

**BERGEN COMMUNITY COLLEGE
DIVISION OF HEALTH PROFESSIONS
DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM**

DMS 205 Obstetric and Gynecological Sonography

2 lect., 3 lab., 3 Credits (5 hours)

Prerequisites: BIO-109; DMS-102; DMS-113; DMS-115

Co-requisites: DMS-201; DMS-204; DMS-213; DMS-218

COURSE DESCRIPTION: Obstetric and Gynecological Sonography is a course designed to familiarize students with the patho-physiology of the female reproductive system, gynecological anomalies, and normal and abnormal first trimester pregnancy. Pelvic scanning protocol will also be discussed and sonographic interpretation will be utilized. Recognizing the normal and abnormal sonographic patterns in gynecology and first trimester pregnancy will be covered. Pathological and/or physiological data for the interpretation by physicians is stressed. The sonographic criteria for evaluation of the gravid uterus and fetus will be demonstrated.

COURSE OBJECTIVES:

- Identify normal and abnormal female pelvic anatomy using words, diagrams, and ultrasound scans.
- Identify normal and abnormal conditions of the female pelvis using words, diagrams, and ultrasound scans.
- Describe scan protocol with transabdominal and transvaginal scanning.
- Describe normal and abnormal developments occurring in the first trimester of pregnancy. Embryology will be stressed.
- Identify possible sites for, and sonographic importance of ectopic pregnancy.
- Evaluate fetal age in first trimester using sonographic measurements.
- Identify normal congenital pelvic anomalies on ultrasound images including 3-D imaging.
- Explain special procedures used when dealing with high-risk pregnancy in first trimester.
- Describe scanning procedure of an obstetrical exam, and evaluate proper technique performance.
- Describe abnormal sonographic appearances in first trimester pregnancy.
- Perform a limited pelvic ultrasound in accordance with the lab objectives specified.

TEXTBOOKS REQUIRED:

Hagan-Ansert, Sandra; Textbook of Diagnostic Ultrasonography; 7th edition; Mosby, St. Louis, Missouri, 2012.

ASSESSMENT: Knowledge of course objectives will be assessed by verbal questions prior to, and at the end of each class, quizzes, tests, and lab worksheets. Students will be required to perform a limited female pelvic ultrasound examination.

COURSE POLICIES:

- Laboratory scanning time CANNOT be made up.
- Missed quizzes must be made up in the Testing Center **within one week**.
- A physician's note must be submitted for an absence on a scheduled test day.
- For lab scanning, students are required to be prepared for a pelvic ultrasound exam (properly distended bladder). Failure to be prepared will cause your classmates to lose precious scanning time.

NUMERICAL GRADE CALCULATION

Quiz average	25%
Mid Term Exam	25%
Final exam	25%
Lab scanning exam	25%

FINAL GRADE CALCULATION

92 to 100	A
88 to 91.9	B+
83 to 87.9	B
79 to 82.9	C+
75 to 78.9	C
0 to 74.9	F

All grades are “absolute” and will not be rounded off.

COURSE OF STUDY (Subject to change)

- Lecture 1:** Normal anatomy of female pelvis
Pelvic Musculature
Pelvic Vasculature
- Assignment:** Hagan, pp.938-942 and 967-970
- Lab:** Longitudinal image of the uterus with length and AP measurement
Longitudinal image of endometrium, magnified and measured in AP
- Lecture 2:** Normal anatomy of the vagina, uterus, ovaries, and fallopian tubes
Positions of the uterus
Pelvic spaces or recesses
- Assignment:** Hagan, pp.943-949 and 953-954
- Lab:** Longitudinal image of right ovary with length and AP measurement
Longitudinal image of right adnexa
- Lecture 3:** **Quiz - Lectures 1 and 2**
Physiology of the menstrual cycle and endometrial changes
Sonographic evaluation of the female pelvis (transabdominal and transvaginal)
Congenital malformations of the uterus
- Assignment:** Hagan, pp. 949-965, 970-977, and 983
- Lab:** Longitudinal image of the left ovary with length and AP measurement
Longitudinal image of the left adnexa
- Lecture 4:** Pathology of the cervix, vagina, and uterus
Lost intrauterine contraceptive devices
- Assignment:** Hagan, pp 978-993 and 998-1000
- Lab:** Transverse image of the vagina
Transverse image of the cervix
- Lecture 5:** **Quiz – Lectures 3 and 4**
Pathology of the endometrium (endometritis, polyps, hyperplasia, CA, etc.)
Pathology of the adnexa (PID, TOA, endometriosis, endometrioma)
- Assignment:** Hagan, pp. 992-998, 1012-1013, and 1028-1038
- Lab:** Transverse image of the uterus with width measurement
- Lecture 6:** Anatomy of the ovaries and normal sonographic appearance
Sonographic evaluation of the ovaries
Benign adnexal/ovarian cysts
Ovarian torsion
- Assignment:** Hagan, pp. 1001-1014
- Lab:** Transverse image of right ovary (continued on next page)
Transverse image of right ovary with color Doppler

Transverse image of right ovary magnified and with width measurement

Lecture 7: **Quiz – Lectures 5 and 6**

Pathology of the ovaries

Assignment: Hagan, pp. 1014-1027

Lab: Transverse image of left ovary

Transverse image of left ovary with color Doppler

Transverse image of left ovary magnified and with width measurement

Lecture 8: **MID-TERM EXAM (Will NOT include Lecture #7)**

Assignment: none

Lab: Free scan time

Lecture 9: **Quiz – Lecture 7**

Indications for 1st trimester u/s exams

Normal 1st trimester pregnancy

Embryology

Determination of gestational age

Assignment: Hagan, pp 1049-1051, 1064-1079, and 1142-1146

Lab: Practice entire limited pelvic protocol

Lecture 10: Multiple gestations

Embryonic abnormalities

First trimester pelvic masses

Ectopic pregnancy

Assignment: Hagan, pp. 1080-1082 and 1088-1102

Lab: Practice entire limited pelvic protocol

Lecture 11: **Quiz – Lectures 8 and 9**

Abnormal pregnancies

First trimester bleeding

Indications for 2nd and 3rd trimester ultrasound exams

Fetal presentation

Assignment: Hagan, pp. 1049, 1051-1056, 1082-1087, and

Lab: Practice entire limited pelvic protocol

Lecture 12: Gestational age assessment: second and third trimesters

Assignment: Hagan, pp. 1146-1157

Lab: Practice entire limited pelvic protocol

Lecture 13: **Quiz – Lectures 10 and 11**

The placenta; embryogenesis

Sonographic evaluation of the normal placenta

Assignment: Hagan, pp. 1220-1222, and 1225-1228

Lab: Pelvic lab testing

Lecture 14: **FINAL EXAM**

Lab: Pelvic lab testing (if necessary)

Lecture 15: **Emergency make up day and distribution of grades**