Bossier Parish Community College
Master Syllabus

Course Prefix and Number: SONO 212 **Credit hours**: 2

Course Title: Obstetric Sonography

Course Prerequisites: Enrollment in the DMS program courses is limited to those students who have been selected and admitted to the professional phase of the program. Program courses are sequenced by semester and must be taken as a group each semester per program requirements and policies. Completion of SONO 203 required.

Textbook(s):
Required Textbooks: Diagnostic Medical Sonography Obstetrics and Gynecology: Stephenson & Dmitrevia 4th edition

Course Description:

Normal maternal changes and fetal development throughout gestation are reviewed. Lectures including embryonic and fetal development, measurements, and appearance. As well as normal fetal anatomy of the first, second and third trimesters. Includes study of relative lab values, symptoms and patient history. Scanning techniques and protocols are included.

Learning Outcomes:

A. Identify anatomy, anatomic variants, and sonographic appearances of normal maternal, embryonic, and fetal anatomic structures during the first, second, and third trimesters.

First trimester:
a) Gestational sac
b) Embryonic pole
c) Yolk sac
d) Early placenta
e) Fetal cardiac activity
f) Uterus
g) Cervix
h) Adnexa
i) Pelvic spaces
j) Multiple gestations

Second- and Third-trimester:
a) Intracranial anatomy
b) Face
c) Thoracic cavity
d) Heart
    (1) Position and size
    (2) Four-chamber view

(3) LVOT and RVOT views
(4) Three-vessel and three-vessel tracheal views

e) Abdomen and pelvis
f) Abdominal wall
g) Spine
h) Extremities
i) External genitalia
j) Amniotic fluid
k) Placenta
l) Umbilical cord
m) Fetal cardiac activity
n) Maternal cervix
o) Maternal adnexa
p) Multiple gestations

To achieve the learning outcomes, the student will or will be able to

- Describe preparation of the patient for an obstetric sonogram
- Identify the appropriate transducer for an examination
- Explain ultrasound safety and the basic premise of as low as reasonably achievable (ALARA)
- Discuss the safety of 2D, 3D, and Doppler imaging
- Discuss gamete formation, fertilization, and early development of the zygote and placenta development
- Recognize normal sonographic findings in first-trimester pregnancies
- Describe sonographic methods of determining gestational age in the first trimester
- Discuss the safe use of ultrasound during early pregnancy
- Describe the indications for diagnostic ultrasound in the first trimester
- Distinguish the sonographic findings of normal early pregnancy from those of early pregnancy failure, spontaneous abortion, and molar pregnancy
- Discuss the use of ultrasound to screen for chromosomal abnormalities
- Identify structural abnormalities in the first trimester
- Describe the mortality and morbidity rates for different types of ectopic pregnancy
- List the key risk factors for ectopic pregnancy
- Identify the clinical presentation of a patient with an ectopic pregnancy
- Discuss the sites of ectopic pregnancy
- Summarize the rates of ectopic pregnancy
- Explain the sonographic technical protocol for scanning a suspected ectopic pregnancy
- Describe the sonographic characteristics of an ectopic pregnancy
- Explain alternate diagnostic modalities and treatment options
- Recognize the correct level for obtaining standard biometric measurements
- Summarize the use of alternate dating methods such as humerus, forearm, lower leg, cerebellar, and ocular measurements

- Discuss the correct method for measuring fetal biometry
- Calculate estimated fetal weight
- List fetal ratios that help determine normal growth of the fetus
- Explain the embryonic development of the placenta and cord
- Identify the normal placenta, cord, uterus, and cervix
- Appraise the images for proper bladder filling in the second and third trimester
- Discuss the developmental variations in placental size, shape, and configuration
- Identify the classifications of placenta previa
- Explain the process of placental abruption and the associated risk factors
- List the placenta accreta types
- Name the various abnormalities of umbilical cord insertion
- Describe cystic and solid masses associated with the umbilical cord
- Explain embryonic development of the face and brain
- List the normal anatomic landmarks for biometry
- Differentiate the Arnold–Chiari malformation from the Dandy–Walker malformation
- Conduct an overview of facial abnormalities
- Classify cleft lip and palate defects
- Discuss embryology of the eye and leading orbital and periorbital anomalies
- Relate sonographic features to discussed face and brain anomalies
- Explain embryonic development of the neural tube
- Associate biochemical testing values to the risk of open and closed neural tube defects
- Relate sonographic features to discussed spinal defects
- Classify the different forms of spina bifida
- Recognize the effect on spinal development with a hemivertebrae or caudal regression syndrome
- Summarize the embryonic development of the heart
- Explain the differences in fetal and neonatal circulation
- Describe the sonographic techniques for the basic fetal echocardiographic examination
- List the five views used in the systematic examination of the fetal heart
- Describe uses of a 3D dataset in imaging the fetal heart
- Determine the presence of an arrhythmia from an M-mode tracing
- Recognize the sonographic appearance of normal chest anatomy
- Differentiate intrathorax pathologies
- Describe methods to use color Doppler to aid in identification of lung malformations
- Summarize causes and sonographic appearance of immune and nonimmune fetal hydrops
- Summarize the use of three-dimensional (3D) volumes in determining normal vs. abnormal anatomy
- Recognize the sonographic appearance of normal abdomen anatomy

- Describe methods to use color Doppler to aid in identification of ventral wall defects and Potter sequence renal malformations
- Explain the sonographic identification of omphalocele and gastroschisis
- Discuss bowel malformations of a midgut volvulus, duodenal atresia, and meconium ileus
- Identify the causes, sonographic appearance, and consequences of fetal hydronephrosis
- List congenital malformations of the genitourinary system
- Summarize the difference between renal agenesis, ectopic, horseshoe, and pelvic kidneys
- Discuss key sonographic findings for congenital genitourinary malformations

Course Requirements: **In order to pass the course, the student must earn 76% of the total possible points on the unit tests for the course and make a minimum score of 70% on the final exam. The student must achieve an overall course average of 76%. Grades will not be rounded. Failure to complete any of the course requirements listed below will result in an "F" for the course.**

The student will:

- Participate in/complete all classroom/laboratory experiences (such as discussion questions; quizzes; section test; case studies; concept mapping; DVD, video, web-site, or reading assignments).
- Be held responsible for the content of the entire course. The final exam is mandatory, will be cumulative, and worth 25% of the overall grade for the course.

Course Grading Scale:

93 –	100%=	A
85 –	92%=	B
76 –	84%=	C
68 –	75%=	D
0 –	67%=	F

Attendance Policy: The college attendance policy (for the classroom) is available at http://catalog.bpcc.edu/content.php?catoid=5&navoid=369#class-attendance

Course Fees: (if applicable)

Nondiscrimination Statement

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