

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Physical Therapist Assistant</u>
COURSE RUBRIC AND NUMBER	<u>PTHA 1321</u>
COURSE TITLE	<u>Pathophysiology for the PTA</u>
COURSE CREDIT HOURS	<u>3 3 : 1</u> Credits Lec Lab

I. Catalog Description

Studies the pathophysiology diseases/conditions encountered in physical therapy. A grade of “C” or better is required in this course to take the next course. **Prerequisites: BIOL 2401 AND BIOL 2402, AND HPRS 1206. Corequisite: SPCH 1321. (3:1). Lab fee. Professional Practice Insurance required.**

II. Course Objectives

A. Unit I. The APTA Practice Guide

1. List the four practice pattern categories identified in the Guide to Practice of Physical Therapy manual
2. Discuss the types of direct interventions provided by the physical therapy team.
3. Use the Guide to Practice of Physical Therapy to find impairments commonly associated with specific pathologies.

B. Unit II. Review of Cellular Biology and Pathology, Introduction to Pharmacology, Inflammation

1. Module A. Review of Cell Biology and Pathology

1. Review cell and list the three major regions of a cell.
2. Review structure and function of the major cellular structures.
3. Review cell adaptation
4. Describe the processes of atrophy, hypertrophy, hyperplasia, metaplasia, and dysplasia.
5. Describe cell injury and describe the cellular changes in reversible cell injury
6. Discuss the process of cellular aging.
7. Define apoptosis.
8. Define and describe the various forms of necrosis.

C. Unit III. Introduction to Pharmacology

1. Module A. Pharmacology of inflammation

1. Discuss the following processes in pharmacokinetics: absorption, distribution, metabolism, and elimination.

2. Explain the following processes of pharmacodynamics: Drug receptor interactions, agonist, antagonist, receptor sites, and mechanism of action.
 3. Differentiate between potency and efficacy.
 4. Discuss the aging process as it relates to pharmacokinetics and polypharmacy.
 5. Discuss the inflammatory process
 6. Discuss the differences within the various subgroups of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)
 7. Discuss how NSAIDs and glucocorticoids affect inflammation.
 8. Discuss the adverse effects of glucocorticoids.
 9. Discuss the effects of NSAIDs with other drugs.
2. Module B: Pharmacology of the Nervous System\
1. Describe the mechanism of action and the pharmacological and side effects of dopaminergic drugs.
 2. Discuss the mechanism of action and the pharmacological and side effects of anticholinergic drugs.
 3. Identify the drugs most commonly used in the treatment of Parkinson's disease.
 4. Identify the various forms of epilepsy.
 5. Identify the most common antiepileptic drugs and briefly describe their potential side effects.
 6. Discuss the difference between direct acting and centrally acting relaxants.
 7. Describe the effects of long-term use of antispasmodic drugs.
3. Module C. Pharmacology of the Autonomic Nervous System (ANS)
1. Compare the autonomic and somatic nervous systems relative to effectors, efferent pathways, and neurotransmitters released.
 2. Compare and contrast the general functions of the sympathetic and parasympathetic divisions.
 3. For the sympathetic and parasympathetic divisions, describe the location of preganglionic and postganglionic neurons.
 4. Define cholinergic and adrenergic fibers and give the location of the different types of cholinergic and adrenergic receptors.
 5. Identify the effects of the following groups of drugs: Muscarinic, anti-muscarinic, alpha agonists, alpha antagonists (blockers), beta agonists, beta antagonists (blockers).
 6. List the common side effects of cholinergic and sympathomimetic drugs.
4. Module D. Pharmacology of the Cardiovascular System
1. Discuss the pharmacological effects and side effects of ACE-inhibitors, beta blockers, calcium channels blockers, diuretics, and vasodilators.
 2. Discuss the pharmacological effects and side effects of the four types of antiarrhythmic drugs.
 3. Discuss the pharmacological effects and side effects of drugs used to treat occlusive vascular diseases and decreased blood flow.
5. Module E. Respiratory Pharmacology

1. Discuss the mechanism of action and the pharmacological and side effects of antitussives, decongestants, antihistamines, and mucolytic and expectorant agents.
 2. Discuss rationale for use, mechanism of action, and side effects of bronchodilator agents and corticosteroids in the treatment of respiratory diseases.
 6. Module F: Chemotherapy and Immunosuppressive Pharmacology
 1. Identify when immunosuppressive and antineoplastic drugs are used.
 2. Discuss the side effects of immunosuppressive and antineoplastic drugs.
 3. Differentiate between cell-cycle specific and cell-cycle nonspecific drugs.
 4. Define growth fraction and total cell kill.
 5. Discuss the mechanism of action of alkylating agents, antimetabolites, antineoplastic antibiotics, antineoplastic hormones, and interferon in the treatment of cancer.
 6. Discuss the benefits of combination therapy.
 7. Discuss the implications of antineoplastic and immunosuppressive drugs on rehabilitation.
- D. Unit IV . Inflammation, Healing, and Repair of Wounds
1. Module A: the integumentary system
 1. Describe the anatomy and histology of the skin. DACUM 12.4
 2. List and briefly describe the functions of the skin.
 3. Describe the etiology and pathogenesis of common skin infections. DACUM 12.4
 4. Describe how to determine the extent of a burn and differentiate first, second, and third degree burns.
 5. Describe the most common types of skin cancer.
 2. Module B: Inflammation processes
 1. Define inflammation and differentiate inflammation from edema.
 2. Describe the vascular and cellular phases of inflammation and relate these phases to the signs and symptoms of inflammation.
 3. Identify the chemical, physical, and biological causes of inflammation.
 4. Differentiate between acute and chronic inflammation.
 5. Differentiate between exudates and transudate and identify the components of each. DACUM 12.8
 6. Differentiate between localized and systemic inflammation.
 7. Discuss the characteristics of fibrinous, serous, purulent, ulcerative, pseudomembranous, and granulomatous types of inflammation. DACUM 12.8
 8. Identify and describe the characteristics of the three stages of dermal wound healing.
 9. Give the functions of myofibroblasts, angioblasts, and fibroblasts in the granulation tissue.
 10. Identify seven common factors that can affect wound healing.
- E. Unit V. Disorders of the Neuromuscular and Musculoskeletal Systems
1. Review the anatomy of the central and peripheral nervous systems.

2. Identify and discuss the pathogenesis of acquired and congenital neurologic, neuromuscular, and musculoskeletal diseases commonly treated in physical therapy.

F. Unit VI. Disorders of the Cardiovascular System

1. Module A. Fluid and Hemodynamic Disorders

1. Describe the distribution of fluid between the intracellular, vascular, and interstitial compartments and identify the factors regulating this distribution.
2. Define blood flow, blood pressure, and resistance and explain the relationships between these factors.
3. Define edema and discuss the possible mechanisms of edema.
4. Define and briefly discuss the pathophysiology and the main clinical and laboratory features of hyperemia, hemorrhage, embolism, infarction, and shock.
5. Describe the composition of whole blood and its functions.
6. Briefly discuss erythropoiesis
7. Define anemia.
8. Give the main types of anemias based on the morphological classifications.
9. Give the main types of anemias based on the etiologic or pathophysiological classification.
10. Define and briefly describe the main clinical and laboratory features of polycythemias, leukemias, lymphomas, infectious mononucleosis, and bleeding disorders.

2. Module B. Diseases of the Heart and Blood Vessels

1. Briefly describe the normal anatomy of the heart and blood vessels.
2. Describe the systemic and pulmonary circuits.
3. Name the components of the conduction system of the heart and trace the conduction system.
4. Draw a diagram of a normal electrocardiogram tracing, name the individual waves, and indicate what each represents.
5. Briefly discuss the pathophysiology, main clinical and laboratory features, and complications of the following cardiovascular disorders: Atrial septal defect, ventricular septal defects, Tetralogy of Fallot, coarctation of the aorta, atherosclerosis, hypertension, peripheral vascular disease, coronary heart diseases, rheumatic heart disease, infective endocarditis, myocarditis, pericarditis, congestive heart failure.

F. Unit VI.I Neoplasms, Immunopathologies, Chemotherapy, and Immunosuppressive Therapy

1. Module A. Neoplasia

1. Discuss tumor formation.
2. Differentiate between benign and malignant tumors.
3. Discuss common cancers treated in physical therapy.
4. Relate physical therapy intervention to cancer patients.

2. Module B. Immunopathologies

1. Identify and briefly describe common immunopathologies found in physical therapy.

G. Unit VIII. Respiratory Disorders

1. Module A. Respiratory Physiology and Pathology
 1. Briefly review the anatomy and the respiratory tree
 2. Briefly review the gross anatomy of the lungs and pleural coverings.
 3. Differentiate between anatomic dead space and physiological dead space.
 4. Define and compare the various lung volumes and capacities, Tidal Volume, Inspiratory Reserve Volume, Expiratory Reserve Volume, Residual Volume, Vital Capacity, Functional Reserve capacity, Forced Vital capacity, Total Lung capacity, Minute Ventilatory Volume, Forced Expiratory Volume.
 5. Discuss the changes in volumes in volumes and/or capacities occurring in some pulmonary diseases.
 6. Discuss the etiology, pathophysiology, manifestations, diagnosis, treatment, and prognosis of the following pathologies: Upper respiratory tract infections, pneumonia, chronic bronchitis, emphysema, asthma, COPD, Pneumoconiosis atelectasis, flail chest, pleurisy, pneumothorax, pulmonary embolism, pulmonary hypertension.
 7. Design exercises to strengthen muscles of the respiratory system.

H. Unit IX. Pathology of the Geriatric Population

1. Discuss the physiological changes that occur with aging.
2. Identify those drugs which can have an adverse effect on the Central Nervous System.
3. Discuss the physiologic and pharmacologic causes of postural hypotension.
4. Discuss the symptoms, causes, and treatment of stress-related diseases.
5. Discuss the pathogenesis of Alzheimer's disease.

III. THECB Learning Outcomes (WECM)

1. Describe the etiology, pathogenesis, signs/symptoms, and treatments of selected diseases/conditions.
2. Identify the impact of the pathologies in physical therapy.

IV. Evaluation

A. Grading Policy

1. The students final grade is determined based on a percentage assigned to specific sub-categories of work. The commonly used categories of work include: 1) Examinations (written and/or practical), 2) quizzes, 3) written homework (lab activities, online work sheets), and 4) projects/community service/ instructor required observations.
2. The specific percentages assigned to the sub-categories of work are typically 80-90% for examinations, 10% for quizzes and 10% for homework and/projects. However, students are directed to *Part 1 of the Syllabus: Instructor's Course Requirements* for the specific grading criteria for each sub-category and the final grade.
3. Graded work within in each sub-category is averaged and multiplied by the percentage applied to that subcategory. Thus a student who received a 90, 85 and 45 for a subcategory would have an average of 73.3. If that category was worth 20 percent of the final grade, then the student would receive a total of 14.6 points toward the final grade.
4. The final grade, is calculated based on 100% (100 points) and will be rounded to the nearest whole number. Example: $86.7 = 87$

5. Grading Scale:
The grading scale used the PTA program for all of its courses is as follows:
94-100 = A
87-93 = B
80-86 = C
73-79 = D
72 and below = F
 6. Final grades:
Students who fail to complete assigned work within each of the sub-categories will receive a final grade based on the summative calculations of each sub-category.
 7. Grading of late work: All course work is due on the date identified by the instructor. Late work may be accepted and or graded based on the discretion of the instructor. A student who submits assigned work late, may receive a zero for that work. This will affect the sub-category grade percentage, and may affect the final grade as well. Students are encouraged to submit assigned work on time. See Part I of the Syllabus: Instructors requirements for more details about the grading of late work.
 8. The "I" grade is assigned when the student has arranged with the instructor to postpone completion of the requirements of the course. To be eligible for an "I" the student must be passing the course. Under the institutional grading policy, the awarding of any "I" grade requires a contractual agreement between the student and faculty member to establish the requirements for the student to satisfactorily complete the course. The student must submit the request in writing to the instructor stating extenuating circumstances with supporting documents. (College procedure 7.04.02.18)
 9. Students who receive a grade of Incomplete in a course which is a prerequisite course for another PTHA course may not be able to register for the next PTHA course until the "I" grade is replaced by a letter grade.
- B. Progression within the program
- Students must receive a grade of "C" in all program courses and must remain in good academic standing with the college or its department to progress in the program. Students not meeting this criteria may be in-eligible for readmission.. Students are referred to program procedure titled *Guidelines for Progression and Readmission in the Physical Therapist Assistant*,
- C. Pre-assessment/Post-assessment/ Remediation
1. Students who at midterm are identified as failing a course will be formally counseled with a remediation plan.
 2. Some courses may require pre-assessment prior to enrollment in the course. Courses typically requiring pre-assessment include all Clinical/Practicum courses except for the first clinical course. See *Part I of the Syllabus : Instructor's Course Requirements* for specific information.
 3. Some courses may require post-assessment at the conclusion of each course, and may be in the form of a comprehensive practical exam. See *Part I of the Syllabus : Instructor's Course Requirements* for specific information.

D. Attendance

1. Students are expected to be prepared and present for each class/lab session.
2. Homework is due at the beginning of the class.
3. Students who are absent from class are responsible for all material.
4. Attendance will be taken for each lecture and lab class.
5. You are considered "late" after class is officially scheduled to begin.
6. Students are expected to contact the instructor prior to being absent by calling on our office phones and leaving a message or informing us in person prior to the expected absence.

E. Tardiness

1. The door will close at the beginning of class.
2. Students who are late will not be admitted to class until the first break.
3. Students who have informed the faculty, that they will be tardy, may be admitted into the classroom, at the instructors earliest convenience.

F. Writing Assignments/Homework/Projects

Students will be required to complete all assignments in order to successfully complete this course.

1. Homework is expected to be completed prior to class and presented to the instructor at the beginning of class.
2. All work is to be handed in on time and in a folder labeled with your name.
3. Late work may be accepted at the discretion of the instructor.
4. Late work may not necessarily receive full credit.

G. Exams

1. If a student must miss an exam, he/she must notify the instructor prior to the exam.
2. Failure to notify the instructor in advance that a student will be absent for the exam, **for any reason**, will result in a grade of "0" for that exam.
3. Make-up exams may be given at the discretion of the instructor. The make-up exam must be taken within the time frame stipulated by the instructor. Failure to take any make-up exam will result in a grade of "0."
4. Students who fail a unit exam will be redirected back to the particular unit or units for additional reading and homework assignments.
5. Students may not bring anything into the testing area other than a #2 pencil. Books, coats, book-bags, back-packs are to be placed neatly away from the testing area.
6. Students should take care of any personal needs prior to the beginning of the examination.
7. No cell phones or other forms of communication devices are allowed in the testing area during an examination.
8. Course Instructors are required to turn in all written exams to the PTAP Program Coordinator.

H. Practical Exams

1. Students will demonstrate competency on technical and communication skills in the lab practical.
2. Program policies applying to exams, applies to the lab practical exam.
3. Some practical exams may be scheduled out of ordinary class time and at a hospital or

clinical setting. Students will be required make necessary arrangements to be at all scheduled exams. The student will be required to attend the practical exam at the set location, date and time established by the instructor. Students are expected to abide by all program policies when in situations in which they represent EPCC and the PTA program.

4. The student is judged to be competent when able to perform components of data collection and components of interventions safely, correctly, effectively, and with knowledge of indications, contraindications, precautions and expected results of the interventions.
5. Each practical exam must be passed with a minimum score of 80% in order to have successfully completed that practical.
6. Practical exams may be offered at the discretion of the instructor. Student who fail a critical safety element will not be allowed a retake.
7. There will be no make-up exams for missed practical.
8. Any missed practical will receive a zero.
9. Course Instructors are required to turn in all completed practical exams to the PTAP Program Coordinator.

I. Student readiness/Skill Check off Sheets

1. Prior to the practical exam, students may be given student readiness/skill check off sheets. These sheets are designed to assist the student in demonstrating readiness for the practical exam. These sheets can be used in a peer-to-peer situation or by the instructor.
2. All check-off sheets must be signed by the lab instructor by the set date established.
3. Program policies applying to exams, applies to the process of skills check off as well..
4. The student is judged to be competent when able to perform components of data collection and components of interventions safely, correctly, effectively, and with knowledge of indications, contraindications, precautions, and expected results of the interventions
5. Lab Instructors are required to turn in all student readiness/check off sheets to the PTAP Program Coordinator.

J. Quizzes

1. No make-up quizzes will be given.
2. Students missing a quiz will receive a "zero", unless prior arrangements have been made with the instructor.

K. Presentations

1. Presentations will be done at the front of the class to an audience.
2. Students are expected to utilize appropriate media
3. All presentations will require a hard copy to the instructor and the remainder of the class.
4. Students must be professionally dressed for all formal presentations.
5. All visible tattoos must be covered.

L. Preparation for Class/lab

1. Students are expected to be prepared for class.
2. Being prepared means having completed the reading assignment covering the day's materials so that you are prepared to discuss the material or answer questions.
3. Assigned homework activities are expected to be completed.
4. Students qualify for an "unexcused absence" when they are not prepared for discussion, are considered delinquent, or incomplete in their homework.

M. Community Participation

Participation in physical therapy events is an important part of your professional training. Attendance at GEPD district meetings, fund-raising activities, and community awareness

activities is encouraged. To assist you in translating the hours you spend performing approved community service/ activities into a grade you can use the following:

- (1) Attendance at Greater El Paso District (GEPD) meetings=1 PT/meeting.
- (2) Volunteering on a GEPD committee = 4 Pts
- (3) Any other pre-approved volunteer work (e.g., Presentations out of class, HCOP tours, health fairs) *Instructor approval and designation of points required.*
- (4) Attendance at State or National conferences = 5 points
- (5) GEPD Fun Run = 4 points

Document of attendance is required.

SPTA Club activities do not apply.

All visible tattoos must be covered when the student is representing the program both on and off campus.

Community service requirements are specified in the *Instructor's Course Requirements*.

N. Dress Code for Lab

1. Students should arrive to lab dressed in the designated shirts and shorts. In addition, women are required to wear either a halter top or sports bra. Long hair should be tied back. Nails should be trimmed very short. Avoid jewelry, only a wedding band and non-dangling earrings may be worn.
2. Students not appropriately dressed for lab will be provided with a hospital gown.

O. Journals

1. Reflective journals may be required each semester and are specified in the Instructors Part 1 of the specific syllabus.
2. Reflective writing should a) include your observations and reflections about how you are learning what you are learning and b) a discussion of your successes and difficulties with your learning strategies.
3. Students will be expected to keep a journal on a weekly basis throughout the course.
4. The size of paper to be used is 8"x11" and should be kept in an 80-page spiral binder.
5. Journal entries should be a minimum of once a week and should be dated.
6. One line is allowed between entries. You should use the entire line, leaving **either** the left or right margin free but not both margins.
7. Please do not use "gel" paper for your journals.
8. These journals may be in the form of weekly email, or discussion boards on Blackboard.

The content of the journal itself will not be evaluated; however, it should focus on the criteria outline above.

All entries are confidential. Journals are yours to keep at the end of the semester. The grade on the journal will be specified in the *Instructor's Course Requirements*.

P. Electronic devices

All communication devices (cell phones, I-Pads) are not permitted in the classroom. They should be placed in silent mode until class is dismissed. See the Instructors requirements (Part 1 of the syllabus) for specific instructor policies.

Q. Children in the Classroom

The college has a policy on children in the classroom. Children are not generally permitted in the classroom.

R. Informed Consent

Students who are enrolled in this class may be asked to play the part of the patient, care-giver of the patient, or other role as defined by the situation during laboratory classes, practical exams, or other classroom experiences.

S. Privacy and Confidentiality

Students are expected to ensure that the privacy of their classmates, faculty, and classroom guests is maintained at all times. Students who have access to medical or personal information that by law is to remain confidential shall be required to maintain that confidentiality unless the person who owns the information releases that confidentiality.

T. Honors Credit

If you are participating in the Honors Program and wish to do a project for Honors credit, please see the instructor. Honor's projects are negotiated between the instructor and the student; they are completed in addition to regular course work assignments; you must complete the project according to the Honors Contract; and you must receive an "A" or "B" in the course.

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

PTAP PROGRAM: HONESTY POLICY

All students shall obey the law, show respect for properly constituted authority and observe correct standards of conduct. (Student Code of Conduct) Specifically, students are referred to the EPCC handbook entitled Student Code of Conduct, Section II: Student Responsibility, Subsection 5 on Academic Dishonesty **or newer versions of this document**. This handbook is available through Student Government and the Counseling Department. Additionally, students are referred to the section on “**Policies and Procedures**” in the **College Catalogue**. The College Catalogue is available from the Cashiers office.

To ensure instructor(s) quality education and equality to all students in the Health Occupations Programs, the following special conditions will apply during testing situations in addition to those outlined in the EPCC Student Code of Conduct:

1. The instructor(s) controls the option of seating arrangement, movement, leaving the room, and stopping an exam for violation of the honesty policy.
2. All books, papers, notebooks, and personal belongings will be placed at the front of the classroom or other designated area before entering a testing situation.
3. Any information found on, or in the immediate vicinity of the individual during a testing situation will be grounds for termination of the testing. A grade of zero will be recorded and averaged into the final grade.
4. Any verbal or nonverbal communication between students during a testing situation will be grounds for termination of the testing. A grade of zero will be recorded and averaged into the final grade.
5. Should a student need to communicate with the instructor, he or she should remain seated and raise his/her hand.
6. **Infractions of the EPCC Student Code of Conduct may be grounds for dismissal from the program.**

Adopted by the PTAP Faculty

3/16/90

Revisions

April 17, 1996 , May 11, 1998

Approved by provost: February 16, 1999

**EL PASO COMMUNITY COLLEGE
HEALTH OCCUPATIONS DIVISION**

CRITERIA FOR COURSE PURSUIT

In accordance with El Paso Community College procedures on “Course Pursuit” (See current El Paso Community College Catalogue and Student Handbook), The Health Occupations Division has set the following standards to establish guidelines for determining when a student has ceased to pursue the course objectives:

1. In order to pursue the course, the faculty expect the students to attend classes and clinical as scheduled. There are 64 minimum number of hours of instruction required to complete the course.
2. The Student will be able to make-up 0 hours of theory or clinical.
3. Tardiness is defined as being late to class.
4. The student must follow the standards established in the Health Occupations Student Handbook and the PTAP Program Addendum. The student is bound by the standards in this Handbook as evidenced by the return of a signed/dated acknowledgment sheet.
5. Where the student continues to pursue the course objectives but is receiving failing grades, he/she will remain eligible to complete the course, EXCEPT in instances where unsafe practice occurs (See Unsafe Practice Procedure in Health Occupations Student Handbook and PTAP Program Addendum).
6. The student must appear for examinations, presentations, or other required class activities and submit required papers, projects, and/or reports as identified in the course syllabus and calendar.
7. Failure of the student to follow the above will indicate that the student is no longer pursuing the objectives of the course and will result in faculty-initiated withdrawal.
8. Appeals: The student has the right to appeal the withdrawal in accordance with El Paso Community College grievance and reinstatement procedures (See current El Paso Community College Catalog and Student Handbook).

Revised: January 1998

Receipt of Syllabus Signature page

**I _____ acknowledge receipt of the syllabus for PTHA 1321.
Acknowledging receipt of this syllabus implies that I am responsible for the information contained
within its pages. I also acknowledge that changes may be made in this syllabus and that I will be
notified in a timely fashion.**

Student Signature and Date

Instructor Signature and Date

PTHA 1321 Pathophysiology

Students enrolled in this course will demonstrate competence in implementing the following selected components of interventions and/or data collection:

There are no skills competencies for this course.