



BROWARD COLLEGE COURSE OUTLINE

LAST REVIEW: 2008-2009 **NEXT REVIEW:** 2013-2014 **STATUS:** A
(i.e. 2003-2004) *(i.e. 2008-2009)* *(A, I, D)*

COURSE TITLE: Sonographic OB/GYN II

COMMON COURSE NUMBER: SON1122

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN
(per 16 week term)

CLOCK HOURS:
(Voc. Course ONLY)

Lecture: 48 Lab:
Clinic: Other:

PREREQUISITE(S): SON1100, SON1170, SON1111, SON1121, SON1211, SON1804

COREQUISITE(S): SON1112, SON1212, SON1215, SON1814

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 character smaximum):* The detection of anomalies, pathology, deviation from normal and the planes that must be sonographically imaged for accurate diagnosis is stressed

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area
General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area
General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

UNIT TITLES

1. Gynecological Pathology
2. Intrauterine Contraceptive Devices
3. Obstetrics
4. Fetal Period

ASSESSMENT:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes. **Quizzes, Midterm and Final Exam – all comprehensive. Attendance is required for successful completion**

**** Complete the following only if course is seeking general education status ****

GENERAL EDUCATION Competencies and Skills*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Speak and listen effectively	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: <i>(highlight in green ALL that apply)</i> (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

* General Education Competencies and Skills endorsed by '05-'06 General Education Task Force

Common Course Number: SON1122

UNITS

Unit 1 Gynecological Pathology

General Outcome:

- 1.0 The student shall:** demonstrate an understanding of correlating clinical, laboratory, sonographic, blood flow information and other data to identify and demonstrate gynecological pathological processes.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Discuss common pathology found in gynecology
- 1.2 Demonstrate knowledge of human anatomy, physiology, pathology and pathophysiology of the female reproductive organs
- 1.3 Demonstrate knowledge of sonographic and Doppler evaluation of vasculature and blood flow patterns in the normal and abnormal female pelvic structures
- 1.4 Explain sonographic evaluation of the female pelvis in the pathologic state
- 1.5 Define leiomyoma, its common sites, clinical symptoms and sonographic appearances
- 1.6 Describe the three types of benign neoplastic ovarian cysts and their sonographic appearance (mucinous, serous, teratoma)
- 1.7 Define pelvic inflammatory disease, including the words salpingitis and endometritis in the definition. List the common etiology of P.I.D. (STD's and Pyogenic) and the clinical symptoms.
- 1.8 Describe ultrasonic patterns of P.I.D. being able to differentiate classic TOA's pyosalpinx and hydrosalpinx
- 1.9 Define the nature of a pelvic mass on ultrasonic images as cystic, solid, or complex
- 1.10 Demonstrate knowledge of benign and malignant ovarian masses and their clinical manifestations
- 1.11 Define endometriosis and describe clinical manifestations and sonographic appearances of endometriomas (chocolate cyst)
- 1.12 Demonstrate knowledge of sonographic and clinical evidence of endometrial carcinoma
- 1.13 Identify Nabothian cysts on a sonogram and explain their significance, if any

- 1.14 Describe Meig's syndrome
- 1.15 Discuss malignant processes of the uterus
- 1.16 Characterize the attenuation of pelvic structures on ultrasonic images
- 1.17 Describe the borders of pelvic masses on ultrasonic images
- 1.18 Characterize pelvic ascites with respect to its location, nature and related bowel patterns
- 1.19 Demonstrate knowledge and understanding of related imaging, laboratory and testing procedures as they contribute to the clinical evaluation of disease and pathology
- 1.20 Integrate patient history and physical findings to determine appropriate area(s) of interest for obtaining diagnostic examinations
- 1.21 Demonstrate knowledge of normal and abnormal blood flow patterns related to the female pelvis structures
- 1.22 Recognize, identify, and appropriately document the sonographic appearance of gynecologic disease processes, pathology, and pathophysiology, taking into consideration the differential diagnosis and:
 - a. history and physical examination
 - b. related imaging, laboratory, and functional testing procedures
- 1.23 Recognize and identify abnormal sonographic patterns associated with the following categories of pathological processes:
 - a. iatrogenic
 - b. degenerative
 - c. inflammatory
 - d. traumatic
 - e. neoplastic
 - f. infectious
 - g. obstructive
 - h. congenital
 - i. metabolic
 - j. immunologic
- 1.24 Describe the role of sonography in infertility procedures
- 1.25 Describe Doppler applications associated with evaluation of gynecological pathology
- 1.26 Demonstrate knowledge and understanding of the role of the sonographer in performing interventional/invasive procedures
- 1.27 Recall the knowledge gained in Term I regarding pelvic anatomy, physiology, vasculature and blood flow associated with the female reproductive system and the diagnostic tests utilized to evaluate the female reproductive system.

Common Course Number: SON1122

UNITS

Unit 2 Intrauterine Contraceptive Devices:

General Outcome:

- 2.0 The student shall:** recognize I.U.C.D.'s by appearance and describe sonographic procedures associated with patients with IUCD's.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1** Describe the appearance of the following IUCD's (some still seen but no longer marketed)
- a. Lippes Loop (no longer marketed)
 - b. Copper 7 (no longer marketed)
 - c. Copper T (no longer marketed)
 - d. Saf-T-Coil (no longer marketed)
 - e. Progestasert
 - f. Para-gard
- 2.2** Explain the importance of variable gain studies in the ultrasonic imaging of IUCD's
- 2.3** Explain the difference between chemically inert and chemically active devices
- 2.4** Describe the "entrance-exit" echoes associated with some types of IUCD's
- 2.5** Describe the sonographic procedure associated with the location of an IUD
- 2.6** List the complications thought to be associated with IUCD's

Common Course Number: SON1112

UNITS

Unit 3 Obstetrics

General Outcome:

- 3.0 The student shall:** demonstrate an understanding of the pathophysiological processes associated with the female reproductive system

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1** Discuss common pathology found in obstetrics
- 3.2** Compare normal and abnormal states of embryology in the human as demonstrated by ultrasound
- 3.3** Describe clinical history and specific diagnostic tests to evaluate the following pathologies:
 - a. ectopic pregnancy
 - b. trophoblastic disease
 - c. missed abortion
- 3.4** Describe image criteria characteristic of the following pathologies:
 - a. ectopic pregnancy
 - b. embryonic death
 - c. anembryonic pregnancy
 - d. hydatidiform mole
- 3.5** Compare transabdominal scanning techniques with transvaginal scanning techniques in the embryonic stage, and relate the indications, advantages and disadvantages of each
- 3.6** Demonstrate knowledge and understanding of related image, laboratory and testing procedures as they contribute to the clinical evaluation of disease and pathology associated with pregnancy
- 3.7** Demonstrate knowledge of human physiology, pathology and pathophysiology associated with the obstetrical patient
- 3.8** Demonstrate knowledge of normal and abnormal blood flow related to structures in the obstetric patient
- 3.9** Demonstrate knowledge of Doppler applications in obstetric evaluation of maternal and fetal structures
- 3.10** Integrate patient history and physical findings to determine appropriate area(s) of interest for obtaining diagnostic examinations

- 3.11** Recognize, identify, and appropriately document the sonographic appearance of obstetric abnormalities, disease, pathology, and pathology, taking into consideration the:
- a. history and physical examination
 - b. related imaging, laboratory and functional testing procedures
 - c. differential diagnosis
- 3.12** Identify and recognize abnormal sonographic and/or Doppler patterns in pregnancy associated with:
- a. placenta
 - b. congenital/genetic anomalies
 - c. growth abnormalities
 - d. amniotic fluid
 - e. viability
 - f. multiple gestation
 - g. fetal monitoring
 - h. maternal factors
 - i. postpartum
 - j. fetal therapy
- 3.13** Demonstrate knowledge and understanding of the role of the sonographer in performing interventional/invasive procedures associated with maternal or fetal exams and care
- 3.14** Recall the knowledge gained in term I regarding all phases of fertilization, implantation, and other matters regarding obstetrics
- 3.15** Relate information from Term I to advanced knowledge gained in Term II regarding obstetrical patient pathology and pathophysiological processes

Common Course Number: SON1122

UNITS

Unit 4 Fetal Period

General Outcome:

- 4.0 The student shall:** demonstrate an understanding of normal and abnormal fetal development and identify normal and abnormal fetal ultrasound images.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 4.1** Discuss anatomy, physiology and pathology of the various stages of fetal development as related to ultrasound
- 4.2** Identify specific maternal and/or fetal diseases common to the gestational period
- 4.3** Compare the normal and pathologic appearance of the fetus
- 4.4** Identify on obstetrical images the following:
 - a. fetal edema
 - b. gross abnormalities
- 4.5** Discuss the image criteria characteristic of fetal death
- 4.6** Identify specific fetal lie and presentation
- 4.7** Explain the growth curve characteristics associated with intra-uterine growth restriction
- 4.8** Identify fetal head anatomy as seen on ultrasound images
- 4.9** Identify abnormal fetal head structures as seen on ultrasound images and describe the pathophysiology associated with them
- 4.10** Identify normal and abnormal fetal abdominal and pelvic anatomy
- 4.11** Recite the normal growth range of BPD in the second and third trimester
- 4.12** Relate the other parameters used to determine gestational age and evaluate normal growth vs. abnormal growth patterns
- 4.13** Define LGA, SGA and IUGR
- 4.14** Describe the sonographic appearances associated with fetal conditions which are incompatible with life. i.e., renal agenesis, anencephaly, thanatophoric dwarfism, etc.

- 4.15 Discuss anatomy, physiology and pathology of the placenta at all stages of development
- 4.16 Describe the ultrasonic criteria and clinical symptoms of a placenta previa
- 4.17 Describe the ultrasonic appearance and clinical symptoms of an abruption placenta
- 4.18 Define classifications of diabetes and complications in pregnancy
- 4.19 Describe the classic signs of pre-eclampsia and eclampsia and complications in pregnancy
- 4.20 Explain the Rh sensitization process in the mother and effects on the fetus
- 4.21 Describe the ultrasonic appearance of an Rh affected pregnancy
- 4.22 Identify polyhydramnios, oligohydramnios and common etiologies
- 4.23 Describe the procedure involved in localizing a pool of fluid in a second and third trimester amniocentesis
- 4.24 Explain the rationale for the performance of genetic amniocentesis by listing common referral reasons
- 4.25 Define an L/S ratio and the ratio thought to be a sign of fetal pulmonic maturity
- 4.26 Describe special procedures utilized when performing amniocentesis on twin pregnancies
- 4.27 Describe the abnormalities associated with the fetal chest
- 4.28 Describe the anomalies associated with the long bones
- 4.29 Identify on a sonogram, fetal anomalies associated with the head, chest, spine, abdomen, pelvis and extremities
- 4.30 Describe the role of Doppler techniques in assessing blood flow patterns in fetal, placental and umbilical cord structures.
- 4.31 Describe the biological effects *potential* or *possible* implications related to the higher intensities associated with pulsed wave Doppler, and the current recommendations for appropriate utilization of Doppler in the fetus
- 4.32 Recall the significance of elevated serum or amniotic fluid alpha-fetoprotein
- 4.33 Compare the transvaginal scanning technique to the transabdominal approach for the assessment of abnormalities during the fetal period. Relate the indications, advantages and disadvantages of each
- 4.34 Recall the knowledge gained in Term I regarding all phases of fertilization, embryological development and fetal development, and be able to relate that knowledge to the information gained in Term II

