



## Course Number and Title: DMS 215 OB/GYN Sonography II

**Campus Location:**

Georgetown

**Effective Date:**

2018-51

**Prerequisite:**

DMS 112

**Co-Requisites:**

none

**Course Credits and Hours:**

2.00 credits

2.00 lecture hours/week

1.00 lab hours/week

**Course Description:**

This course studies the reproductive organs of the female in the gravid state. Topics include the role of diagnostic medical sonography in the determination of fetal age and growth, fetal well-being, detection of anomalies, and obstetrical management.

**Required Text(s):**

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

**Additional Materials:**

Diagnostic Medical Sonography Program Student Handbook

Separate instructor handouts and assignments

**Schedule Type:**

Classroom Course

**Disclaimer:**

None

**Core Course Performance Objectives (CCPOs):**

1. Explain the principles of scanning technique in obstetric and gynecologic (OB/GYN) ultrasound. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
2. Examine and describe the sonographic appearance of structures in a normal state. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
3. Explain the techniques and criteria used in the assessment of fetal age and size. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
4. Examine and describe the sonographic appearance of structures in an abnormal state. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2)
5. Identify and describe common fetal anomalies. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
6. Explain the significance of multiple gestations. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
7. Explain the use of Doppler ultrasound in the assessment of fetal well-being. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
8. Explain the methodology of various invasive and non-invasive techniques in the assessment of the fetus. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)
9. Explain the effects of maternal disease on pregnancy. (CCC 1, 2, 3, 4, 5; PGC 1, 2, 3, 4)
10. Discuss the controversies in obstetric and gynecologic ultrasound. (CCC 1, 2, 3, 4, 5; PGC 1, 2, 3, 4)
11. Perform fetal evaluation in the first, second, and third trimesters. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

**Measurable Performance Objectives (MPOs):**

Upon completion of this course, the student will:

1. Explain the principles of scanning technique in obstetric and gynecologic (OB/GYN) ultrasound.
  1. Discuss the importance and benefit of using proper transducer selection and technique in sonographic OB/GYN examinations.
  2. Describe the accepted guidelines, scanning protocols for antepartum obstetrical and gynecological examinations.
  3. Discuss the professional responsibilities of the sonographer.
  4. Describe the process of patient preparation in the gynecological and obstetric examination, including the importance of obtaining the patient's medical history.
  5. Examine the principles of safety of ultrasound and the findings of various agencies relating to mammalian bio-effects.
2. Examine and describe the sonographic appearance of structures in a normal state.
  1. Examine sonographic appearance of the gravid uterus throughout the developing trimesters.

2. Examine the importance of a technical systematic approach in examining normal morphological structures of the fetus.
3. Discuss the sonographic examination of the placenta and umbilical cord.
3. Explain the techniques and criteria used in the assessment of fetal age and size.
  1. Discuss general scanning methodology with respect to accuracy and the value of multiple fetal measurement parameters.
  2. Describe measurement techniques in the first trimester:
    1. gestational sac diameter (GSD)
    2. crown-rump length (CRL)
  3. Describe measurement techniques in the second and third trimesters:
    1. biparietal diameter (BPD)
    2. transverse head circumference (THC)
    3. cephalic index (CI)
    4. abdominal circumference (AC)
    5. femoral length (FL)
    6. estimated fetal weight (EFW)
    7. fetal heart rate (FHR)
4. Examine and describe the sonographic appearance of structures in an abnormal state.
  1. Examine the abnormal clinical indications leading to serial examinations of the first trimester pregnancy.
  2. Define the parameters used in the diagnosis and continuing assessment of intrauterine growth retardation (IUGR).
  3. Discuss the incidence, range, and sequelae of gestational trophoblastic disease.
5. Identify and describe common fetal anomalies.
  1. Discuss the indications for sonographic evaluation of neural tube defects.
  2. Identify and describe the various central nervous system anomalies seen on ultrasound.
  3. Identify and describe the various abdominal and thoracic anomalies seen on ultrasound.
  4. Identify and describe the appearance of gastrointestinal anomalies seen on ultrasound.
  5. Identify and discuss the appearance of genitourinary anomalies seen on ultrasound.
  6. Identify and describe the appearance of skeletal anomalies seen on ultrasound.
  7. Identify and describe the anomalies of the fetal cardiovascular system seen on ultrasound.
6. Explain the significance of multiple gestations.
  1. Describe the incidence, major types, specific protocols, and increased risks relating to multiple gestations.
  2. Describe basic concepts of fertility management.
  3. Discuss technical pitfalls and determination of accurate fetal number.
7. Explain the use of Doppler ultrasound in the assessment of fetal well-being.
  1. Discuss the development and current data of bio-effects of Doppler ultrasound technique.
  2. Discuss wave form analysis of the Doppler signal.
  3. Contrast quantitative and qualitative Doppler indices.
  4. Discuss the Doppler clinical applications in obstetrical ultrasound.
  5. Discuss the efficacy of Doppler ultrasound during clinical application.
8. Explain the methodology of various invasive and non-invasive techniques in the assessment of the fetus.
  1. Examine the clinical significance of the criteria developed as an assessment tool in the fetal biophysical profile.
  2. Explain the changes in fetal movement over the duration of pregnancy.
  3. Discuss the relationship of the biophysical profile score to fetal well-being.
9. Explain the effects of maternal disease on pregnancy.
  1. Discuss the role of sonography in evaluating pregnancies complicated by maternal disease.
  2. Discuss the indications and clinical considerations for examination of the patient with a pelvic mass.
  3. Discuss the various entities and conditions that may be associated with pregnancy.
10. Discuss the controversies in obstetric and gynecologic ultrasound.
  1. Discuss routine versus selective scanning in terms of ultrasound.
  2. Discuss the ethical issues associated with obstetrical and gynecological ultrasound.
  3. Discuss education and competency in the delivery of diagnostic medical sonography.
11. Perform fetal evaluation in the first, second, and third trimesters.
  1. Demonstrate professional behavior and appropriate communication skills.
  2. Use appropriate instrumentation and transducer selection.
  3. Perform at a supervised, dependent level the requisite skills necessary to obtain required anatomical images and anatomical planes for measurement in the first trimester of crown-rump length (CRL), gestational sac, fetal heart rate, nuchal translucency, nasal bones, uterus and ovarian size, right and left adnexa.
  4. Perform at a supervised, dependent level the requisite skill necessary to obtain required anatomical images and anatomical planes for measurement in the second and third trimester including but not limited to bi-parietal diameter (BPD), head circumference (HC), abdominal circumference (AC), femur length, choroid plexus, lateral ventricle, cavum septum pellucidum, cerebellum, nuchal fold, cisterna magna, midline falx, fetal lie, placenta location and grading, cervical length, fetal heart rate, 4-chamber heart, umbilical cord insertion, 3-vessel cord, fetal spine, fetal kidneys, amniotic fluid index (AFI), fetal extremities, fetal diaphragm, fetal stomach, fetal bladder, and fetal gender.
  5. Recognize the required criteria for biophysical profile that is visible sonographically, including fetal breathing movement, fetal movement, fetal tone, and appropriate amniotic fluid levels.
  6. Produce written reports of findings using sonographic terminology.

**Evaluation Criteria/Policies:**

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

**Core Curriculum Competencies (CCCs are the competencies every graduate will develop):**

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

**Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):**

1. Graduates will demonstrate clinical competence by performing a full range of diagnostic medical sonography procedures on all patient populations pertaining to their learning concentration.
2. Graduates will professionally utilize verbal, nonverbal, and written communication skills in patient care, procedure intervention, and professional relationships.
3. Graduates will demonstrate professional growth and development by acting in a professional and ethical manner and comply with the professional scope of practice.
4. Graduates will integrate critical thinking and problem solving skills as expected of a healthcare professional.

**Disabilities Support Statement:**

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.