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| **Course Credit:** | 1 Credit |
| **Time and Location:** | Thursday: Class 10:00-10:50pm  NURS Rm 120 |
| **Instructor:** | Chelsie Wheatley, BSRS, BSDMS, RT(R), RDMS, RVT |
| **Phone:** | 208-241-1599 or 208-282-4042 (Secretary, Alyssa) |

**Overview:** This course will cover the anatomy and advanced scanning procedures of the developing fetus during pregnancy. Additional information on anatomy, pathophysiology, sonographic theory, and sonographic technique will be covered. Emphasis is placed on pathology, various disease processes, and their sonographic appearance. Further instruction on the fetal echocardiography congenital diseases, fetal face and neck, fetal neural axis, fetal thorax, fetal abdominal wall, fetal abdomen, fetal urogenital system, and fetal skeleton will be given. The course will finish all requirements needed to be eligible to sit for the Obstetrics and Gynecology (OB/GYN) examination through the ARMDS. Activities structured follow the guidelines of the ARDMS Obstetrics and Gynecology (OB/GYN) Examination.

**Textbooks:** Hagen-Ansert, Sandra L., *Textbook of Diagnostic Sonography, Volume 2.* 8th Edition. St. Louis, Mo: Elsevier; 2018. ISBN 978-0-323-35375-5

**Method of Presentation:**  Lecture, PowerPoint, Handouts, Moodle Supplement, SonoSim

**Code of Ethics:** DMS 4406 adheres to the ISU Code of Conduct.  In particular, academic dishonesty, however small, creates a breach in academic integrity.  A student's participation in this course comes with the expectation that his or her work will be completed in full observance of the ISU Code of Student Conduct.

**Course Learning Objectives/Goals:** This course has been designed to prepare student sonographers for the responsibilities of sonographic imaging. The student will learn about the fetal heart congenital diseases, fetal face and neck, neural axis, thorax, anterior abdominal wall, abdomen, urogenital system, and skeleton. Ultimately, the students will gain a better understanding for OB sonography and obtaining quality ultrasound images. They will further their skills in the mastery of obstetric ultrasound by understanding normal vs pathologic findings. At the conclusion of this course, the students will demonstrate an understanding of the topics listed above.

**Course Learning Outcomes--Upon completion of this course, the students will be able to:**

* List the three factors that contribute to congenital heart disease
* Describe why the four-chamber view cannot rule out all forms of congenital heart disease
* Discuss the echocardiographic findings for septal defects, ventricular inflow and outflow tract disturbances, great vessel abnormalities, cardiac tumors, and complex cardiac abnormalities
* Discuss the basic embryology of the face
* Describe how to evaluate the fetal face and neck for normal features
* Describe the sonographic findings of abnormalities of the fetal face and neck
* Describe the embryology of the neural tube fetal brain development
* Discus the anomalies that can occur in the fetal head and spine
* Recognize the sonographic appearance of fetal head and spine anomalies
* Describe the development of the thoracic cavity
* List the normal sonographic features of the thorax and diaphragm
* Describe the development and consequences of pulmonary hypoplasia
* Differentiate between solid and cystic lesions of the lung
* Discuss the sonographic findings in a diaphragmatic hernia
* Describe the embryology of the abdominal wall
* Define and describe the anterior abdominal wall abnormalities discussed in this chapter
* List the sonographic findings for an omphalocele and for a gastroschisis
* Identify the fetal anomalies in pentalogy of Cantrell
* Explain the sonographic findings in a fetus with amniotic band syndrome
* Describe the development of the digestive system and list the unique features of the fetal abdomen
* Describe normal development of the stomach and the importance of its visualization
* Define abnormalities of the fetal gastrointestinal tract and hepatobiliary system and describe their sonographic findings
* Discuss the development of the urogenital and genital system
* Describe the sonographic appearance of the fetal kidneys and bladder
* Detail the complications of renal agenesis
* Describe the sonographic findings associated with abnormalities of the kidney
* Differentiate renal cystic disease
* Distinguish between different types of urinary obstruction
* Identify congenital malformations of the genital system
* Describe in detail the embryology of the fetal skeleton
* Describe the variety of musculoskeletal anomalies that can occur in the fetus
* Differentiate sonographically among the most common skeletal dysplasias
* List limb abnormalities and the anomalies that are associated with specific defects

**Academic Dishonesty Policy:**

Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated in this class and may result in suspension or dismissal from this course and from the program. Cases will also be referred to the Dean of Students for possible dismissal from the university.

Cheating includes, but is not limited to, (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or completing other assignments; or (3) the acquisition of tests or other academic materials belonging to the university faculty or staff without permission.

Plagiarism includes, but is not limited to, the use of, by paraphrase or direct quotation without correct recognition, the published or unpublished works of another person. The use of materials generated by agencies engaged in "selling" term papers is also plagiarism.

Many components of DMS 4406 are designed to be highly interactive.  Students are encouraged to take full advantage of the many resources available including Internet sites, handouts and workbooks, other textbooks and journals, faculty, and peers. This interactive collegial learning environment is conducive for life-long learning.

***What does this mean:***  I have allowed ‘printed material’ from the Web site to be available to the student.  This can present problems if not used properly.  Material from quizzes and tests should be used for your OWN study endeavors. Tests cannot be reviewed after they have been taken except in my presence. Failure to follow these instructions will result in a failure of the course.

***When students submit their efforts for grading, they are attesting that they have abided by these rules.***

**Classroom Procedure:**

1.  **Attendance:**  You are expected to attend class regularly.  It is your responsibility to maintain a level of attendance which will allow you to derive maximum benefit from the instruction.  Excessive absences (>10%) will result in a lower course grade if you are borderline between two grades.  Conversely, if you have good attendance and are border line between two grades, I will award the higher grade.

2.  **Grading Procedure:**

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| **Assessment Method** | **Percentage Value** |
| Test #1 = Chapters 36, 59-61 | 30% |
| Test #2 = Chapters 62-65 | 30% |
| Cumulative Final | 40% |
| Total | 100% |

**This grading Scale will be used:**

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| +/- System |  |
| 93-100% A | 73-76% C |
| 90-92% A- | 70-72% C- |
| 87-89% B+ | 67-69% D+ |
| 83-86% B | 63-66% D |
| 80-82% B- | 60-62% D- |
| 77-79% C+ | 59% Below F |

*Note: A grade of C or better is required in this course in order to receive a certificate from the Department of Radiographic Science.*

The minimum requirements to earn a passing grade are successful completion of all tests (70% minimum).  Tests will be a combination of either written or computer based.  Tests will be scheduled to be taken in a computer lab on campus.  The lab in the nursing building on the ground floor is the lab I try to schedule for tests; however, the Turner Lab is close to our classroom, and is the one I will try to schedule if the nursing building lab is not available. It is the student’s responsibility to know when and where tests are scheduled.  Dates are posted in the Web Course Calendar and reminders will be given in class.  Students may use their own wireless laptops if they have one if tests are given in class; otherwise, students are required to use a lab computer when testing.

3. **Computer Account:** All students are required to have an ISU student computer account.  There is no fee required for this account. Obtain the account at the Computer Center, which is located in the basement of the College of Business Building or in the Rendezvous Lab.

4.  **Make-up:** If you are unable to sit for an examination, you may request a make-up exam.  You must inform me that you will not be present for the examination **prior** to the scheduled time.  An additional 10% drop in the test grade will result if prior notification is not given and is not accepted by me prior to taking the test.  The highest grade you can receive for a make-up exam is 89% unless you provide me with an acceptable excuse. An acceptable excuse is defined **as very** sick; a death in the immediate family; some unforeseen circumstance that would prohibit you from taking the exam. The key is to communicate with me directly via email, phone, or in person. Do not speak to another faculty member or the department secretary. I’m very easy to catch with email, but make sure your email is received by me prior to the test deadline.

*In addition, it is a requirement to take all tests offered during the semester.  An incomplete will be issued for the class if a test is not taken.*

**Cell phone policy:** Cell phones should not be used in class. They should be place in silent or vibrating mode or turned off. Additionally receiving and retrieving text messages should not occur during class or in labs. Failure to follow this policy will result in a deduction of grade up to 10% at the discretion of the instructor. If you need to communicate to someone outside of the class in an emergency situation please inform the instructor so accommodations to this policy may be made.

**Disability Services:** Students with disabilities who wish to have accommodations provided by the University must self-identify with Disability Services (236-3599) in order to have accommodations provided. Information and applications are available in the Center and may be picked up in person or requested by telephone. The URL is <http://www.isu.edu/ada4isu/>