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# MEDICAL SONOGRAPHY EMPHASIS

## DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM

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**DEPARTMENT OF RADIOLOGIC SCIENCES**  
**DR. EZEKIEL R. DUMKE COLLEGE OF HEALTH PROFESSIONS**  
**WEBER STATE UNIVERSITY**  
**OGDEN, UTAH 84408-3925**

### FALL SEMESTER - First Year

RADT 3123 Sectional Anatomy .....	3
RADT 3143 Imaging Pathophysiology .....	3
RADT 3243 Patient Care and Assessment II 3	
DMS 4310 Abdominal Sonography .....	3
DMS 4320 Superficial Structure Sonography1	
DMS 4620 Medical Laboratory .....	1
Total Semester Credit Hours .....	<u>14</u>

### SPRING SEMESTER - First Year

RADT 3043 Medical Ethics and Law .....	3
RADT 3253 Patient Care and Assessment III3	
DMS 4110 Sonography Principles and	
Instrumentation .....	3
DMS 4330 Gynecologic Sonography.....	1
DMS 4340 Obstetric Sonography.....	3
DMS 4821 Medical Clinical I.....	3
Total Semester Credit Hours.....	<u>16</u>

#### ELECTIVES

RADT 3263 Diagnostic Services	
Pharmacology .....	3
RADT 3423 Federal Regulations.....	3
RADT 4833 Directed Readings & Research...3	

Department BS Degree Requirements:  
Major required = 30 Credit Hours  
Minor required = 18 Credit Hours  
Total Required = 48 Credit Hours

### SUMMER SEMESTER - First Year

RADT 4933 Research Methods .....	3
DMS SI4120 Quality Assurance .....	3
DMS 4230 Medical Sonography III.....	3
DMS 4801 Individualized Research .....	3
DMS 4822 Medical Clinical II .....	3
Total Semester Credit Hours...	<u>15</u>

#### ELECTIVES

RADT 4573 The Female Patient & Medical	
Imaging .....	3
RADT 4833 Directed Readings & Research .3	

### FALL SEMESTER - Second Year

RADT DV3003 Psycho-Social Medicine .....	3
RADT SI4943 Baccalaureate Thesis .....	3
DMS 4823 Medical Clinical III .....	3
DMS 4912 Medical Comprehensive Review 2	
Total Semester Credit Hours.....	<u>11</u>

#### ELECTIVES

RADT 3563 Managing Clinical Information... 3	
RADT 4203 Patient Education in Radiology . 3	
RADT 4803 Individual Research.....	1-3
DMS 4410 Vascular Sonography.....	2
DMS 4801 Individualized Research .....	1-3

Students completing the four-semester program will earn a major in Medical Sonography Emphasis and a minor in Advanced Radiologic Sciences.

# COURSE DESCRIPTIONS

## MEDICAL SONOGRAPHY EMPHASIS - DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM

### **RADT DV3003 PSYCHO-SOCIAL MEDICINE**

**3 Credit Hours**

Designed to prepare students to better understand their patient and the patient's family through comparison of diverse populations based on their value systems, cultural and ethic influences, communication styles, socio-economic influences, health risks and life stages. Study of factors that influence the interrelationships with patient and professional peers. Understanding multicultural diversity assists the student in providing better patient care.

### **RADT 3043 MEDICAL ETHICS AND LAW**

**3 Credit Hours**

Medical ethics and law and case studies in medical imaging and radiation therapy.

### **RADT 3123 SECTIONAL ANATOMY**

**3 Credit Hours**

Anatomical study of the body in the sagittal, transverse and coronal imaging planes.

### **RADT 3143 IMAGING PATHOPHYSIOLOGY**

**3 Credit Hours**

Imaging adaptations and alterations in anatomy and physiology with variation outside of the normal range.

### **RADT 3243 PATIENT CARE AND ASSESSMENT II**

**3 Credit Hours**

System analysis and advanced level of patient care, assessment and management in radiology.

### **RADT 3253 PATIENT CARE AND ASSESSMENT III**

**3 Credit Hours**

Intravenous therapy, patient care procedures and monitoring during imaging studies.

### **RADT 4933 RESEARCH METHODS**

**3 Credit Hours**

Apply research strategies in health care and clinical practice, obtain certificate for human subject research, formulate a research proposal, and complete an institutional review board application.

### **RADT SI4943 BACCALAUREATE THESIS**

**3 Credit Hours**

Research in the health professions utilizing the scientific inquiry method.

### **DMS 4110 SONOGRAPHY PRINCIPLES AND INSTRUMENTATION**

**3 Credit Hours**

Elementary principles, propagation through tissues, transducers, pulse echo principles and instruments, images, storage and display, Doppler, image features and artifacts, bioeffects and safety.

### **DMS SI4120 QUALITY ASSURANCE**

**3 Credit Hours**

Developing, analyzing and evaluating a quality assurance program.

### **DMS 4310 ABDOMINAL SONOGRAPHY I**

**3 Credit Hours**

Concepts in abdominal intraperitoneal and retroperitoneal sonographic scanning technique and protocol to produce and evaluate diagnostic images.

### **DMS 4220 SUPERFICIAL STRUCTURE SONOGRAPHY**

**1 Credit Hours**

Concepts in superficial structure sonographic scanning technique and protocol to produce and evaluate diagnostic images in the clinical setting.

### **DMS 4330 GYNECOLOGIC SONOGRAPHY**

**1 Credit Hours**

Concepts in gynecologic sonographic scanning technique and protocol to produce and evaluate diagnostic images in the clinical setting.

### **DMS 4340 OBSTETRIC SONOGRAPHY I**

**3 Credit Hours**

Concepts in obstetric sonographic scanning technique and protocol to produce and evaluate diagnostic images.

**DMS 4620 MEDICAL LABORATORY**  
**1 Credit Hours**  
Patient position and instrumentation, transducer selection and anatomic placement, scanning protocol, and image quality are practiced for medical sonographic examinations.

**DMS 4821 MEDICAL CLINICAL I**  
**3 Credit Hours**  
A minimum of 24 hours per week in an active diagnostic medical sonography department.

**DMS 4822 MEDICAL CLINICAL II**  
**3 Credit Hours**  
Continuation of DMS 4821.

**DMS 4823 MEDICAL CLINICAL III**  
**3 Credit Hours**  
Continuation of DMS 4822.

**DMS 4912 MEDICAL COMPREHENSIVE REVIEW**  
**2 Credit Hour**  
Review and requirements for advanced responsibilities of the medical sonographer.

**ELECTIVE COURSE OFFERINGS**  
Meet with your faculty advisor and develop an academic contract. Complete a minimum of 7 credit hours for a major and minor from approved department course offerings.

**RADT 3263 DIAGNOSTIC SERVICES**  
**PHARMACOLOGY**  
**3 Credit Hours**  
Concepts of pharmacology including modes of action, uses, modes of excretion effects, side effects and patient care required for specific pharmacologic agents.

**RADT 3423 FEDERAL REGULATIONS**  
**3 Credit Hours**  
Regulations governing health care, equipment and application of ionizing radiation.

**RADT 3563 MANAGING CLINICAL INFORMATION**  
**3 Credit Hours**  
Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.

**RADT 4203 PATIENT EDUCATION IN RADIOLOGY**  
**3 Credit Hours**  
Skills necessary to assess, plan and evaluate a variety of educational programs specific to radiology patients.

**RADT 4573 THE FEMALE PATIENT AND MEDICAL IMAGING**  
**3 Credit Hours**  
This course will familiarize the student to disease processes specific to the female patient and the imaging methods that may be used in diagnosis and treatment. The clinical pathways that are commonly used, involving all radiologic imaging modalities, will be explored. Students who enroll in this course must be certified by the American Registry of Radiologic Technologists.

**RADT 4803 INDIVIDUAL RESEARCH**  
**1–3 Credit Hours**  
Research projects developed for district, state, regional or national presentation.

**RADT 4833 DIRECTED READINGS AND RESEARCH**  
**3 Credit Hours**  
Synthesis and analysis of journal articles resulting in a research paper for the purpose of publication.

**DMS 4410 VASCULAR SONOGRAPHY I**  
**2 Credit Hours**  
Concepts in vascular sonographic scanning technique and protocol to produce and evaluate diagnostic images.

**DMS 4510 BREAST SONOGRAPHY**  
**1 Credit Hours**  
Concepts in breast sonographic scanning technique and protocol to produce and evaluate diagnostic images.

**DMS 4801 INDIVIDUALIZED RESEARCH**  
**1–3 Credit Hours**  
Contact with faculty advisor required.

**DMS 4921 WORKSHOPS, CONFERENCES, AND TELECOURSES**  
**1–3 Credit Hours**