El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Diagnostic Medical Sonography**
COURSE RUBRIC AND NUMBER	**DMSO 1210**
COURSE TITLE	**Introduction to Sonography**
COURSE CREDIT HOURS	**2 2 : 1** **Credits Lec Lab**

I. Catalog Description

Introduces the profession of sonography and the role of the sonographer. Emphasizes medical terminology, ethical/legal aspects, written and verbal communication, and professional issues relating to registry, accreditation, professional organizations and history of the profession. A grade of "C" or better is required in this course to take the next course. **(2:1). Lab fee.**

II. Course Objectives

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

A. Unit I. Program Guidelines

1. Discuss your responsibilities regarding
   a. Attendance
   b. Personal appearance
   c. Record keeping
   d. Academic achievement
2. Describe the Diagnostic Medical Sonography Program chain of command.
3. Relate the procedure for initiating a student grievance.
4. Distinguish between hospital and departmental regulations.

B. Unit II. The Ultrasound Field as a Profession

1. Discuss the history of ultrasound
2. Distinguish between licenser, certification and registration.
3. Define the following
   a. American Registry of Diagnostic Medical Sonographers
   b. Society of Diagnostic Medical Sonographers
   c. American Institute of Ultrasound Medicine
4. Explain continuing education and how it relates to the ARDMS.
5. Identify the requirements necessary to become registered and the organization that is responsible.

C. Unit III. Ultrasound Medical Terminology

1. Demonstrate general knowledge of the following terms associated with Obstetric Ultrasound examinations:

a. Crown Rump Length
b. Bi-Parietal Dimension
c. Occipital-frontal Dimension
d. Head Circumference
e. Femur Length
f. Fatal Lie
g. Cardiac Motion
h. Fetal Abdomen – Abdominal Circumference
i. Fetal spine
j. Maternal bladder
k. Placenta

2. Define the following terms associated with body planes:
   a. Mid-line
   b. Sagittal
   c. Transverse
   d. Coronal
3. Scanning Planes and Methods
   a. Explain the way ultrasound uses body or scanning planes to image the body.
   b. Define scanning planes and show how they divide the body.
   c. Define the anatomic areas of each scanning plane.
   d. Provide scanning techniques and methods.
   e. Define patient positions
   f. Provide surface landmarks used as scanning references.
   g. Know the two-dimensional anatomic areas appreciated on each scanning plane.
   h. Be familiar with the surface landmarks used as scanning references.
   i. Follow the survey steps and take the required images recommended in the scanning protocol chapters.
4. Demonstrate general knowledge of the following terms associated with Abdominal Ultrasound items.
   a. Major Abdominal Aorta Branches
   b. Location of liver and major anatomy (GB, lobes)
   c. Define the number of lobes within the liver.
   d. Describe the location of the following liver structures:
      1) Left Lobe
      2) Right Lobe
      3) Lateral Segments
      4) Medial Segments
      5) Caudate lobe
      6) (Quadrate) Medial Left Lobe
5. Identify the anatomical structures used to delineate the previous structures from one another.
   a. Location of pancreas
   b. Tributaries that combine to form the Portal Vein
6. Define the branches of the celiac axis.
7. Describe the paths of both the right renal artery and left renal artery from the aorta to the kidney.
8. Identify the tributaries of the Inferior Vena Cava.
9. Describe the location of the Inferior Vena Cava as compared to the abdominal aorta.
10. Identify the tributaries of the Portal Vein.
11. Describe the exact location of the following vessels
    a. Portal Vein
    b. Superior Mesenteric Vein
    c. Inferior Mesenteric Vein
    d. Splenic Vein
    e. Hepatic Veins
    f. Renal Veins

12. Compare the superior mesenteric artery to the superior mesenteric vein as far as location is concerned
13. Explain a routine procedure that should be employed in the examination of the following structures:
    a. Liver
    b. Gallbladder
    c. Biliary System
14. Discuss the correct patient preparation method(s) prior to ultrasonographic examination.
15. Identify the exact location of the pancreas.
16. Explain the correct patient preparation for examination of the pancreas through ultrasound.
17. Discuss new developments in ultrasound, such as MSK, musculoskeletal imaging.

D. Unit IV. Departmental Procedures

1. Distinguish between direct patient care, diagnostic and support services in a hospital.
2. Describe the processing of paperwork involved in compiling patient medical records.
3. Explain the necessity of maintaining permanent records, reports, and films and the means by which these are accomplished.
4. Send exam to PACS (Picture Archiving and Communication System).
5. Discuss the role of a policies and procedures manual.
6. Explain the rationale for implementing and maintaining a quality assurance program.
7. Describe how requests for sonography services are made and received.

E. Unit V. Fundamental Equipment and Instrumentation

1. Maintain ultrasound equipment on a daily basis.
2. Troubleshoot ultrasound equipment when needed.
3. Define the following terms associated with fundamental Ultrasound equipment and instrumentation:
    a. Time Gain Curve
    b. Overall Gain
    c. Linear Transducer
    d. Sector Transducer
    e. Curved Array Transducer
    f. Static Scanner
    g. Real-time Scanner
    h. Echogenicity
    i. Sonolucency
4. Recognize the following four (4) methods in which information can be displayed.
    a. A-mode
    b. B-mode
    c. M-mode
    d. B-Scan

F. Unit VI. Ethics, Professionalism, and Interpersonal Relationships

1. Define ethics.
2. Comply with all Joint Commission Standards.
3. Comply with HIPAA (Health Insurance Portability and Accountability Act) regulations.
4. Classify information regarding the patient, physician, and institutions as confidential or non-confidential.
5. Explain the medico legal implication of “off the record” results given to outside physician prior to official interpretation.
6. Define at least two areas, other than the previously mentioned areas, that medico legal implications might occur.

7. Discuss effective communication techniques.
8. Describe common problems that can occur in the communication process.
9. Give examples of verbal and nonverbal communication.
10. Explain the importance of personal space when communicating with others.
11. Demonstrate active listening skills.
12. Demonstrate the ability to instruct patients about imaging procedures.
13. Utilize chaperones when necessary.
14. Identify patient food and drug allergies.
15. Evaluate the role cultural diversity plays in the communication process and communicate effectively with patients from different cultures.
16. Identify common losses a patient may experiences while in the hospital.
17. Specify the stages of grieving and give one example of a common behavior in each.
18. Outline a dying patient's rights.
19. Describe common problems encountered when communicating with individuals with sensory alterations.
20. Demonstrate the use of various aids to assist in communicating with individuals who have sensory deficits.
21. Explain the importance of communicating with patients with trauma or who are in a state of altered consciousness.
22. Describe the factors to consider when communicating with individuals under the influence of chemicals.
23. Discuss the procedures for protecting patient modesty, privacy, and self-esteem.
24. Describe the sonographer's responsibility with regards to alleviating conditions in the hospital or the ultrasound department that may compromise the well being of the patient, visitors, or the employee.
25. Discuss effective and ineffective approaches to gaining patient cooperation.
26. Identify proper use of Social Media (I.E. Facebook, Twitter, etc.)

G. Unit VII. Body Mechanics, Patient Safety, and Routine Patient Car

1. Discuss the process of aging.
2. Identify the need for special care when dealing with the elderly patient.
3. List the four safety factors that must be considered when moving a patient.
4. Discuss the safety measures that must be taken when transferring patients from the hospital ward to the ultrasound department and back.
5. Explain how to prevent situations in an ultrasound department that might result in damage to the patient's skin.
6. List four signs indicating possible circulatory impairment that must be recognized by the sonographers.
7. Explain the maintenance of proper body alignment and balance in the following movements: reaching, stooping, pivot turn, lifting, and carrying.
8. Elaborate on the importance of providing basic care and comfort to the patient in areas such as, but not limited to:
    a. Patient transport and handling
    b. Principles of psychological support
    c. Patient care procedures

H. Unit VIII. Care of the Patient with Special Problems/Aseptic and Sterile Technique

1. Discuss the importance of maintaining the existing status of indwelling catheters, tubes, and other invasive patient devices.
2. Relate the role of isolation, aseptic, and sterile technique in preventing the spread of infection.
3. Demonstrate proper hand washing technique.
4. Demonstrate proper gloving, gowning, and isolation technique.

5. Recognize life threatening patient conditions and be able to initiate a course of action by:
   a. Recognizing symptoms of emergency conditions.
   b. Knowing emergency procedures and protocol for each facility.
   c. Keeping CPR certification current.
6. Recognize situations that are not life threatening but could, if alleviated, increase patient comfort.
7. Assist Radiologist in obtaining consent for invasive procedures.

I. Unit IX. Aseptic Importance in Ultrasound

1. Define medical asepsis, disinfection, and sterilization.
2. List four factors involved when pathogenic organisms are transferred from person to person.
3. State five examples of personal hygiene that help in preventing the spread of infection
4. Describe correct method of linen disposal using medical asepsis principles.
5. Define Standard Precautions.
6. Demonstrate steps used in discarding disposable equipment in the clinical areas.
7. Identify unusable, outdated equipment and supplies.

J. Unit X. AIDS – Acquired Immune Deficiency Syndrome

1. Define HIV.
2. Distinguish between the facts and the rumors concerning the AIDS disease.
3. Relate the methods of transmission and prevention of the AIDS virus.
4. Discuss the physical, emotional and psychological stresses to patients with the AIDS virus.
5. Discuss the role of the sonographer in dealing with AIDS patient.

K. Unit XI. Inter/Intradepartmental Relationships

1. Discuss effective communication techniques.
2. Establish the guidelines necessary to communicate and interact with the physicians and radiologists.
3. Apply the principles of interpersonal relationships to simulated clinical situations.
4. Discuss effective and ineffective approaches to gaining interdepartmental cooperation.
5. Describe effective and ineffective approaches to gaining intradepartmental cooperation, specifically with cooperative and uncooperative personnel.
6. Explain the importance of good teamwork within the department and within the hospital as a whole.

III. THECB Learning Outcomes (WECM)

1. Describe the historical development of ultrasound.
2. List related professional organizations.
3. Identify registry and lab accreditation requirements and process.
4. Discuss clinical practice guidelines for sonographers.
5. Explain medical, legal, and ethical aspects of the profession.

IV. Evaluation

A. Grading Scale

100 – 92 = A
91 – 83 = B
82 – 75 = C
74 – 67 = D
66 – 0 = F

No grade of less than "C" will be considered as successful completion of any professionally related (DMSO) course.

B. Final Grade Determination

Quizzes/Homework	15% of final grade
Lab Assignments	10% of final grade
Unit Examinations	40% of final grade
Final Examination	35% of final grade
	100%

C. Quizzes/Homework/Lab

Unannounced quizzes will be given at frequent intervals. An absence or tardiness on a day when an unannounced quiz is given will result in a grade of zero (0) being recorded for that quiz.

Homework or Lab assignments will not be accepted after their due date. Lab assignments will be clay vessel models, demonstration of ultrasound machine knobology, and students will be accountable for basic ultrasound landmarks on OB and abdominal scans. These assignments will be graded as part of the lab grade. An absence or tardiness on a day when a lab assignment is due will result in a grade of zero (0) being recorded for that lab.

D. Examinations

A written knowledge examination will be administered following the completion of units as outlined in the course calendar attached to this syllabus. In addition, a final comprehensive examination will be given at the end of the course. The format of the examinations will be multiple choices, true/false, matching, short answer, or any an examination missed because of an excused absence must be made up the same day combination of the preceding. There will be no retests given.

An examination missed because of an excused absence must be made up the same day that you return to class. An examination missed because of an unexcused absence may not be made up and you will receive a grade of zero (0). Unexcused tardiness on the day of an examination will result in a deduction of five (5) points from the grade earned on that examination.

E. Cheating

Any student caught cheating will have his/her exam withdrawn and given a zero (0) for that exam.

F. Attendance

Attendance in class means physical presence for the class or laboratory unless otherwise stated by the instructor. An absence will be considered excused if you inform me of your absence before the class begins. Each unexcused absence will result in five (5) points being deducted from your final course grade.

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.