



Master Course Syllabus

OB/GYN Ultrasound I – DMS 2201

Purpose of Document

This document contains important information for transfer. It may be helpful for you to retain a copy for your records, along with the class specific syllabus. This document will be especially helpful if you decide to later change your course of study.

Pikes Peak State College and the Colorado Department of Higher Education have determined that graduates should have a broad range of learning skills as well as discipline related skills. Both types of skills are detailed below.

Course Description

Provides a systematic study of embryology, including development of the major organ systems, with correlation to sonographic imaging at all stages of gestation. Emphasizes normal female pelvic and early obstetric anatomy, physiology, and embryologic development, as visualized on ultrasound, and introduces basic OB measurements and documentation.

Credit Hours: 2

Contact Hours: 30

Required Course Learning Outcomes

1. Describe embryologic development of the conceptus and major organ systems and relate key milestones to expected sonographic findings throughout early gestation.
2. Identify normal sonographic anatomy of the female pelvis, including uterus, endometrium, cervix, ovaries, adnexa, pelvic musculature, and major ligaments.
3. Explain physiology of the menstrual cycle, ovulation, and early pregnancy and correlate these processes with characteristic ultrasound appearances and timing.
4. Perform and interpret basic obstetric measurements (e.g., mean sac diameter, crown-rump length) on still images or phantoms, according to accepted guidelines.
5. Recognize normal and common abnormal first-trimester sonographic findings, including early pregnancy failure and ectopic patterns.
6. Apply standard scanning planes, labeling, and documentation protocols for pelvic and first-trimester OB examinations.
7. Differentiate between normal variants and likely pathology of the female pelvis and first-trimester pregnancy using key sonographic characteristics.
8. Demonstrate professional communication and patient-care awareness related to OB/GYN sonography, including sensitivity to privacy and the sonographer's role.

Topical Outline

I. Course Orientation and Professional Context

- a. Role of the sonographer in OB/GYN imaging
- b. Overview of ARDMS OB/GYN content domains and practice guidelines
- c. Safety, ALARA principles, and biological effects
- II. Review of Pelvic Anatomy and Sonographic Principles
 - a. Pelvic bones, muscles, ligaments, and vasculature
 - b. Gross and sonographic anatomy of the uterus and ovaries
 - c. Transabdominal vs. transvaginal techniques
- III. Physiology of the Female Reproductive System
 - a. Menstrual cycle phases and hormonal control
 - b. Sonographic appearance across the cycle
 - c. Correlation of cycle phase with endometrial findings
- IV. Fundamentals of Embryology
 - a. Gametogenesis, fertilization, and zygote formation
 - b. Early cell division and implantation
 - c. Development of gestational sac, yolk sac, and early embryo
- V. First-Trimester Pregnancy: Normal Sonography
 - a. Intrauterine gestational sac milestones
 - b. Cardiac activity development
 - c. Gestational age assessment (MSD and CRL)
- VI. Embryologic Development of Major Organ Systems
 - a. Neural tube and CNS primordia
 - b. Early cardiovascular system and circulation
 - c. GI, GU, and musculoskeletal system primordia
- VII. Basic Obstetric Biometry and Documentation
 - a. Measurement standards for MSD and CRL
 - b. Introduction to second-trimester biometry concepts
 - c. Image optimization and labeling
- VIII. Introduction to First-Trimester Pathology
 - a. Sonographic features of early pregnancy failure
 - b. Patterns suggestive of ectopic pregnancy
 - c. Subchorionic hemorrhage and common early findings
- IX. Introduction to Gynecologic Pathology (Survey Level)
 - a. Uterine fibroids and adenomyosis overview
 - b. Common ovarian cysts and benign masses
 - c. Normal variants vs. suspicious findings
- X. Ethics, Communication, and Patient-Centered Care
 - a. Communicating in sensitive situations (pregnancy loss)
 - b. Scope of practice and cultural competence
 - c. Privacy in OB/GYN settings
- XI. Integration, Review, and Exam Preparation
 - a. Case-based image review: normal vs. abnormal
 - b. Correlating clinical data (β -hCG, LMP) with findings
 - c. Preparation for OB/GYN Ultrasound II and clinical rotations