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:

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (%)</th>
<th>Grade Range</th>
<th>Letter Grade</th>
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</thead>
<tbody>
<tr>
<td>Quiz average</td>
<td>25%</td>
<td>92 to 100</td>
<td>A</td>
</tr>
<tr>
<td>Mid Term Exam</td>
<td>25%</td>
<td>88 to 91.9</td>
<td>B+</td>
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<tr>
<td>Final exam</td>
<td>25%</td>
<td>83 to 87.9</td>
<td>B</td>
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<tr>
<td>Lab scanning exam</td>
<td>25%</td>
<td>79 to 82.9</td>
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<td>75 to 78.9</td>
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<td>0 to 74.9</td>
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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