & causes associated with ABG measurements.
12. Define Respiratory Failure
13. Identify & define 6 major anatomic alterations of the lungs that can lead to respiratory failure.
14. Define the Respiratory Failure Type 1
15. Identify the respiratory disorders associated with Type 1 Hypoxemic Respiratory failure.
16. Identify the 3 primary pathophysiologic mechanisms of Hypoxemic Respiratory failure.
17. Define the hypercapnic respiratory failure Type 2 ventilatory failure.
18. Differentiate acute respiratory failure vs chronic respiratory failure.
19. Identify the 5 respiratory disorders associated with hypercapnic respiratory failure.
20. Identify & define 5 key clinical indicators of Hypercapnic Respiratory Failure.
21. Identify & define 5 key clinical indicators of Hypoxemic Respiratory Failure.

Module III

Material Covered: Obstructive Lung Diseases:

- Chapter 12 COPD p 170-176, 178-179, 186-193
 - Chronic Bronchitis p 178-186
 - Emphysema p 178-186
- Chapter 13 Asthma p 200-208, 211-216, 224,232

- Chapter 14 Bronchiectasis p 222-224, 232-233
- Chapter 15 Cystic Fibrosis p 236-240, 244-249

Assessments:

- Homework
- Quiz
- Test

Learning Outcomes:

1. Define COPD, chronic bronchitis, and emphysema
2. Define the COPD definition given by Global Initiative for Chronic Obstructive Lung Disease.
3. Identify the etiology and risk factors associated with COPD.
4. Identify the relationship between COPD and Alpha 1-Antitrypsin Deficiency
5. Identify cardiopulmonary clinical manifestations linked with chronic bronchitis & emphysema.
6. Define the BODE index and identify what it measures.
7. Identify the GOLD strategy, guidelines for the diagnosis, management & prevention of COPD.
8. Identify features distinguishing emphysema & chronic bronchitis (pink puffer vs blue bloater).
9. Identify the medications commonly used in the treatment and prevention of COPD.
10. Describe the role of national and international guidelines in the management of asthma.
11. Identify the etiology and risk factors associated with asthma.
12. Identify the cardiopulmonary clinical manifestations associated with asthma.
13. Identify the tools used to diagnose asthma and the challenges of diagnosing asthma.
14. Identify the GINA management and prevention strategy for asthma.
15. Identify the medications commonly used in the treatment and prevention of asthma.
16. Describe the anatomic alterations associated with bronchiectasis & the 3 Reid classifications.
17. Identify the etiology and risk factors associated with bronchiectasis.
18. Identify the strategy for the diagnosis, management and prevention of bronchiectasis.
19. Identify the medications commonly used in the treatment and prevention of bronchiectasis.
20. Describe the anatomic alterations associated with cystic fibrosis.
21. Identify the etiology and risk factors associated with cystic fibrosis.
22. Describe how the cystic fibrosis gene is inherited.
23. Identify the strategy for the diagnosis, management and prevention of cystic fibrosis.
24. Identify the medications commonly used in the treatment and prevention of cystic fibrosis.
25. Given a case scenario, identify the etiology, pathophysiology, clinical features and treatment plan for EACH of the disease states covered in this module.

Module IV

Material Covered: Pulmonary Diseases & Chest Trauma

- Chapter 16 Pneumonia p 252-261
- Chapter 18 Tuberculosis p 273-277
- Chapter 20 Pulmonary Edema p 293-295, 298-299
- Chapter 21 Pulmonary Emboli p 303-305, 311-312
- Chapter 22 Fail Chest p 320-321
- Chapter 23 Pneumothorax p 327-329 & 333

Assessments:

- Homework
- Quiz
- Test

Learning Outcomes:

1. Describe the anatomic alterations associated with pneumonia.
2. Identify the etiology and risk factors associated with pneumonia.

3. Identify the origin & pathogens associated with community and hospital acquired pneumonia.
4. Identify the cardiopulmonary clinical manifestations associated with pneumonia.
5. Identify the strategy for the diagnosis, management and prevention of pneumonia.
6. Identify the medications commonly used in the treatment and prevention of pneumonia.
7. Describe the anatomic alterations associated with tuberculosis.
8. Identify the etiology and risk factors associated with tuberculosis.
9. Identify the cardiopulmonary clinical manifestations associated with tuberculosis.
10. Identify the strategy for the diagnosis, management and prevention of tuberculosis.
11. Describe the anatomic alterations associated with pulmonary edema.
12. Define cardiogenic and non-cardiogenic pulmonary edema.
13. Identify the etiology and risk factors associated with pulmonary edema.
14. Identify the etiology and risk factors associated with pulmonary emboli.
15. Identify the strategy for the diagnosis, management and prevention of pulmonary emboli.
16. Describe the anatomic alterations associated with flail chest.
17. Identify the etiology and risk factors associated with flail chest.
18. Identify the strategy for management of flail chest.
19. Describe the anatomic alterations associated with pneumothorax.
20. Identify the etiology and risk factors associated with pneumothorax.
21. Identify the strategy for management of pneumothorax.
22. Given a case scenario, identify the etiology, pathophysiology, clinical features and treatment plan for EACH of the disease states covered in this module.

Module V

Material Covered: Important Pulmonary Topics

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|--------------------------------|--------------------|
| • Chapter 25 Kyphoscoliosis | p 345-347 & 351 |
| • Chapter 28 ARDS | p 395-397, 399 |
| • Chapter 29 Gillian Barre` | p 403-404, 406-406 |
| • Chapter 30 Myasthenia Gravis | p 411-412, 415-416 |
| • Chapter 43 Smoke Inhalation | p 542-544, 546-549 |
| • Chapter 44 Atelectasis | p 553-556 |

Assessments:

- Homework
- Quiz
- Test

Learning Outcomes:

1. Describe the anatomic alterations associated with scoliosis.
2. Identify the etiology and risk factors associated with scoliosis.
3. Identify the strategy for management of scoliosis.
4. Describe the anatomic alterations associated with ARDS
5. Identify the etiology and risk factors associated with ARDS
6. Identify the strategy for management of ARDS
7. Describe the anatomic alterations associated with Gillian Barre`
8. Identify the etiology and risk factors associated with Gillian Barre`
9. Identify the strategy for management of Gillian Barre`
10. Describe the anatomic alterations associated with Myasthenia Gravis
11. Identify the etiology and risk factors associated with Myasthenia Gravis
12. Identify the strategy for management of Myasthenia Gravis
13. Describe the anatomic alterations associated with smoke inhalation
14. Identify the etiology and risk factors associated with smoke inhalation

15. Identify the strategy for management of smoke inhalation
16. Describe the anatomic alterations associated with atelectasis.
17. Identify the etiology and risk factors associated with atelectasis.
18. Identify the strategy for management of atelectasis.
19. Given a case scenario, identify the etiology, pathophysiology, clinical features and treatment plan for EACH of the disease states covered in this module.

Part III: Grading and Assessment

EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS*

Students' performance will be assessed and the weight associated with the various measures/artifacts are listed below.

EVALUATION*

Homework/Quizzes/Projects	15%
Test	60%
Final Exam	25%
	100%

GRADING SYSTEM:

State the College's or departmental grading system as delineated in the Catalog. Please note the College adheres to a 10 point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below. You must have your Dean's approval if changes in the scale are made.

A grade of "C" or better must be achieved in all required respiratory care program courses for a student to progress through the program. A final grade of less than 75 is not passing in the Respiratory Care Program and does not meet the requirements for progression within the program. This policy is different than the Horry Georgetown Technical College Grading Policy.

GRADING SCALE:

100 - 90 =	A
89 - 80 =	B
79 - 75 =	C
74 - 69 =	D
68 - 0 =	F

LATE ASSIGNMENTS:

1. A maximum of one (1) scheduled exam may be made up at the discretion of the course instructor. Any subsequently missed exams will receive a grade of 0.
2. Makeup examinations will be taken in the testing center on campus or a location designated by the instructor.
3. A 10% overall deduction will be applied to the makeup examination score for missed examinations unless faculty are notified in advance (more than 12 hours) or medical documentation is provided.
4. Late Homework assignments will have a deduction of ten points of the total assignment grade.
5. Homework assignments will not be accepted after 5 days of the due date.
6. Quizzes are taken in class and cannot be made up if missed.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of

action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

Attendance for Face-to-Face Courses:

For a 15-week course (fall and spring) the allowed number of absences for a M only class is as follows: 3 absences are allowed regardless of reason. After the allowed number of misses, the student will be dropped from the course with a W or a WF.

For a 15-week course (fall and spring) the allowed number of absences for a MW class is as follows: 6 absences are allowed regardless of reason. After the allowed number of misses, the student will be dropped from the course with a W or a WF.

A tardy is given if the student arrives ten minutes after class starts or before class ends. Three tardies are equivalent to one absent.

For online and hybrid courses, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

Part V: Student Resources



The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

- 1. Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
- 2. On-line student success and academic support resources.**

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC

Grand Strand, 477-2113; and SSTC Georgetown, 520-1455 or go to the [Online Resource Center](#) to access on-demand resources any time.



Student Information Center: WaveNet Central (WNC)

WNC offers to all students the following **free** resources:

1. **Getting around HGTC:** General information and guidance for enrollment!
2. Use the [Online Resource Center \(ORC\)](#) for COMPASS support, technology education, and online tools.
3. **Drop-in technology support or scheduled training** in the Center or in class.
4. **In-person workshops, online tutorials and more services** are available.

Visit the WNC website: [Wavenet Central](#). Live Chat and Center locations are posted on the website. Or please call one of the following locations: WNC Conway, 349-5182; WNC Grand Strand, 477-2076; and WNC Georgetown, 520-1473.

Student Testing: (If course is offered in multiple format include this section, delete if only F2F sections are offered.)

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms

Further more tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through RPNOW, our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

Disability Services:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Beth Havens, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

Statement of Equal Opportunity/Non-Discrimination Statement

Horry-Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation in educational programs and/or activities.

Inquiries regarding the non-discrimination policies: Students and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs, Dr. Melissa Batten, VP Student Affairs, Title IX Coordinator, Building 1100, Room 107A, Conway Campus, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, Melissa.Batten@hgtc.edu. Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources, Jacquelyne Snyder, VP Human Resources, Section 504, Title II, and Title IX Coordinator, Building 200, Room 212A, Conway Campus, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, Jacquelyne.Snyder@hgtc.edu.

Title IX Requirements

All students (as well as other persons) at Horry-Georgetown Technical College are protected by Title IX—regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, or national origin—in all aspects of educational programs and activities. Any student, or other member of the college community, who believes that he/she is or has been a victim of sexual harassment or sexual violence may file a report with the college’s Chief Student Services Officer, campus law enforcement, or with the college’s Title IX Coordinator, or designee.

*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

<p>Inquiries regarding the non-discrimination policies:</p>	
<p>Student and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs.</p>	<p>Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources.</p>
<p>Dr. Melissa Batten, VP Student Affairs <i>Title IX Coordinator</i></p> <p>Building 1100, Room 107A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5228 Melissa.Batten@hgtc.edu</p>	<p>Jacquelyne Snyder, VP Human Resources <i>Section 504, Title II, and Title IX Coordinator</i></p> <p>Building 200, Room 212A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5212 Jacquelyne.Snyder@hgtc.edu</p>