

El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	<u>Medical Imaging Technology-Radiography</u>
COURSE RUBRIC AND NUMBER	<u>RADR 2431</u>
COURSE TITLE	<u>Advanced Radiographic Procedures</u>
COURSE CREDIT HOURS	<u>4 2 6</u> Credits Lec Lab

I. Catalog Description

Positioning and alignment of anatomic structures and equipment, evaluation of images for demonstration of anatomy and related pathology. A grade of "C" or better is required in this course to take the next course. **(2:6). Lab fee.**

II. Course Objectives

A. Unit I. Introduction to Sectional Anatomy

1. Identify all anatomical body planes
2. Identify body positions and body movements
3. Recognize external landmarks in relation to anatomical structures
4. Distinguish all body cavities and abdominal quadrants
5. Identify with the gray scale used in CT and MRI
6. Describe CT reformation techniques

B. Unit II. Sectional Anatomy of the Cranium and Facial Bones

Identify topographical features and anatomical characteristics of the calvarium and facial anatomy to include:

1. Skull bones
2. Paranasal sinuses
3. Facial bones
4. Orbits
5. Sutures
6. Foramina

C. Unit III. Sectional Anatomy of the Brain

Distinguish topographical features of the brain and calvarium to include:

1. Lobes of the brain
2. Ventricular system
3. Meninges
4. Structural anatomy of the brainstem
5. Systems within the brain
6. Vascular structures of the brain
7. CSF pathway

D. Unit IV. Sectional Anatomy of the Spine

Locate the following anatomical features:

1. Major vessels
2. Spine and central nervous system components
3. Peripheral nerves
4. Prominent bony and muscular anatomy
5. Ligamentous structures
6. Vascular structure components

E. Unit V. Sectional Anatomy of the Neck

Locate the following anatomical structures:

1. Vascular anatomy
2. Spine components and peripheral nerves
3. Thyroid gland
4. Structures of the digestive tract
5. Airway anatomical structures
6. Muscular anatomy

F. Unit VI. Sectional Anatomy of the Thorax

Locate the following features:

1. Major vessels
2. Spine and central nervous system components
3. Peripheral nerves
4. Prominent bony and muscular anatomy
5. Cardiac anatomy
6. Components of the airway and pulmonary system
7. Structures of the alimentary tract

G. Unit VII. Sectional Anatomy of the Abdomen

Locate the following features:

1. Vascular anatomy
2. Spine components and peripheral nerves
3. Organs of the hematopoietic system
4. Structures of the digestive tract
5. Hepatobiliary organs
6. Urinary system structures
7. Musculature

H. Unit VIII. Sectional Anatomy of the Pelvis

Locate the following features:

1. Vascular anatomy
2. Osseous anatomy
3. Musculature
4. Structures of the digestive tract
5. Nervous structures
6. Urinary tract
7. Pelvic organs and reproductive tract

I. Unit IX. Sectional Anatomy of the Upper Extremity

Locate the following features:

1. Bony structures of the upper limb articulations
2. Muscular structures of the upper limb articulations
3. Vascular structures of the upper extremities

J. Unit X. Sectional Anatomy of the Lower Extremity

Locate the following features:

1. Bony structures of the lower limb articulations
2. Muscular structures of the lower limb articulations
3. Vascular structures of the lower extremities

K. Unit XI. Introduction to Pathology

1. Define terminology associated with the study of pathology.
2. Discuss disease classifications.
3. Differentiate between structural and functional diseases.
4. Discuss exogenous and endogenous injury, major causes of each, and examples of each.

L. Unit XII. Specialized Imaging Techniques

1. Identify various image production techniques used on each of the medical modalities.
2. Recognize imaging features used by radiologists to identify abnormal findings on medical images.
3. Differentiate between different medical imaging protocols
4. Explain the basic theory behind specialized medical imaging

M. Unit XIII. Pathology of the Respiratory System

1. Describe the gross anatomy of the respiratory system.
2. Relate major manifestations of respiratory disease.
3. Discuss major pathological conditions of the respiratory tract in terms of etiology and structural changes.

N. Unit XIV. Pathology of the Skeletal System

1. Describe the formation of bone and the process of bone growth.
2. Recognize and give examples of
 - a. congenital and hereditary bone disorders/diseases
 - b. bone infections
 - c. metabolic bone diseases
 - d. fractures
 - e. nonneoplastic bone disorders
 - f. bone tumors

O. Unit XV. Pathology of the Gastrointestinal System

1. Describe the gross anatomy of the alimentary tract.
2. Relate major manifestations of alimentary tract disease.
3. Discuss major pathological conditions of the alimentary tract in terms of etiology and structural changes.

P. Unit XVI. Pathology of the Urinary System

1. Describe the gross anatomy of the urinary system.
2. Relate major manifestations of urinary tract disease.
3. Discuss major pathological conditions of the urinary tract in terms of etiology and structural changes.

Q. Unit XVII. Pathology of the Cardiovascular System

1. Describe the gross anatomy of the cardiovascular system.
2. Relate major manifestations of cardiovascular disease.
3. Discuss major pathological conditions of the cardiovascular system in terms of etiology and structural changes.

R. Unit XVIII. Pathology of the Nervous System

1. Describe the gross anatomy of the central nervous system.
2. Relate major manifestations of central nervous system disease.
3. Discuss major pathological conditions of the central nervous system in terms of etiology and structural changes.

S. Unit XIX. Pathology of the Hematopoietic System

1. Describe blood-forming components
2. Discuss pathological conditions manifested from blood related abnormalities.

T. Unit XX. Pathology of the Endocrine System

1. Describe anatomical structures of the endocrine system
2. Relate and describe major endocrine disorders as manifested by physical characteristics.
3. List physical symptoms observed in patients suffering from endocrine disorders

U. Unit XXI. Pathology of the Reproductive System

1. Describe the gross anatomy of the reproductive system.
2. Relate major manifestations of reproductive tract disease.
3. Discuss major pathological conditions of the reproductive tract in terms of etiology and structural changes.

V. Unit XXII. Miscellaneous Diseases

1. Identify various unusual metabolic diseases
2. Analyze medical images of congenital and hereditary diseases
3. Review some nutritional disorders
4. Recognize distinguishable characteristics for several congenital syndromes.

III. THECB Learning Outcomes (WECM)

Upon completing this course, the student will be able to:

1. Perform advanced level procedures in positioning.
2. Align anatomic structures and equipment.
3. Evaluate anatomical structures in medical images.
4. Identify pathological conditions in medical images.

IV. Evaluation

- A. Methods
1. Written assignments and quizzes
 2. Presentation / Research Paper
 3. Unit examinations
 4. Comprehensive final examination

B. Grading Scale

93	-	100	=	A
85	-	92	=	B
75	-	84	=	C
65	-	74	=	D
64 & below			=	F

A total final course grade of below C (i.e., less than 75%) is not acceptable for completion of this course.

- C. Final Grade Determination

The final grade calculation for this course is as follows:

Homework & Quizzes	20% toward final grade
Presentation / Research Paper	20% toward final grade
Unit Examinations	30% toward final grade
Comprehensive Final Examination	<u>30% toward final grade</u>
TOTAL	100%

V. Disability Statement (Americans 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.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.