WSU Five-Year Program Review
Self-Study

Description of Review Process:

A. Name and Affiliation of Program:

Name: Radiologic Sciences Program Cluster

Programs Conducted:
- Radiography
- Diagnostic Medical Sonography/Cardiac and Medical
- Radiation Therapy
- Nuclear Medicine
- Magnetic Resonance Imaging
- Computed Tomography
- Cardiac Interventional Technology
- Women’s imaging
- Advanced Radiography
- Radiology Assistant
- Masters of Science Radiologic Sciences

B. Review Team:

Donna Thaler-Long MSM RT ( R) ( M) (QM) FASRT Radiography Program Director Ball State University
Marlene Johnson M.Ed RT ( R) University of Utah Radiology Department, Technology Program Administrator
Ginger Griffin RT, Baptist Health Care, Clinical and compliance officer
Darin Day RT, Administrative Director of Medical Imaging Primary Children’s Medical Center
Stephanie Bossenberger MS, Professor and Department Chair Dental Hygiene, Review Team Chair

D. Date of Site Visit: Spring Semester, 2013
Dates have not been selected at the time of submission of self-study.
A. **Brief Introductory Statement**

The Weber State University Radiologic Sciences Program evolved from two hospital-based radiography programs that were conducted by St. Benedict’s Hospital and Dee Memorial Hospital. From 1967 to 1970, the hospital-based programs arranged to have students complete general education courses at Weber State College, while the professional courses were still being taught at the hospitals. In 1969, the Utah Board of Regents assigned the primary role for radiologic sciences to Weber State College. Beginning autumn quarter in 1970, the hospitals gave up sponsorship of the programs and Weber State College assumed responsibility of the radiography programs with all classes taught on campus. The first class of Weber State College graduates completed the program in the spring of 1973.

The Nuclear Medicine and Radiation Therapy programs were approved by the Utah Board of Regents in 1976 and the Diagnostic Medical Sonography Program was approved in 1980. As innovative technological imaging modalities were developed during the 1980s, additional programs in Computed Tomography, Magnetic Resonance Imaging, Cardiovascular-Interventional Technology and Advanced Radiography were added to the program cluster. An emphasis in Mammography was added in the early 1990s. More recently the Radiologist Assistant program was developed. Mammography was changed to Women’s Imaging and in 2009 the Masters of Sciences in Radiologic Sciences was approved.

During the early 1980s, the Utah Board of Regents approved the baccalaureate degree level in allied health sciences, which allowed the advanced radiography and the medical imaging specialty areas and radiation therapy to become an educational career ladder for technologists. Adding these advanced imaging areas to the program has proven to be beneficial to the medical community by producing highly-skilled health care workers throughout the state and allows graduates to pursue upward career mobility.

Due to campus-wide budget reductions in the mid-80s, the faculty were confronted with the possibility of discontinuing the advanced specialty modalities. Rather than discontinuing the programs and leaving the medical community without a manpower source, the faculty, with the permission of the dean and WSU administration, elected to move the programs to the Division of Continuing Education. The programs have been self-sustaining programs since that time.

**Outreach Program:**
The Weber State College Radiologic Sciences faculty was approached in 1978 to conduct a radiography program in Panguitch, UT in an effort to meet the manpower needs of the rural facility. Students were accepted into the Outreach program beginning autumn semester of 1979. Soon after, other rural hospitals in the state requested students for their facilities. In 1982, Dixie Medical Center in St. George and Valley View Hospital in Cedar City were added as clinical sites. The radiography program is designed to move into an area, educate and train students and when the need is met, the program can be moved to another site. The three main sites for the program are Price, St. George and Cedar City which provide qualified workers for the southern Utah areas and the Uintah Basin area. Locations where the radiography program has been conducted in rural areas are as follows:

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Kanab Panguitch Tooele
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Version Date: Oct 2011
In addition to the radiography program, Nuclear Medicine, Diagnostic Medical Sonography and Radiation Therapy programs have also been conducted at various rural sites as need dictates.

In an agreement between the faculty and the WSU administration in 1994, students at the St. George, Cedar City and Price, UT sites were included into the campus program as budget-related. The faculty agreed to maintain a minimum of three sites in the outreach program and the classes are considered as part of the faculty teaching load.

In 1992, the Utah State Board of Regents approved a proposal to incorporate clinical sites in surrounding states when Western Wyoming Community College in Rock Springs, WY requested that Weber State University assume responsibility for their radiography program. Permission granted by the Board of Regents allowed several clinical sites to be added. The program operates in the same manner as the Outreach program, meaning when the need is met, the program can be moved to a different site. The current sites are as follows:

- Evanston, WY
- Rawlins, WY
- Jackson Hole, WY
- Douglas, WY
- Cortez, CO
- Durango, CO
- Farmington, NM
- Montpelier, ID
- Riverton, WY
- Twin Falls, ID

In 1998, Weber State University assumed the management of a hospital-based program in cooperation with Intermountain Health Care-Utah Valley Regional Medical Center. This program is considered on-campus and budget-related. This is a shared financial agreement between WSU and Intermountain Health Care. The current sites are as follows:

- Provo, Utah
- Heber City, Utah
- Orem, Utah
- American Fork, Utah

The Department of Radiologic Sciences conducts programs in:

- Radiography
- Nuclear Medicine
- Mammography
- Radiology Assistant
- Diagnostic Medical Sonography
- Advanced Radiography
- Magnetic Resonance Imaging
- Cardiovascular-Interventional Technology
- Radiation Therapy
- Computed Tomography
B. Mission Statement

The mission statement for the Radiologic Sciences Program incorporates the philosophy of the program and is as follows.

The mission of the Weber State University Radiologic Sciences Program is to adhere to the mission and goals of the University and the Dumke College of Health Professions in serving the needs of the medical community and in assisting the students in the development of their potential as technologists and as human beings.

Goals stemming from the mission statement are:

The primary educational goal of the Radiologic Sciences Program is to use resources to equip students with the knowledge and skills needed to live effectively and to provide the knowledge, skills and judgment needed to render quality health care services. A second goal is to broaden the students’ knowledge within the professional discipline and to maintain professional competency through a desire to participate in life-long learning.

Objectives to assist in attaining the mission and goals are to:

1. Maintain curricula based on current practices and a competency-based clinical evaluation system.
2. Integrate the didactic and clinical educational components to promote effective learning.
3. Promote a sense of professionalism and a desire to learn through role-modeling, mentoring and teaching practices.
4. Instill an appreciation of racial, cultural and human diversity.
5. Advocate the value of human dignity and ethical conduct.

Mission Statement Consistency:
The Radiologic Sciences Program mission statement, goals and objectives are integral to the mission statement of Weber State University (WSU) and the Dumke College of Health Professions. For example, WSU is committed to offering both vocational and professional educational programs to prepare students for immediate employment or further study. The Radiologic Sciences Program cluster is based upon a career ladder concept which provides lateral and/or vertical career mobility; the curriculum is designed to introduce new concepts and technological advances in medical imaging and radiation therapy; transmission of values and learning in the affective domain are incorporated into the curriculum throughout the program to promote the maintenance of human dignity; critical or analytical thinking and writing are stimulated through classroom interactions, assignments, research and projects; problem-solving skills are refined in the clinical education setting, in the laboratories, as well as the classroom; students are encouraged to attend professional society meetings, lectures and cultural activities to expand their knowledge; and students are given projects which are designed to stimulate life-long education and self-development.
C. Curriculum

The curricula of the programs contain the content required by the national certification agencies. Students must complete all of the required courses in order to be eligible to sit for the certifying examinations. Courses within a program must be offered each year to enable the class of students currently enrolled to qualify for the national examinations. The following tables provides information about each program.

Features unique to the Radiologic Sciences Program cluster are the curriculum design which incorporates a selection of core courses within the upper division advanced radiography curriculum that students entering the advanced imaging programs must complete. This core curriculum efficiently utilizes instructor time and effectively implements the career ladder concept allowing students to become multi-skilled health care workers. Other unique features are the ability to offer the programs throughout the rural areas of the state as need dictates by utilizing an educational delivery system which allows students to remain in their own rural community while gaining an education; the integration of both the didactic and clinical components of the educational experience that reinforces learning; and utilization of faculty qualifications and expertise of being certified in more than one imaging modality.

The Department of Radiologic Sciences has six (6) courses that have been considered part of general education. Five (5) courses have be approved for Scientific Inquiry, Radiologic Technology 3443 Quality Assurance in Radiology, Radiologic Technology 4943 Baccalaureate Thesis, Radiation Therapy 4446 Quality Assurance, Diagnostic Medical Sonography 4143 Quality Assurance, and Nuclear Medicine 4333 Quality Assurance. One Course Radiologic Technology 3003 Psychosocial Medicine has been approved for Diversity Credit. With the current review of general education at Weber State University the SI and DV will be phased out according to student starting dates at the University.

Overview

The curricula of the programs contain the content required by the national certification agencies and meets or exceeds the national educational standards established by various professional organizations. Students must complete all of the required courses in order to be eligible to sit for the certifying examinations. Courses within a program must be offered each year to enable the class of students currently enrolled to qualify for the national examinations. The following table provides information about each program.

<table>
<thead>
<tr>
<th>Program</th>
<th>Type of Degree</th>
<th>General Education Courses/Major</th>
<th>Course Rotation by Year</th>
<th>WSU Online, Davis Campus, etc.</th>
<th>Unique Aspects of Curriculum</th>
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<tbody>
<tr>
<td>Program</td>
<td>Degree</td>
<td>Credits Required</td>
<td>Course Requirements</td>
<td>Use of Chi Tester and e-mail for student communication</td>
<td>Accommodates students who wish to pursue a degree or those who only wish to become certified; allows students to remain in their rural community.</td>
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<tr>
<td>Radiography</td>
<td>AAS</td>
<td>18-19 cr hrs of gen ed. vs. 50 cr hrs in major &amp; 25 cr hrs of elective courses</td>
<td>All courses must be taught annually so students will qualify for the certification exam</td>
<td>Use of Chi Tester and e-mail for student communication; taught at Price, Cedar City, St. George, Richfield, Uintah Basin and 4-Corners area, Provo IHC Campus</td>
<td>Accommodates students who wish a degree or those who only wish to become certified; allows students to remain in their rural community; also offered on the Navajo reservation.</td>
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<td>Diagnostic Medical Sonography</td>
<td>BS</td>
<td>42 cr hrs of gen ed. vs. 22 cr hrs in Medical-Vascular emphasis &amp; 19 in Cardiac emphasis with 15 cr hrs of support courses &amp; 7-9 in elective courses</td>
<td>All courses must be taught annually so students will qualify for the certification exam</td>
<td>Use of Chi Tester and e-mail for student communication; has been taught at St. George, Cedar City, Gunnison, Provo &amp; Cedar City</td>
<td>Accommodates students who wish to pursue a degree or those who only wish to become certified; allows students to remain in their rural community; offered on the Navajo reservation.</td>
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<td>BS</td>
<td>42 cr hrs of gen ed. vs. 29 cr hrs in major &amp; 12 cr hrs in support courses</td>
<td>All courses must be taught annually</td>
<td>Use of Chi Tester and e-mail for student communication; has been taught at Price, St. George, Vernal, Roosevelt, Provo &amp; Cedar City</td>
<td>Accommodates students who wish to pursue a degree or those who only wish to become certified; allows students to remain in their rural community.</td>
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<td>Program</td>
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<td>Radiation Therapy</td>
<td>BS</td>
<td>42 cr hrs of gen ed. vs. 36 cr hrs in major &amp; 12 cr hrs in support courses &amp; 12 cr hrs of elective courses</td>
<td>All courses must be taught annually</td>
<td>Use of WSU Online, Chi Tester and e-mail for student communication; taught at Provo, St. George and Salt Lake City</td>
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<td>BS</td>
<td>42 cr hrs of gen ed. vs. 14 cr hrs in major &amp; 35 in support courses</td>
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<td>Computed Tomography (CT)</td>
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<td>42 cr hrs of gen ed. vs. 11 cr hrs in major &amp; 35 in support courses</td>
<td>All courses must be taught annually</td>
<td>Use of Chi Tester &amp; e-mail for communication with students; taught at Price, Moab, Roosevelt, Vernal, Kanab, Provo and Salt Lake City</td>
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Curriculum Map

Table shows six competencies across the top/ each program down the left side and appropriate courses under each competency:

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<th>SIX departmental competencies used for direct measurements of learning in ALL programs in the Department</th>
<th>Patient Care and Education</th>
<th>Professio nal Development and Research</th>
<th>Biologic Effects and Safety</th>
<th>Clinical Competency and Medical Ethics</th>
<th>Procedures, Anatomy and Pathophysiology</th>
<th>Instrumentation and Quality Control</th>
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This grid will be utilized for all direct measures of learning. All courses are step lock curriculum and will be pre and post tested utilizing CHI tester.

Course titles, descriptions, and sequencing are contained on the following pages.

Radiography

**FALL SEMESTER - First Year**
RADT 1022 Introduction to Radiologic Technology .......................... 2
RADT 1303 Principles of Radiographic Exposure I ............................ 3
RADT 1502 Radiographic Anatomy & Positioning I ............................ 2
RADT 1601 Laboratory Experience .............................................. 2
RADT 2833 Directed Readings & Research ............................... 3
RADT 2861 Clinical Education .................................................. 3
RADT 2992 Seminar .................................................................. 1
Total Semester Credit Hours .......... 16

**SPRING SEMESTER - First Year**
RADT 1512 Radiographic Anatomy and Positioning II ...................... 3
RADT 1621 Laboratory Experience .............................................. 2
RADT 2043 Patient Care and Assessment I ............................... 2
RADT 2272 Basic Sectional Anatomy ......................................... 2
RADT 2403 Principles of Radiographic Exposure II ......................... 2
RADT 2833 Directed Readings & Research ............................... 3
RADT 2862 Clinical Education .................................................. 3
Total Semester Credit Hours .......... 17

**SUMMER SEMESTER - First Year**
RADT 1522 Radiographic Anatomy and Positioning III ................... 2
RADT 1641 Laboratory Experience .............................................. 1
RADT 2803 Independent Research .............................................. 1
RADT 2833 Directed Readings & Research ....................... 3
RADT 2863 Clinical Education .................................................. 3
RADT DV3003 Psycho-Social Medicine ..................................... 3
RADT 3043 Medical Ethics and Law ......................................... 3
Total Semester Credit Hours .......... 16

**FALL SEMESTER - Second Year**
RADT 1532 Radiographic Anatomy and Positioning IV ................... 3
RADT 1661 Laboratory Experience .............................................. 1
RADT 2833 Directed Readings & Research ....................... 3
RADT 2864 Clinical Education .................................................. 3
RADT 2942 Career Planning & New Technology .......................... 3
RADT 3403 Radiobiology & Health Physics ................................. 2
RADT 3463 Computerized Imaging ......................................... 3
Total Semester Credit Hours .......... 18

**SPRING SEMESTER - Second Year**
RADT 2865 Clinical Education .............................................. 2
RADT 2866 Final Competency Evaluation .................................. 2
RADT 2913 Comprehensive Review ........................................... 2
RADT 2833 Directed Readings & Research ....................... 3
RADT SI3443 Quality Assurance in Radiology ...................... 3
Total Semester Credit Hours .......... 12

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**COURSE DESCRIPTIONS - RADIOGRAPHY PROGRAM**

**RADT 1022 INTRODUCTION TO RADIOLOGIC TECHNOLOGY**

Program orientation, elementary radiation protection and basic darkroom procedures.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RADT 1022</td>
<td>Introduction to Radiologic Technology</td>
<td>2</td>
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</tbody>
</table>
### RADT 1303 **PRINCIPLES OF RADIOGRAPHIC EXPOSURE I**  
*3 Credit Hours*  
Theory of x-ray production; imaging production and radiographic equipment.

### RADT 1502 **RADIOGRAPHIC ANATOMY AND POSITIONING I**  
*2 Credit Hours*  
Terminology, pathology and radiographic positioning.

### RADT 1512 **RADIOGRAPHIC ANATOMY AND POSITIONING II**  
*3 Credit Hours*  
Continuation of RADT 1502. Prerequisite: RADT 1502.

### RADT 1522 **RADIOGRAPHIC ANATOMY AND POSITIONING III**  
*2 Credit Hours*  
Continuation of RADT 1512.

### RADT 1532 **RADIOGRAPHIC ANATOMY AND POSITIONING IV**  
*3 Credit Hours*  
Continuation of RADT 1522. Prerequisite: RADT 1522.

### RADT 1601 **LABORATORY EXPERIENCE**  
*2 Credit Hours*  
Patient positioning, darkroom experience and review of radiographic quality.

### RADT 1621 **LABORATORY EXPERIENCE**  
*2 Credit Hours*  
Continuation of RADT 1601. Prerequisite: RADT 1601.

### RADT 1641 **LABORATORY EXPERIENCE**  
*1 Credit Hour*  
Continuation of RADT 1621.

### RADT 1661 **LABORATORY EXPERIENCE**  
*1 Credit Hour*  
Continuation of RADT 1641.

### RADT 2043 **PATIENT CARE AND ASSESSMENT I**  
*2 Credit Hours*  
Patient care and management in radiology.

### RADT 2272 **BASIC SECTIONAL ANATOMY**

### RADT 2403 **PRINCIPLES OF RADIOGRAPHIC EXPOSURE II**  
*2 Credit Hours*  
Radiographic imaging, instrumentation, image production and factors affecting radiologic quality.

### RADT 2803 **INDEPENDENT RESEARCH**  
*1–3 Credit Hours*  
Individualized projects.

### RADT 2833 **DIRECTED READINGS AND RESEARCH**  
*1–3 Credit Hours*  
Selected readings and/or a research project on medical imaging procedures.

### RADT 2861 **CLINICAL EDUCATION**  
*3 Credit Hours*  
Experience gained in a health care facility. Prerequisite: Acceptance into the program.

### RADT 2862 **CLINICAL EDUCATION**  
*3 Credit Hours*  
Continuation of RADT 2861.

### RADT 2863 **CLINICAL EDUCATION**  
*3 Credit Hours*  
Continuation of RADT 2862.

### RADT 2864 **CLINICAL EDUCATION**  
*3 Credit Hours*  
Continuation of RADT 2863.

### RADT 2865 **CLINICAL EDUCATION**  
*2 Credit Hours*  
Continuation of RADT 2864.

### RADT 2866 **FINAL COMPETENCY EVALUATION**  
*2 Credit Hours*  
Demonstration of competency performing the procedures required by the certification agency.

### RADT 2913 **COMPREHENSIVE REVIEW**  
*2 Credit Hours*  
Review of didactic and clinical applications.
RADT 2921 Workshop, Conferences and Telecourses  
1–3 Credit Hours

RADT 2942 Career Planning and New Technology  
2 Credit Hours  
Assistance with career planning and an introduction to specialized imaging procedures and new and future imaging procedures.

RADT 2992 Seminar  
1–2 Credit Hours  
Patient case studies and critical care situations.

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 ethnic 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 3403 Radiobiology and Health Physics  
3 Credit Hours  
Effects of ionizing radiation on the human body, patient and personnel protection, exposure monitoring health physics and oncology.

RADT SI3443 Quality Assurance in Radiology  
3 Credit Hours  
Development of a quality assurance program and manual to meet accreditation requirements.

RADT 3463 Computerized Imaging  
3 Credit Hours  
Digital radiography, image acquisition, image processing and digital image management.
### SPECIALITIES

#### Advanced Rad Sci

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*Credit hours established with faculty advisor. **Requires consultation with faculty advisor.

☑ Indicates Semester Taught
COURSE DESCRIPTIONS

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 ethnic influences, communication styles, socio-economic influences, health risks and life stages. Study of factors that influence the interrelationships with patients 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 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 3403 Radiobiology and Health Physics
3 Credit Hours
Effects of ionizing radiation on the human body, patient and personnel protection, exposure monitoring health physics and oncology.

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

RADT SI3443 Quality Assurance in Radiology
3 Credit Hours
Development of a quality assurance program and manual to meet accreditation requirements.

RADT 3463 Computerized Imaging
3 Credit Hours
Digital radiography, image acquisition, image processing and digital image management.

RADT 3563 Managing Clinical Information
3 Credit Hours
Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.

RADT 3863 CLINICAL INTERNSHIP
2–6 Credit Hours
Experience in a radiology specialty area. Consent of instructor is required.

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 4213 SUPERVISION AND STAFF DEVELOPMENT
3 Credit Hours
Federal regulations, developing department protocol, designing departments personnel supervision and quality of care assessment.

RADT 4223 PROMOTIONAL STRATEGIES
3 Credit Hours
Assessment of needs, development and implementation of promotional strategies for Radiology Departments.

RADT 4233 FISCAL ANALYSIS IN RADIOLOGY
3 Credit Hours
Justification, acquisition and leasing of imaging equipment and accessories, staffing formulas and review of maintenance contracts.

RADT 4243 QUALITY MANAGEMENT IN RADIOLOGY
3 Credit Hours
Concepts and principles of quality management, collection and analysis of data.

RADT 4253 RISK MANAGEMENT
3 Credit Hours
Study of management of risk associated with the delivery of health care in clinical and non-clinical settings.

RADT 4233 CARDIOLOGY
3 Credit Hours
Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.

RADT 4403 IMAGING PATHOLOGY
3 Credit Hours
Radiographic presentation of pathological conditions, abnormalities and anomalies.

RADT 4413 FORENSIC RADIOLOGY
3 Credit Hours
This course provides a comprehensive study of medical imaging’s role in forensic medicine. Forensic Radiology is used to determine identity of remains, evaluate injury or cause of death and assist in the detection of abuse. Junior or Senior standing required.

RADT 4433 PACS ADMINISTRATION
3 Credit Hours
Digital imaging and communication standards, PACS administration, image quality, and emerging technology standards.

RADT 4443 IMAGING INFORMATICS
3 Credit Hours
Analyzing system needed, project management, quality improvement, bioinformatics, clinical informatics, and medical informatics.

RADT 4543 BONE DENSITOMETRY
3 Credit Hours
This course comprehensively covers the methods of bone density measurement (bone densitometry, DEXA), the pathogenesis of osteoporosis, quality management issues, therapies for osteoporosis and a review of additional analysis methods.
RADT 4573 THE FEMALE PATIENT & 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.

RADT 4863 CLINICAL INTERNSHIP 2–4 Credit Hours
Experience in a radiology specialty area. Consent of instructor is needed.

RADT 4922. WORKSHOP, CONFERENCES AND TELECOURSES

CARDIOVASCULAR-INTERVENTIONAL TECHNOLOGY

FALL SEMESTER
RADT 3043 Medical Ethics and Law .................. 3
RADT 3123 Sectional Anatomy ........................ 3
RADT 3143 Imaging Pathophysiology ............... 3
RADT 3563 Managing Clinical Information ....... 3
RADT 3863 Clinical Internship .............................. 3
RADT 4313 Visceral, Pelvic and Extremity Angiography .............................. 3

18
Total Semester Credit Hours........ 18

SPRING SEMESTER
RADT DV3003 Psycho-Social Medicine............. 3
RADT 3253 Patient Care and Assessment III .... 3
RADT 3263 Diagnostic Services Pharmacology 3
RADT 3863 Clinical Internship........................3
RADT 4343 Thoracic and Venous Procedures...3
RADT 4933 Research Methods........................3
Total Semester Credit Hours........ 18

SUMMER SEMESTER
RADT 4203 Patient Education in Radiology ......3
RADT 4303 Cardiology..................................3
RADT 4333 Head and Neck Angiography...........3
RADT 4863 Clinical Internship.......................3

RADT 4913 Comprehensive Review/CIT........... 2
RADT SI4943 Baccalaureate Thesis..................3
Total Semester Credit Hours....... 17

*Weber State University Radiography Program graduates who completed pre-requisite courses with a passing grade do not repeat the courses in the specialty program.

Students completing the program will earn a major in Cardiovascular-Interventional Technology Emphasis.

Department Bachelor of Science Degree Requirements:
- Major required = 30 Credit Hours
- Minor required = 18 Credit Hours
- Total Required = 48 Credit Hours

COURSE DESCRIPTIONS

RADT DV3003 Psycho-Social Medicine

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

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

RADT 3143 Imaging Pathophysiology

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

RADT 3253 Patient Care and Assessment III

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

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

RADT 3863 CLINICAL INTERNSHIP
2–6 Credit Hours
Experience in a radiology specialty area. Consent of instructor is required.

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 4303 CARDIOLOGY
3 Credit Hours
Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.

RADT 4313 VISCERAL, PELVIC AND EXTREMITY ANGIOGRAPHY
3 Credit Hours
Anatomy, pathology, protocols and interventional procedures of abdominal viscera, extremities and pelvis.

RADT 4333 HEAD AND NECK ANGIOGRAPHY
3 Credit Hours
Anatomy, pathology, protocols and interventional procedures of the aortic arch, brachiocephalic, thyroid and other facial and neck arteries.

RADT 4343 THORACIC AND VENOUS PROCEDURES
3 Credit Hours
Anatomy, pathology, protocols and interventional procedures of the venous and cardiac systems.

RADT 4863 CLINICAL INTERNSHIP
2–4 Credit Hours
Experience in a radiology specialty area. Consent of instructor is needed.

RADT 4913 COMPREHENSIVE REVIEW/CIT
2 Credit Hours
Preparation for advanced certification examination.

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.
Computed Tomography

**FALL SEMESTER**
- RADT 3043 Medical Ethics and Law .................. 3
- RADT 3123 Sectional Anatomy .......................... 3
- RADT 3143 Imaging Pathophysiology .................. 3
- RADT 3563 Managing Clinical Information ....... 3
- RADT 3863 Clinical Internship ...................... 3
- RADT 4663 CT Physics and Instrumentation ....... 3
  Total Semester Credit Hours ................ 18

**SPRING SEMESTER**
- RADT DV3003 Psycho-Social Medicine .............. 3
- RADT 3253 Patient Care and Assessment III ...... 3
- RADT 3403 Radiobiology and Health Physics .... 3
- RADT 3863 Clinical Internship ...................... 3
- RADT 4613 CT Imaging of the Torso and Limbs .... 3
- RADT 4933 Research Methods ..................... 3
  Elective
- RADT 4803 Individual Research ..................... 1
  Total Semester Credit Hours ........................ 16-18

**SUMMER SEMESTER**
- RADT 4203 Patient Education in Radiology ....... 3
- RADT 4303 Cardiology .................................. 3
- RADT 4653 CT Imaging of the Central Nervous System .......................... 3
- RADT 4863 Clinical Internship ...................... 3
- RADT 4911 Comprehensive Review/CT ........... 3
- RADT SI4943 Baccalaureate Thesis ................. 3
  Total Semester Credit Hours ........ 17

*Weber State University Radiography Program graduates who completed pre-requisite courses with a passing grade do not repeat the courses in the specialty program.

Students completing the program will earn a major in Computed Tomography Emphasis.

Department Bachelor of Science Degree Requirements:
- Major required = 30 Credit Hours
- Minor required = 18 Credit Hours
- Total Required = 48 Credit Hours

**COURSE DESCRIPTIONS**

**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 3253 Patient Care and Assessment III**
- 3 Credit Hours
  Intravenous therapy, patient care procedures and monitoring during imaging studies.

**RADT 3403 Radiobiology and Health Physics**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3563</td>
<td><strong>Managing Clinical Information</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Effects of ionizing radiation on the human body, patient and personnel protection, exposure monitoring health physics and oncology.</td>
<td></td>
</tr>
<tr>
<td>RADT 3863</td>
<td><strong>Clinical Internship</strong></td>
<td>2–6</td>
</tr>
<tr>
<td></td>
<td>Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.</td>
<td></td>
</tr>
<tr>
<td>RADT 4203</td>
<td><strong>Patient Education in Radiology</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Skills necessary to assess, plan and evaluate a variety of educational programs specific to radiology patients.</td>
<td></td>
</tr>
<tr>
<td>RADT 4303</td>
<td><strong>Cardiology</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.</td>
<td></td>
</tr>
<tr>
<td>RADT 4613</td>
<td><strong>Computed Tomography of the Torso and Limbs</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Sectional anatomy, pathology and imaging protocols of the abdominal viscera, pelvis, thorax and extremities.</td>
<td></td>
</tr>
<tr>
<td>RADT 4653</td>
<td><strong>Computed Tomography of the Central Nervous System</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Sectional anatomy, pathology and imaging protocols of the head, spine and central nervous system.</td>
<td></td>
</tr>
<tr>
<td>RADT 4663</td>
<td><strong>Computed Tomography Physics and Instrumentations</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Interactions of electromagnetic waves, instrumentation, imaging sequences and computer parameters of computerized tomography imaging.</td>
<td></td>
</tr>
<tr>
<td>RADT 4803</td>
<td><strong>Individual Research</strong></td>
<td>1–3</td>
</tr>
<tr>
<td></td>
<td>Research projects developed for district, state, regional or national presentation.</td>
<td></td>
</tr>
<tr>
<td>RADT 4863</td>
<td><strong>Clinical Internship</strong></td>
<td>2–4</td>
</tr>
<tr>
<td></td>
<td>Experience in a radiology specialty area. Consent of instructor is required.</td>
<td></td>
</tr>
<tr>
<td>RADT 4911</td>
<td><strong>Comprehensive Review/CT</strong></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Preparation for advanced certification examination.</td>
<td></td>
</tr>
<tr>
<td>RADT 4933</td>
<td><strong>Research Methods</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>RADT 4943</td>
<td><strong>Baccalaureate Thesis</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Research in the health professions utilizing the scientific inquiry method.</td>
<td></td>
</tr>
</tbody>
</table>
DMS/Cardiac

**FALL SEMESTER - First Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3123</td>
<td>Sectional Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>RADT 3143</td>
<td>Imaging Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>RADT 3243</td>
<td>Patient Care and Assessment II</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4210</td>
<td>Cardiac Sonography I</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4610</td>
<td>Cardiac Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Semester Credit Hours: **13**

**SPRING SEMESTER - First Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3043</td>
<td>Medical Ethics and Law</td>
<td>3</td>
</tr>
<tr>
<td>RADT 3253</td>
<td>Patient Care and Assessment III</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4110</td>
<td>Sonography Principles and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4220</td>
<td>Cardiac Sonography II</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4811</td>
<td>Cardiac Clinical I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Semester Credit Hours: **15**

**ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3263</td>
<td>Diagnostic Services Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>RADT 3423</td>
<td>Federal Regulations</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4833</td>
<td>Directed Readings and Research</td>
<td>3</td>
</tr>
</tbody>
</table>

**FALL SEMESTER - Second Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT DV3003</td>
<td>Psycho-Social Medicine</td>
<td>3</td>
</tr>
<tr>
<td>DMS SI4120</td>
<td>Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4230</td>
<td>Cardiac Sonography III</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4801</td>
<td>Individualized Research</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4812</td>
<td>Cardiac Clinical II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Semester Credit Hours: **10**

**ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3563</td>
<td>Managing Clinical Information</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4203</td>
<td>Patient Education in Radiology</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4803</td>
<td>Individual Research</td>
<td>1-3</td>
</tr>
<tr>
<td>DMS 4410</td>
<td>Vascular Sonography</td>
<td>2</td>
</tr>
<tr>
<td>DMS 4801</td>
<td>Individualized Research</td>
<td>1-3</td>
</tr>
</tbody>
</table>

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

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**SUMMER SEMESTER - First Year**

**COURSE DESCRIPTIONS**

**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 4210 CARDIAC SONOGRAPHY I**  
3 Credit Hours  
Concepts in cardiac sonographic scanning technique and protocol to produce and evaluate diagnostic images.

**DMS 4220 CARDIAC SONOGRAPHY II**  
3 Credit Hours  
Continuation of DMS 4210.

**DMS 4230 CARDIAC SONOGRAPHY III**  
3 Credit Hours  
Continuation of DMS 4220.

**DMS 4610 CARDIAC LABORATORY**  
1 Credit Hours  
Patient position and instrumentation, transducer selection and anatomic placement, scanning protocol, and image quality are practiced for cardiac sonographic examinations.

**DMS 4811 CARDIAC CLINICAL I**  
3 Credit Hours  
A minimum of 24 hours per week in an active diagnostic cardiac sonography department.

**DMS 4812 CARDIAC CLINICAL II**  
3 Credit Hours  
Continuation of DMS 4811.

**DMS 4813 CARDIAC CLINICAL III**  
3 Credit Hours  
Continuation of DMS 4812.

**DMS 4911 CARDIAC COMPREHENSIVE REVIEW**  
1 Credit Hour  
Review and requirements for advanced responsibilities of the cardiac 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 4801 Individualized Research**
1–3 Credit Hours
Contact with faculty advisor required.

**DMS 4921 Workshops, Conferences, and Telecourses**
1–3 Credit Hours

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**DMS/Medical**

**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 Sonography ... 1
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tr>
<td>DMS 4620</td>
<td>Medical Laboratory</td>
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<td>Total Semester Credit Hours</td>
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<tr>
<td><strong>SPRING SEMESTER - First Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RADT 3043</td>
<td>Medical Ethics and Law</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RADT 3253</td>
<td>Patient Care and Assessment III</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DMS 4110</td>
<td>Sonography Principles and Instrumentation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DMS 4330</td>
<td>Gynecologic Sonography</td>
<td>1</td>
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<tr>
<td>DMS 4340</td>
<td>Obstetric Sonography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DMS 4821</td>
<td>Medical Clinical I</td>
<td>3</td>
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</tr>
<tr>
<td>Total Semester Credit Hours</td>
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<tr>
<td><strong>ELECTIVES</strong></td>
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</tr>
<tr>
<td>RADT 3263</td>
<td>Diagnostic Services Pharmacology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RADT 3423</td>
<td>Federal Regulations</td>
<td>3</td>
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<tr>
<td>RADT 4833</td>
<td>Directed Readings &amp; Research</td>
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<tr>
<td>Department BS Degree Requirements:</td>
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<tr>
<td>Major required = 30 Credit Hours</td>
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<tr>
<td>Minor required = 18 Credit Hours</td>
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<td></td>
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<tr>
<td>Total Required = 48 Credit Hours</td>
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<tr>
<td><strong>SUMMER SEMESTER - First Year</strong></td>
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<td></td>
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</tr>
<tr>
<td>RADT 4933</td>
<td>Research Methods</td>
<td>3</td>
<td></td>
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<tr>
<td>DMS SI4120</td>
<td>Quality Assurance</td>
<td>3</td>
<td></td>
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<tr>
<td><strong>FALL SEMESTER - Second Year</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RADT DV3003</td>
<td>Psycho-Social Medicine</td>
<td>3</td>
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<tr>
<td>RADT SI4943</td>
<td>Baccalaureate Thesis</td>
<td>3</td>
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<tr>
<td>DMS 4823</td>
<td>Medical Clinical III</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DMS 4912</td>
<td>Medical Comprehensive Review</td>
<td>2</td>
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<td>Total Semester Credit Hours</td>
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<td></td>
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<td><strong>ELECTIVES</strong></td>
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</tr>
<tr>
<td>RADT 3563</td>
<td>Managing Clinical Information</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RADT 4203</td>
<td>Patient Education in Radiology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RADT 4803</td>
<td>Individual Research</td>
<td>1-3</td>
<td></td>
</tr>
<tr>
<td>DMS 4410</td>
<td>Vascular Sonography</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>DMS 4801</td>
<td>Individualized Research</td>
<td>1-3</td>
<td></td>
</tr>
</tbody>
</table>

**COURSE DESCRIPTIONS**

**RADT DV3003 Psycho-Social Medicine**

*3 Credit Hours*

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

**RADT 3043 Medical Ethics and Law**

*3 Credit Hours*

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

**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**

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**DMS/Vascular**

### Fall Semester

- RADT 3123 Sectional Anatomy ...................... 3
- RADT 3143 Imaging Pathophysiology ................ 3
- RADT 3243 Patient Care and Assessment II .......... 3
- DMS 4410 Vascular Sonography I ..................... 3
- DMS 4630 Vascular Laboratory .......................... 2
- DMS 4831 Vascular Clinical I ......................... 3
- Total Semester Credit Hours ....................... 15

**Electives**

- RADT DV3003 Psycho-Social Medicine ............... 3
- RADT 3563 Managing Clinical Information .......... 3
- RADT 4203 Patient Education in Radiology .......... 3
- RADT 4803 Individual Research ........................ 3
- DMS 4801 Individualized Research ................... 1-3

### Spring Semester

- RADT 3043 Medical Ethics and Law .................. 3
- RADT 3253 Patient Care and Assessment III ....... 3
- DMS 4110 Sonography Principles and Instrumentation .......................... 3
- DMS 4420 Vascular Sonography II .................... 3
- DMS 4832 Vascular Clinical II ......................... 3
- Total Semester Credit Hours ....................... 15

**Electives**

- RADT 3263 Diagnostic Services Pharmacology .... 3
- RADT 3423 Federal Regulations ....................... 3
- RADT 4833 Directed Readings and Research ....... 3
- RADT 4933 Research Methods .......................... 3
- DMS 4801 Individualized Research ................... 1-3

### Summer Semester

- DMS SI4120 Quality Assurance ....................... 3
- DMS 4833 Vascular Clinical III ....................... 3
- DMS 4801 Individualized Research ................... 3
- DMS 4913 Vascular Comprehensive Review ....... 1
- Total Semester Credit Hours ....................... 10

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28
Electives
RADT 4573 The Female Patient and Medical Imaging ................................................. 3
RADT 4833 Directed Readings and Research ................................................................. 3
RADT SI4943 Baccalaureate Thesis ................................................................. 3

Department Bachelor of Science Degree Requirements:
Major required = 30 Credit Hours
Minor required = 18 Credit Hours
Total Required = 48 Credit Hours

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

Courses required for a major or minor in the Department of Radiologic Sciences:
RADT 4933 Research Methods................................................................. 3
RADT SI4943 Baccalaureate Thesis ......................................................... 3

Recommended course meeting Diversity Requirement:
RADT DV3003 Psycho-Social Medicine ................. 3

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**COURSE DESCRIPTIONS**

**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.

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

**DMS 4420 VASCULAR SONOGRAPHY II**
3 Credit Hours
Continuation of DMS 4410.

**DMS 4630 VASCULAR LABORATORY**
1 Credit Hours
Patient position and instrumentation, transducer selection and anatomic placement, scanning protocol, and image quality are practiced for vascular sonographic examinations.

**DMS 4831 VASCULAR CLINICAL I**
3 Credit Hours
A minimum of 24 hours per week in an active diagnostic vascular sonography department.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS 4832</td>
<td>VASCULAR CLINICAL II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Continuation of DMS 4831.</td>
<td></td>
</tr>
<tr>
<td>DMS 4833</td>
<td>VASCULAR CLINICAL III</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Continuation of DMS 4832.</td>
<td></td>
</tr>
<tr>
<td>DMS 4913</td>
<td>VASCULAR COMPREHENSIVE REVIEW</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Review and requirements for advanced responsibilities of the vascular sonographer.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ELECTIVE COURSE OFFERINGS</td>
<td></td>
</tr>
<tr>
<td>RADT DV3003</td>
<td>PSYCHO-SOCIAL MEDICINE</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>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 sand professional peers. Understanding multicultural diversity assists the student in providing better patient care.</td>
<td></td>
</tr>
<tr>
<td>RADT 3263</td>
<td>DIAGNOSTIC SERVICES PHARMACOLOGY</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Concepts of pharmacology including modes of action, uses, modes of excretion effects, side effects and patient care required for specific pharmacologic agents.</td>
<td></td>
</tr>
<tr>
<td>RADT 3423</td>
<td>FEDERAL REGULATIONS</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Regulations governing health care, equipment and application of ionizing radiation.</td>
<td></td>
</tr>
<tr>
<td>RADT 3563</td>
<td>MANAGING CLINICAL INFORMATION</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.</td>
<td></td>
</tr>
<tr>
<td>RADT 4203</td>
<td>PATIENT EDUCATION IN RADIOLOGY</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Skills necessary to assess, plan and evaluate a variety of educational programs specific to radiology patients.</td>
<td></td>
</tr>
<tr>
<td>RADT 4573</td>
<td>THE FEMALE PATIENT AND MEDICAL IMAGING</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>RADT 4803</td>
<td>INDIVIDUAL RESEARCH</td>
<td>1–3</td>
</tr>
<tr>
<td></td>
<td>Research projects developed for district, state, regional or national presentation.</td>
<td></td>
</tr>
<tr>
<td>RADT 4833</td>
<td>DIRECTED READINGS AND RESEARCH</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Synthesis and analysis of journal articles resulting in a research paper for the purpose of publication.</td>
<td></td>
</tr>
<tr>
<td>RADT 4933</td>
<td>RESEARCH METHODS</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>RADT 4943</td>
<td>BACCALAUREATE THESIS</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Research in the health professions utilizing the scientific inquiry method.</td>
<td></td>
</tr>
<tr>
<td>DMS 4801</td>
<td>INDIVIDUALIZED RESEARCH</td>
<td>1–3</td>
</tr>
<tr>
<td></td>
<td>Contact with faculty advisor required.</td>
<td></td>
</tr>
<tr>
<td>DMS 4921</td>
<td>WORKSHOPS, CONFERENCES, AND TELECOURSES</td>
<td>1–3</td>
</tr>
</tbody>
</table>
(Mammography is included in Women’s Imaging)

**Magnetic Resonance Imaging**

**Fall Semester**
- RADT 3043 Medical Ethics and Law ..........................3
- RADT 3123 Sectional Anatomy ..............................3
- RADT 3143 Imaging Pathophysiology ......................3
- RADT 3563 Managing Clinical Information .............3
- RADT 3863 Clinical Internship ............................3
- RADT 4603 MRI Physics and Instrumentation ..3
Total Semester Credit Hours ..........................18

**Spring Semester**
- RADT DV3003 Psycho-Social Medicine ..................3
- RADT 3253 Patient Care and Assessment III .......3
- RADT 3863 Clinical Internship ............................3
- RADT 4623 Advanced MRI Procedures and Safety ..................................................3
- RADT 4643 MRI Imaging of the Torso and Limbs ..........3
- RADT 4933 Research Methods ..............................3
Total Semester Credit Hours ..........................18

**Summer Semester**
- RADT 4203 Patient Education in Radiology ..........3
- RADT 4303 Cardiology .................................................3
- RADT 4633 MRI Imaging of the Central Nervous System ........................................3
- RADT 4863 Clinical Internship ............................3
- RADT 4912 Comprehensive Review/MRI ..........2
- RADT SI4943 Baccalaureate Thesis ....................3
Total Semester Credit Hours ..........................17

*Weber State University Radiography Program graduates who completed pre-requisite courses with a passing grade do not repeat the courses in the specialty program.

Students completing the program will earn a major in Magnetic Resonance Imaging Emphasis.

Department Bachelor of Science Degree Requirements:
- Major required = 30 Credit Hours
- Minor required = 18 Credit Hours
- Total Required = 48 Credit Hours

**Course Descriptions**

**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 sand 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 3253 Patient Care and Assessment III**  
3 Credit Hours  
Intravenous therapy, patient care procedures and monitoring during imaging studies.

**RADT 3563 Managing Clinical Information**  
3 Credit Hours  
Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.

**RADT 3863 Clinical Internship**  
2–6 Credit Hours  
Experience in a radiology specialty area. Consent of instructor is required.

**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 4303 Cardiology**  
3 Credit Hours  
Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.

**RADT 4603 Magnetic Resonance Imaging Physics and Instrumentation**  
3 Credit Hours  
Physical principles and theories of magnetic resonance, instrumentation, imaging sequences and methods in normal and abnormal tissue, and computer parameters of magnetic resonance.

**RADT 4623 Advanced MRI Procedures and Safety**  
3 Credit Hours  
Evaluation of organ function and diagnosis of disease process using advanced MRI procedures with emphasis on spectroscopy and functional MR. Includes an in-depth study of MRI safety.

**RADT 4633 Magnetic Resonance Imaging of the Central Nervous System**  
3 Credit Hours  
Sectional anatomy, pathology and imaging protocol of the head, spine and central nervous system.

**RADT 4643 Magnetic Resonance of the Torso and Limbs**  
3 Credit Hours  
Sectional anatomy, pathology and imaging protocols of the abdominal viscera, pelvis, thorax and extremities.

**RADT 4663 Computed Tomography Physics and Instrumentations**  
3 Credit Hours  
Interactions of electromagnetic waves, instrumentation, imaging sequences and computer parameters of computerized tomography imaging.

**RADT 4863 Clinical Internship**  
2–4 Credit Hours  
Experience in a radiology specialty area. Consent of instructor is needed.

**RADT 4912 Comprehensive Review/MRI**  
2 Credit Hours  
Preparation for advanced certification examination.

Effective: Spring Semester 2008
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.

Magnetic Resonance Imaging/Computed Tomography

**Fall Semester - First Year**
- RADT 3123 Sectional Anatomy .................. 3
- RADT 3143 Imaging Pathophysiology ........... 3
- RADT 3563 Managing Clinical Information ...... 3
- RADT 3863 Clinical Internship .................. 3
- RADT 4603 MRI Physics and Instrumentation .. 3
- RADT 4663 CT Physics and Instrumentation .... 3
  Total Semester Credit Hours ...... 18

**Spring Semester - First Year**
- RADT 3253 Patient Care and Assessment III .... 3
- RADT 3403 Radiobiology and Health Physics 3
- RADT 3863 Clinical Internship .................. 3
- RADT 4613 CT Imaging of the Torso and Limbs 3
- RADT 4623 Advanced MRI Procedures and Safety ........................................ 3
- RADT 4643 MRI Imaging of the Torso and Limbs ........................................ 3
  Total Semester Credit Hours ...... 18

**Summer Semester - First Year**
- RADT 4303 Cardiology .............................. 3
- RADT 4633 MRI Imaging of the Central Nervous System .............................. 3
- RADT 4653 CT Imaging of the Central Nervous System .............................. 3
- RADT 4863 Clinical Internship .................. 3
- RADT 4911 Comprehensive Review/CT .......... or
- RADT 4912 Comprehensive Review/MRI ...... 2
- RADT 4933 Research Methods .................. 3
  Total Semester Credit Hours .14-15

**Fall Semester - Second Year**
- RADT DV3003 Psycho-Social Medicine ........... 3
- RADT 3043 Medical Ethics and Law ............. 3
- RADT 4203 Patient Education in Radiology ..... 3
- RADT 4863 Clinical Internship .................. 3
- RADT 4911 Comprehensive Review/CT .......... or
- RADT 4912 Comprehensive Review/MRI ...... 2
- RADT SI4943 Baccalaureate Thesis ............. 3
  Total Semester Credit Hours ...... 17

*Weber State University Radiography Program graduates who completed pre-requisite courses with a passing grade do not repeat the courses in the specialty program.

Students completing the program will earn a major in Magnetic Resonance Imaging/Computed Tomography Emphasis.

Department Bachelor of Science Degree Requirements:
- Major required = 30 Credit Hours
- Minor required = 18 Credit Hours
- Total Required = 48 Credit Hours
COURSE DESCRIPTIONS

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 ethnic 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 3253 Patient Care and Assessment III 3 Credit Hours
Intravenous therapy, patient care procedures and monitoring during imaging studies.

RADT 3403 Radiobiology and Health Physics 3 Credit Hours
Effects of ionizing radiation on the human body, patient and personnel protection, exposure monitoring health physics and oncology.

RADT 3563 Managing Clinical Information 3 Credit Hours
Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.

RADT 3863 Clinical Internship 2–6 Credit Hours
Experience in a radiology specialty area. Consent of instructor is required.

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 4303 Cardiology 3 Credit Hours
Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.

RADT 4603 Magnetic Resonance Imaging Physics and Instrumentation 3 Credit Hours
Physical principles and theories of magnetic resonance, instrumentation, imaging sequences and methods in normal and abnormal tissue, and computer parameters of magnetic resonance.

RADT 4613 Computed Tomography of the Torso and Limbs 3 Credit Hours
Sectional anatomy, pathology and imaging protocols of the abdominal viscera, pelvis, thorax and extremities.

RADT 4623 Advanced MRI Procedures and Safety 3 Credit Hours
Evaluation of organ function and diagnosis of disease process using advanced MRI procedures with emphasis on spectroscopy and functional MR. Includes an in-depth study of MRI safety.

RADT 4633 Magnetic Resonance Imaging of the Central Nervous System 3 Credit Hours
Sectional anatomy, pathology and imaging protocol of the head, spine and central nervous system.

RADT 4643 Magnetic Resonance of the Torso and Limbs 3 Credit Hours

Effective: Spring Semester 2008
Sectional anatomy, pathology and imaging protocols of the abdominal viscera, pelvis, thorax and extremities.

**RADT 4653** **Computed Tomography of the Central Nervous System**  
3 Credit Hours  
Sectional anatomy, pathology and imaging protocols of the head, spine and central nervous system.

**RADT 4663** **Computed Tomography Physics and Instrumentations**  
3 Credit Hours  
Interactions of electromagnetic waves, instrumentation, imaging sequences and computer parameters of computerized tomography imaging.

**RADT 4863** **Clinical Internship**  
2–4 Credit Hours  
Experience in a radiology specialty area.  
Consent of instructor is needed.

**RADT 4911** **Comprehensive Review/CT**  
2 Credit Hours  
Prep for advanced certification examination.

**RADT 4912** **Comprehensive Review/MRI**  
2 Credit Hours  
Preparation for advanced certification examination.

**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.

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**Nuclear Medicine**

**Fall Semester**

RADT 3143 Imaging Pathophysiology ..................3  
RADT 3243 Patient Care and Assessment II ..................3  
RADT 3263 Diagnostic Services Pharmacology 3  
RADT 3563 Managing Clinical Information...... 3  
NUCM 4103 Radiopharmaceuticals and Dosages ..............................3  
NUCM 4861 Clinical Education..............................3  
Total Semester Credit Hours......18

**Spring Semester**

RADT 3423 Federal Regulations.............................3  
RADT 4303 Cardiology........................................3  
RADT 4933 Research Methods......................3  
NUCM 4203 Scanning and Imaging I..................3  
NUCM 4303 Radionuclide Physics and Instrumentation.........................3

**Summer Semester**

RADT SI4943 Baccalaureate Thesis.......3  
NUCM 4213 Scanning and Imaging II ............3  
NUCM 4223 Nuclear Cardiology .................3  
NUCM SI4333 Quality Assurance .................3  
NUCM 4863 Clinical Education ......................3  
NUCM 4912 Comprehensive Review ............2  
Total Semester Credit Hours ...... 17

*Students completing another program in the Department of Radiologic Sciences at Weber State University have completed this course.

Students completing the program will have earned a major in Nuclear Medicine.
Courses required for a major or minor in the Department of Radiologic Sciences:

RADT 4933 Research Methods .............................. 3
RADT SI4943 Baccalaureate Thesis ....................... 3

Recommended course meeting Diversity Requirement:
RADT DV3003 Psycho-Social Medicine ............... 3

### COURSE DESCRIPTIONS - NUCLEAR MEDICINE PROGRAM

**RADT 3043 MEDICAL ETHICS AND LAW**
3 Credit Hours
Medical ethics and law and case studies in medical imaging and radiation therapy.

**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 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 3403 RADIOBIOLOGY AND HEALTH PHYSICS**
3 Credit Hours
Effects of ionizing radiation on the human body, patient and personnel protection, exposure monitoring health physics and oncology.

**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 4303 CARDIOLOGY**
3 Credit Hours
Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.

**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.

**NUCM 4103 RADIOPHARMACEUTICALS AND DOSAGES**
3 Credit Hours
Radiopharmacology, characterization of radiopharmaceuticals used in performing examinations and calculation of dosages.

**NUCM 4203 SCANNING AND IMAGING PROCEDURES I**
3 Credit Hours
Organ concentration, excretion and absorption, measurements and imaging.

**NUCM 4213 SCANNING AND IMAGING PROCEDURES II**
3 Credit Hours
Organ concentration, excretion and absorption, measurements and imaging.

**NUCM 4223 Nuclear Cardiology**  
3 Credit Hours  
Pathology, indications for examination and procedures in nuclear cardiology.

**NUCM 4303 Radionuclide Physics & Instrumentation**  
3 Credit Hours  
Production and properties of radionuclides, decay schemes, radiation measurements and special characteristics of radiopharmaceuticals.

**NUCM SI4333 Quality Assurance**  
3 Credit Hours  
Nuclear Medicine departmental policies and procedures.

**NUCM 4861 Clinical Education I**  
3 Credit Hours  
A minimum of 24 hours per week in an active Nuclear Medicine department.

**NUCM 4862 Clinical Education II**  
3 Credit Hours  
A minimum of 24 hours per week in an active Nuclear Medicine department.

**NUCM 4863 Clinical Education III**  
3 Credit Hours  
A minimum of 24 hours per week in an active Nuclear Medicine department.

**NUCM 4912 Comprehensive Review**  
2 Credit Hours  
Review of learned material.

**NUCM 4991 Seminar**  
1 Credit Hour  
New technology, procedures and equipment.

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**Radiation Therapy**

**FALL SEMESTER**

RADT 3563 Managing Clinical Information...... 3  
RADT 4933 Research Methods ............3  
RATH 4330 Radiation Therapy Physics ..........3  
RATH 4410 Radiation Oncology I ...............3  
RATH SI4446 Quality Assurance..................3  
RATH 4861 Clinical Education I ...................3  
Total Semester Credit Hours....... 18

**SPRING SEMESTER**

*RADT 3403 Radiobiology and Health Physics 3  
RATH 4342 Introduction to Treatment Planning ........................................3  
RATH 4412 Radiation Oncology II..................3  
RATH 4448 New Technology.........................3  
RATH 4862 Clinical Education II...................3  
Total Semester Credit Hours........ 15

**SUMMER SEMESTER**

RADT 4943 Baccalaureate Thesis....................3  
RADT 4992 Seminar ..................................2  
RATH 4414 Radiation Oncology III ..................3  
RATH 4444 Advanced Treatment Planning / Brachytherapy.......................3  
RATH 4863 Clinical Education III.................3  
RATH 4913 Comprehensive Review...............3  
Total Semester Credit Hours ...... 17

Elective: RADT 3043 Medical Ethics and Law........3  
RADT 3423 Federal Regulations ......3  
RADT 3243 Patient Care and Assessment II.........3  

Recommended course meeting Diversity Requirement:  
RADT DV3003 Psycho-Social Medicine .............3
**Department Bachelor of Science Degree**

**Requirements:**
- Major required = 30 Credit Hours
- Minor required = 18 Credit Hours
- Total Required = 48 Credit Hours

Students completing the program will have earned a major Radiation Therapy.

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### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>RADT 3043</td>
<td>Medical Ethics and Law</td>
<td>3</td>
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<tr>
<td></td>
<td>Medical ethics and law and case studies in medical imaging and radiation therapy.</td>
<td></td>
</tr>
<tr>
<td>RADT 3243</td>
<td>Patient Care and Assessment II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>System analysis and advanced level of patient care, assessment and management in radiology.</td>
<td></td>
</tr>
<tr>
<td>RADT 3403</td>
<td>Radiobiology and Health Physics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Effects of ionizing radiation on the human body, patient and personnel protection, exposure monitoring health physics and oncology.</td>
<td></td>
</tr>
<tr>
<td>RADT 3423</td>
<td>Federal Regulations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Regulations governing health care, equipment and application of ionizing radiation.</td>
<td></td>
</tr>
<tr>
<td>RADT 3563</td>
<td>Managing Clinical Information</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.</td>
<td></td>
</tr>
<tr>
<td>RADT 4933</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
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<tr>
<td>RADT SI4943</td>
<td>Baccalaureate Thesis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Research in the health professions utilizing the scientific inquiry method.</td>
<td></td>
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<tr>
<td>RADT 4992</td>
<td>Seminar</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>New developments and procedures in imaging and therapy and preparing for the future.</td>
<td></td>
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<tr>
<td>RATH 4330</td>
<td>Radiation Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>RATH 4342</td>
<td>Introduction to Treatment Planning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Basic qualities and concepts in radiotherapeutic dosimetry. Current aspects of the anatomical and physical consideration involved in planning an delivery of the therapy prescription.</td>
<td></td>
</tr>
<tr>
<td>RATH 4410</td>
<td>Radiation Oncology I</td>
<td>3</td>
</tr>
<tr>
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<td>Pathology of cancer; combined therapy and surgery; chemotherapy and radiation therapy; clinical application of treatment techniques; and case studies.</td>
<td></td>
</tr>
<tr>
<td>RATH 4412</td>
<td>Radiation Oncology II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pathology of cancer; combined therapy and surgery; chemotherapy and radiation therapy;</td>
<td></td>
</tr>
</tbody>
</table>
Radiologist Assistant

**FALL SEMESTER - First Year**
- RADT 3143 Imaging Pathophysiology .............. 3
- RADT 3243 Patient Care and Assessment II ...... 3
- RADT 3403* Radiobiology & Health Physics ...... 3
- RADT 5403 Evaluation of the Osseous System .. 3
- RADT 5423 Evaluation of the Abdomen and GI System .................................................. 3
- RADT 5861 Clinical Preceptorship ................. 3
- Total Semester Credit Hours: 15-18

**SPRING SEMESTER - First Year**
- RADT 3123 Sectional Anatomy ..................... 3
- RADT 3253 Patient Care & Assessment III .... 3
- RADT 3263 Diagnostic Services Pharmacology 3
- RADT 5413 Evaluation of the Chest .............. 3
- RADT 4933 Research Methods ..................... 3
- RADT 5862 Clinical Preceptorship ................. 3
- Total Semester Credit Hours ...... 18

**SUMMER SEMESTER - First Year**
- RADT DV3003* Psycho-Social Medicine .......... 3
- RADT 3043* Medical Ethics and Law ............ 3
- RADT SI3443 Quality Assurance (Fluoroscopy) ..................................................... 3
- RADT 4303 Cardiology .............................................. 3
- RADT 4992 Directed Readings:(Professional Communication Radiology) ........ 1
- RADT 5473 Invasive Imaging Studies (Non-vascular) ..................................................... 3
- RADT 5863 Clinical Preceptorship ................. 3
- Total Semester Credit Hours .13-19

**FALL SEMESTER - Second Year**
### COURSE DESCRIPTIONS

**RADT DV3003 PSYCHO-SOCIAL MEDICINE**  
*3 Credit Hours*  
System analysis and advanced level of patient care, assessment and management in radiology.

**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*  
Development of a quality assurance program and manual to meet accreditation requirements.

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*Students completing another program in the Department of Radiologic Sciences at Weber State University have completed these courses.*
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3563</td>
<td>Managing Clinical Information</td>
<td>3</td>
<td>Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.</td>
</tr>
<tr>
<td>RADT 4203</td>
<td>Patient Education in Radiology</td>
<td>3</td>
<td>Skills necessary to assess, plan and evaluate a variety of educational programs specific to radiology patients.</td>
</tr>
<tr>
<td>RADT 4253</td>
<td>Risk Management</td>
<td>3</td>
<td>Study of management of risk associated with the delivery of health care in clinical and non-clinical settings.</td>
</tr>
<tr>
<td>RADT 4303</td>
<td>Cardiology</td>
<td>3</td>
<td>Detailed study of the heart: anatomy, physiology, pathophysiology, pharmacology, EKGs and imaging modalities.</td>
</tr>
<tr>
<td>RADT 4803</td>
<td>Individual Research</td>
<td>1–3</td>
<td>Research projects developed for district, state, regional or national presentation.</td>
</tr>
<tr>
<td>RADT 4933</td>
<td>Research Methods</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>RADT 514943</td>
<td>Baccalaureate Thesis</td>
<td>3</td>
<td>Research in the health professions utilizing the scientific inquiry method.</td>
</tr>
<tr>
<td>RADT 4992</td>
<td>Seminar</td>
<td>1–2</td>
<td>New developments and procedures in imaging and therapy and preparing for the future.</td>
</tr>
<tr>
<td>RADT 5403</td>
<td>Evaluation of the Osseous System</td>
<td>3</td>
<td>Imaging evaluation of pathological conditions, abnormalities and anomalies of the osseous system.</td>
</tr>
<tr>
<td>RADT 5413</td>
<td>Evaluation of the Chest</td>
<td>3</td>
<td>Imaging evaluation of pathological conditions, abnormalities and anomalies of the chest.</td>
</tr>
<tr>
<td>RADT 5423</td>
<td>Evaluation of the Abdomen and GI System</td>
<td>3</td>
<td>Imaging evaluation of pathological conditions, abnormalities and anomalies of the abdomen and gastrointestinal system.</td>
</tr>
<tr>
<td>RADT 5433</td>
<td>Evaluation of the Genitourinary System</td>
<td>3</td>
<td>Imaging evaluation of pathological conditions, abnormalities and anomalies of the genitourinary system.</td>
</tr>
<tr>
<td>RADT 5443</td>
<td>Clinical Pathways</td>
<td>3</td>
<td>Studying clinical pathways for patients based on disease processes and trauma. Prerequisites: RADT 5403 and RADT 5413.</td>
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<tr>
<td>RADT 5453</td>
<td>Evaluation / CNS and Facial Structures</td>
<td>3</td>
<td>Imaging evaluation of pathological conditions, abnormalities and anomalies of the central nervous system and facial structures.</td>
</tr>
<tr>
<td>RADT 5463</td>
<td>Problem Patient Management</td>
<td>3</td>
<td>Determination of pathological conditions utilizing problem-solving case studies.</td>
</tr>
<tr>
<td>RADT 5473</td>
<td>Invasive Imaging Procedures</td>
<td>3</td>
<td>Patient preparation and performance of medical imaging invasive procedures are presented.</td>
</tr>
<tr>
<td>RADT 5816</td>
<td>Clinical Preceptorship</td>
<td>3</td>
<td>Experience in a radiology department. Consent of instructor needed.</td>
</tr>
<tr>
<td>RADT 5862</td>
<td>Clinical Preceptorship</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Continuation of RADT 5861.

RADT 5863 **Clinical Preceptorship**  
3 Credit Hours  
Continuation of RADT 5862.

RADT 5864 **Clinical Preceptorship**  
3 Credit Hours  
Continuation of RADT 5863.

RADT 5865 **Clinical Preceptorship**  
3 Credit Hours  
Continuation of RADT 5864.

**RADT 5868 Final Competency Assessment**  
3 Credit Hours  
Review and evaluation of student competencies.

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**Women’s Imaging**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT 3863</td>
<td>Clinical Internship</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4553</td>
<td>Breast Anatomy, Physiology and Pathology</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4563</td>
<td>Mammographic Positioning Imaging Techniques</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4583</td>
<td>Mammographic Equipment and Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>Total Semester Credit Hours</td>
<td></td>
<td>12</td>
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</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>RADT 3043</td>
<td>Medical Ethics and Law</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4572</td>
<td>Patient Education and Clinical Examination</td>
<td>2</td>
</tr>
<tr>
<td>RADT 4573</td>
<td>The Female Patient and Medical Imaging</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4110</td>
<td>Sonography Principles and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>DMS 4510</td>
<td>Breast Sonography</td>
<td>1</td>
</tr>
<tr>
<td>DMS 4841</td>
<td>Breast Clinical</td>
<td>3</td>
</tr>
<tr>
<td>Total Semester Credit Hours</td>
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</table>

**Summer Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>RADT DV3003</td>
<td>Psycho-Social Medicine</td>
<td>3</td>
</tr>
<tr>
<td>RADT 3423</td>
<td>Federal Regulations</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4543</td>
<td>Bone Densitometry</td>
<td>3</td>
</tr>
<tr>
<td>RADT 4863</td>
<td>Clinical Internship</td>
<td>2</td>
</tr>
<tr>
<td>Total Semester Credit Hours</td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

**Course Descriptions**

Students completing all three semesters will have earned a major in Women’s Imaging Emphasis. The student may obtain a minor in Advanced Radiologic Sciences by completing the Department Requirements.

Department Bachelor of Science Degree Requirements:
- Major required = 30 Credit Hours
- Minor required = 18 Credit Hours
- Total Required = 48 Credit Hours

Courses required for either a major or minor in the Department of Radiologic Sciences:
- RADT 4933 Research Methods........................................ 3
- RADT SI4943 Baccalaureate Thesis................................. 3
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 ethnic 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 3423 **Federal Regulations**  
3 Credit Hours  
Regulations governing health care, equipment and application of ionizing radiation.

RADT 3863 **Clinical Internship**  
2–6 Credit Hours  
Experience in a radiology specialty area. Consent of instructor is required.

RADT 4543 **Bone Densitometry**  
3 Credit Hours  
This course comprehensively covers the methods of bone density measurement (bone densitometry, DEXA), the pathogenesis of osteoporosis, quality management issues, therapies for osteoporosis and a review of additional analysis methods.

RADT 4553 **Breast Anatomy, Physiology and Pathology**  
3 Credit Hours  
Normal breast anatomy and physiology compared to pathological conditions.

RADT 4563 **Mammographic Positioning / Imaging Techniques**  
3 Credit Hours  
Routine positions, risk versus benefit; tissue variations, specialized procedures and imaging modalities.

RADT 4572 **Patient Education and Clinical Examination**  
2 Credit Hours  
Breast disease and reconstruction methods, breast examination, rehabilitation, medical-legal considerations.

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 4583 **Mammographic Equipment and Quality Assurance**  
3 Credit Hours  
Equipment operation, technical factors and quality assurance procedures in mammography.

RADT 4863 **Clinical Internship**  
2 Credit Hours  
Experience in a radiology specialty area. Consent of instructor is needed.

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 4510 **Breast Sonography**  
1 Credit Hours  
Concepts in breast sonographic scanning technique and protocol to produce and evaluate diagnostic images.

DMS 4841 **Breast Clinical**  
3 Credit Hours  
A minimum of 24 hours per week performing breast sonography examinations.
**Elective Course Offerings**

Meet with your faculty advisor and develop an academic contract. Complete a minimum of 10 credit hours for a major and minor from approved department course offerings.

**RADT 3563 Managing Clinical Information**

3 Credit Hours

Digital and volumetric imaging, emerging technologies, secure computerized management practice, and patient privacy regulations.

**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.

**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.

**RADT 4914 Comprehensive Review/WI**

2 Credit Hours

Preparation for advanced certification examination.
Measureable Learning Outcomes

At the end of their study at WSU, students in this program will
1. Provide outstanding patient care and education
2. Demonstrate a working knowledge of professional development and research
3. Provide clinically competent and ethical patient care
4. Understand and utilize appropriate procedures, anatomy and pathophysiologic
   Information in imaging or treating patients
5. Use appropriate instrumentation and quality control

Table 3  Radiography Outcomes Assessment—Indirect measurements of student learning

<table>
<thead>
<tr>
<th>Objective</th>
<th>Internal Measurement</th>
<th>External Measurement</th>
<th>Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completing the Radiologic Technology Program the student will be able to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the biological effects of radiation</td>
<td>Successful Completion of: Radt 1303 Radt 3403</td>
<td>Utah State Practical Technician results Examination</td>
<td>Yearly</td>
</tr>
<tr>
<td>Description</td>
<td>Successful Completion of:</td>
<td>Progress Evaluation:</td>
<td>Frequency</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Demonstrate proper radiation protection procedures during diagnostic procedures</td>
<td>Radt 1022 Radt 3403 Radt 1502/1601 Radt 1512/1621 Radt 1522/1641 Radt 1532/1661 Radt 1542/1681</td>
<td>Radt 2861-2865</td>
<td>Yearly Every Semester</td>
</tr>
<tr>
<td>Demonstrate proper use and understanding of radiation exposure monitors and diagnostic radiation equipment</td>
<td>Radt 1303 Radt 2403 Radt SI3443 Radt 1502/1601 Radt 1512/1621 Radt 1522/1641</td>
<td></td>
<td>Yearly beginning Every Semester</td>
</tr>
<tr>
<td>Demonstrated Competency</td>
<td>Course Requirements</td>
<td>Assessment Details</td>
<td>Frequency</td>
</tr>
<tr>
<td>-------------------------</td>
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</tr>
<tr>
<td>Personal and Professional Growth Assessment</td>
<td>Radt 1303, Radt 2403, Radt S13443, Radt 1502/1601, Radt 1512/1621, Radt 1522/1641, Radt 1532/1661, Radt 1542/1681</td>
<td>Utah State Practical Technician results Examination, ARRT Examination results, Employer Surveys, Clinical Evaluation &amp; Personal and Professional Growth Assessment</td>
<td>Yearly beginning, Yearly, Every 3 years, Every semester</td>
</tr>
<tr>
<td></td>
<td>Radt 2861-2865</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radt 1532/1661, Radt 1542/1681</td>
<td>Clinical Evaluations: Radt 2861-2865</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radt 1502/1601, Radt 1512/1621, Radt 1522/1641, Radt 1532/1661, Radt 1542/1681</td>
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<tr>
<td>Demonstrate repeated competency in accurately explaining the proper radiographic film processing technique</td>
<td>Radt 1303, Radt 2403, Radt S13443, Radt 1502/1601, Radt 1512/1621, Radt 1522/1641</td>
<td>Utah State Practical Technician results Examination, ARRT Examination results, Job placement rates</td>
<td>Yearly, Yearly, Every 3 years</td>
</tr>
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</tr>
<tr>
<td>Demonstrate and accurately interpret quality assurance testing</td>
<td>Successful Completion of: Radt 1303 Radt 2403 Radt SI3443 Radt 1542/1681</td>
<td>Utah State Practical Technician results Examination</td>
<td>Yearly</td>
</tr>
<tr>
<td></td>
<td>Clinical Evaluations: Radt 2861-2865</td>
<td>ARRT Examination results</td>
<td>Yearly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical Evaluation &amp; Personal and Professional Growth Assessment</td>
<td>Every semester</td>
</tr>
</tbody>
</table>

<p>| Demonstrate proper evaluation and critique of radiographic positioning, technical factors, anatomy, physiology and pathology | Successful Completion of: Radt 1502/1601 Radt 1512/1621 Radt 1522/1641 Radt 1532/1661 Radt 1542/1681 | Utah State Practical Technician results Examination | Yearly |
| | | ARRT Examination results | Yearly |
| | | Clinical Evaluation &amp; Personal and Professional Growth Assessment | Every semester |
| Demonstrate legal and professional responsibility | Successful Completion of: Radt DV3003, Radt 3403, Radt 2043, Radt 3423, Radt 1022 | Utah State Practical Technician results Examination, ARRT Examination results, Clinical Evaluation &amp; Personal and Professional Growth Assessment | Yearly, Yearly, Every Semester |
| Demonstrate appropriate patient education, safety and comfort skills | Successful Completion of: Radt 1022, Radt 2043, Radt DV3003, Radt 3023, Radt 2263, Radt 1502/1601, Radt 1512/1621, Radt 1522/1641, Radt 1532/1661, Radt 1542/1681 | Utah State Practical Technician results Examination, ARRT Examination results, Clinical Evaluation &amp; Personal and Professional Growth Assessment | Yearly, Yearly, Every Semester |</p>
<table>
<thead>
<tr>
<th>Clinical Evaluations: Radt 2861-2865</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate acceptable methods of infection control and prevention</td>
<td>Successful Completion of: Radt 1022 Radt 2043 Radt DV3003 Radt 3023 Radt 2263 Radt 1502/1601 Radt 1512/1621 Radt 1522/1641 Radt 1532/1661 Radt 1542/1681</td>
<td>Utah State Practical Technician results Examination ARRT Examination results Clinical Evaluation &amp; Personal and Professional Growth Assessment</td>
</tr>
<tr>
<td>Clinical Evaluations: Radt 2861-2865</td>
<td></td>
<td>Yearly Yearly Every Semester</td>
</tr>
<tr>
<td>Demonstrate proper patient monitoring during radiographic procedures</td>
<td>Successful Completion of: Radt 2043 Radt DV3003 Radt 3023 Radt 2263</td>
<td>Utah State Practical Technician results Examination ARRT Examination results Clinical Evaluation &amp; Personal and Professional Growth Assessment</td>
</tr>
<tr>
<td>Clinical Evaluations: Radt 2861-2865</td>
<td></td>
<td>Yearly Yearly Every Semester</td>
</tr>
<tr>
<td>Demonstrate appropriate responses to diverse patient populations</td>
<td>Assessment</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Successful Completion of: Radt DV3003 Radt 3023</td>
<td>Utah State Practical Technician results Examination</td>
<td></td>
</tr>
<tr>
<td>Clinical Evaluations: Radt 2861-2865</td>
<td>ARRT Examination results</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clinical Evaluation &amp; Personal and Professional Growth Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employer Surveys</td>
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</tr>
<tr>
<td></td>
<td>Graduate Surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yearly</td>
<td></td>
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<tr>
<td></td>
<td>Yearly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every Semester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every 3 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every 3 years</td>
<td></td>
</tr>
<tr>
<td>Demonstrate a sense of professionalism and desire to learn</td>
<td>Assessment</td>
<td></td>
</tr>
<tr>
<td>Successful Completion of: Radt 1022 Radt DV3003 Radt 2866</td>
<td>Utah State Practical Technician results Examination</td>
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<tr>
<td>Student acceptance into specialty programs</td>
<td>ARRT Examination results</td>
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<td>Employer Surveys</td>
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<td>Yearly</td>
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<td></td>
<td>Yearly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every 3 years</td>
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</table>
Graduate Surveys
Exit interviews
Clinical Evaluation &
Personal and
Professional Growth
Assessment

Every 3 years
Yearly
Every Semester

Demonstrate continued competency through life long learning

Student acceptance into specialty programs
Employer Surveys
Graduate Surveys
Exit Interviews
Clinical Evaluation &
Personal and
Professional Growth
Assessment

Every 3 years
Every 3 years
Yearly

**Table 4 Advanced Radiography, Imaging Specialities and Radiation Therapy**

**Advance Radiography/CORE**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Internal Measurement</th>
<th>External Measurement</th>
<th>Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completing the Program of choice, the student will be able to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the biologic effects of ionizing radiation</td>
<td>Successful completion of Radt 3403, Radt SI3443</td>
<td>Certification examination results</td>
<td>Annually</td>
</tr>
<tr>
<td>Demonstrate proper radiation protection procedures during diagnostic procedures</td>
<td>Successful completion of: Radt 4863 – CT Radt 4861&amp; 4862 – Mammo Radt 5861, 5862, 5863, 5864 &amp; 5865 – RPA Nucm 4861, 4862. 4863 Rath 4861, 4862. 4863</td>
<td>Certification examination results Employer surveys</td>
<td>Annually Every 3 years</td>
</tr>
<tr>
<td>Demonstrate patient assessment, monitoring and management skills</td>
<td>Successful completion of: Radt 3243 Radt 3253 Radt 3263, Radt 4303 Radt 5363 &amp; 4423 -- RPA Rath 4425– Rad</td>
<td>Certification examination results Employer surveys</td>
<td>Annually Every 3 years</td>
</tr>
</tbody>
</table>
| Therapy Clinical evaluations | Successful completion of: Radt DV3003, Radt 3043, Radt 4203, Radt 4223, Radt 4572 | Certification examination results | Annually  
|-----------------------------|---------------------------------------------------------------------------------|---------------------------------|------|
| Demonstrate appropriate patient education, safety and comfort skills | Mammography Radt 4425– Radiation Therapy Clinical evaluations | Employer surveys | Every 3 years  
| Demonstrate legal, professional and ethical responsibility | Successful completion of: Radt DV3003, Radt 3043, Radt 4253, Radt 4233 | Certification examination results | Annually  
| Demonstrate knowledge of anatomy, physiology and pathophysiology | Successful completion of: Radt 3023, Radt 3123, Radt 3143, 4423 & 4403 All courses in the specific programs pertaining to imaging. Clinical evaluations | Certification examination results | Annually  
| | | Employer surveys | Every 3 years |
| Demonstrate appropriate responses to diverse patient populations | Successful completion of: Radt DV3003, Radt 3023, Radt 4203, Radt 3243, Radt 3253, Radt 5363 Clinical evaluations | Certification examination results | Annually |
| Employers surveys | Every 3 years |
| Graduate surveys | Every 3 years |

| Demonstrate knowledge and application of federal regulations | Successful completion of: Radt 3043, Radt 3423, Radt 4243, Radt 4253, Radt 4213 Clinical evaluations | Certification examination results | Annually |
| Employers surveys | Every 3 years |

<p>| Demonstrate a sense of professionalism and desire to learn | Successful completion of: Radt 4803, Radt 4933, Radt SI4943, Radt 4922, Radt 4942, Radt 4992, Radt 4992 Active participation in | Exit interviews | Annually |
| Graduate surveys | Every 3 years |
| Employers surveys | Every 3 years |</p>
<table>
<thead>
<tr>
<th>Demstrate continued competency through life long learning</th>
<th>Active participation in professional organizations</th>
<th>Maintenance of active certification status</th>
<th>Every 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance into graduate school</td>
<td>Employers surveys</td>
<td>Every three years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment rate</td>
<td>Every three years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graduate surveys</td>
<td>Every 3 years</td>
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</tbody>
</table>

**Computerized Tomography/Magnetic Resonance Imaging (CT/MRI)**

<table>
<thead>
<tr>
<th>Demonstrate proper use of imaging equipment</th>
<th>Successful completion of: Radt 4603, Radt 4623, Radt 4663, Radt 3463</th>
<th>Certification examinations results</th>
<th>Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinical evaluations: Radt 4683</td>
<td>Employer surveys</td>
<td>Every 3 years</td>
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<td>Graduate surveys</td>
<td>Every 3 years</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Demonstrate proper selection of technical factors to produce diagnostic images</th>
<th>Successful completion of: Radt 4633, Radt 4643, Radt 4613, Radt 4653</th>
<th>Certification examination results</th>
<th>Annually</th>
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<tbody>
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<td></td>
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<td>Employment rate</td>
<td>Annually</td>
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<td></td>
<td></td>
<td>Graduate surveys</td>
<td>Every 3 years</td>
</tr>
<tr>
<td>Demonstrate and accurately interpret quality assurance testing</td>
<td>Successful completion of: Radt 3443, Radt 4603 Radt 4663</td>
<td>Certification examination results</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Clinical evaluations</td>
<td>Employer surveys</td>
<td>Every 3 years</td>
</tr>
<tr>
<td>Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, contrast injection and pathology</td>
<td>Successful completion of: Radt 4633, Radt 4643, Radt 4613, Radt 4653, Radt 4623, Radt 4911 and Radt 4912</td>
<td>Certification examination results</td>
<td>Annually</td>
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<tr>
<td></td>
<td>Clinical evaluations</td>
<td>Employer surveys</td>
<td>Every 3 years</td>
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<tr>
<td></td>
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<td>Employment rate</td>
<td>Annually</td>
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<td></td>
<td></td>
<td>Graduate surveys</td>
<td>Every 3 years</td>
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</tbody>
</table>

**Cardiovascular-Interventional Technology (CIT)**

<p>| Demonstrate proper use of imaging equipment | Successful completion of: Radt 3463, Radt 4913 ARRT certification Clinical evaluations: Radt 4863 | Certification examination results | Annually |
| | | Employment rate | Annually |</p>
<table>
<thead>
<tr>
<th>Demonstrate proper use of technical factors to produce diagnostic images</th>
<th>Successful completion of: Radt 4313, Radt 4333, Radt 4343 Clinical evaluations</th>
<th>Certification examination results</th>
<th>Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate and accurately interpret quality assurance testing</td>
<td>Successful completion of: Radt SI3443, Radt 3463 Clinical evaluations &amp; ARRT certification</td>
<td>Certification examination results</td>
<td>Annually</td>
</tr>
<tr>
<td>Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, contrast injection and pathology</td>
<td>Successful completion of: Radt 4313, Radt 4333, and Radt 4343</td>
<td>Certification examination results</td>
<td>Employment rate</td>
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<td></td>
<td></td>
<td></td>
<td>Employer surveys</td>
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</table>

**Women’s Imaging: Mammography**

<table>
<thead>
<tr>
<th>Demonstrate proper use of imaging equipment</th>
<th>Successful completion of: Radt 4563 Clinical evaluations: Radt 4861, Radt 4862</th>
<th>Certification examination results</th>
<th>Employment rate</th>
<th>Employment surveys</th>
<th>Every 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate proper use of imaging equipment</td>
<td>Successful completion of: Radt 4563 Clinical evaluations: Radt 4861, Radt 4862</td>
<td>Certification examination results</td>
<td>Employment rate</td>
<td>Employment surveys</td>
<td>Every 3 years</td>
</tr>
</tbody>
</table>
| Demonstrate proper selection of technical factors to produce diagnostic images | Successful completion of: Radt 4553, Radt 4563  
Clinical evaluations: Radt 4861, Radt 4862 | Certification examination results  
Employment rate  
Employer surveys | Annually  
Every 3 years |
| Demonstrates and accurately interpret quality assurance testing | Successful completion of: Radt 4583  
Clinical evaluations: Radt 4861, Radt 4862 | Certification examination results  
Employer surveys | Annually  
Every three years |
| Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy and pathology | Successful completion of: Radt 4553, Radt 4563, Radt 4572  
Clinical evaluations: Radt 4861, Radt 4862 | Certification examination results  
Employer surveys  
Employment rate | Annually  
Every 3 years  
Annually |

**Diagnostic Medical Sonography**

| Demonstrate proper use of imaging equipment | Successful completion of: DMS 4103, DMS 4641, DMS 4642, DMS 4643, DMS 4644, DMS 4645  
Clinical evaluations: | Certification examination results  
Employer surveys  
Exit interviews | Annually  
Every 3 years  
Annually |
<table>
<thead>
<tr>
<th>Demonstrate proper selection of technical factors to produce diagnostic images</th>
<th>Successful completion of: DMS 4103, DMS 4303, DMS 4323, DMS4343, DMS 4403, DMS 4503, DMS 4523 Clinical evaluations</th>
<th>Employment rate</th>
<th>Certification examination results</th>
<th>Annually</th>
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</thead>
<tbody>
<tr>
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<td></td>
<td>Exit interviews</td>
<td>Annually</td>
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<td></td>
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<td></td>
<td>Employer surveys</td>
<td>Every 3 years</td>
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<td>Graduate surveys</td>
<td>Every 3 years</td>
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<td>Employment rate</td>
<td>Annually</td>
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<tr>
<td>Demonstrate and accurately interpret quality assurance testing</td>
<td>Successful completion of: DMS 4103, DMS 4143 Clinical evaluations</td>
<td>Certification examination results</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td>Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, contrast injection and pathology</td>
<td>Successful completion of: DMS 4303, DMS 4323, DMS 4343, DMS 4403, DMS 4503, DMS 4523 Clinical evaluations</td>
<td>Certification examination results</td>
<td>Annually</td>
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<td>Exit interviews</td>
<td>Annually</td>
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<td>Employer surveys</td>
<td>Every three years</td>
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<td>Graduate surveys</td>
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<td>Employment rate</td>
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<tr>
<td><strong>Nuclear Medicine</strong></td>
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<tr>
<td>Demonstrate proper use of imaging equipment</td>
<td>Successful completion of: Radt 3463, Nucm 4303, Nucm SI4333 Clinical evaluations: Nucm 4861, 4862, 4863</td>
<td>Certification examination results Employer surveys Graduate surveys Employment rate</td>
<td>Annually Every 3 years Every 3 years Annually</td>
<td></td>
</tr>
<tr>
<td>Demonstrate proper use of radiopharmaceuticals &amp; technical factors to produce diagnostic images</td>
<td>Successful completion of: Nucm 4103, Nucm4203, Nucm 4213 Nucm 4303, Nucm SI4333, Nucm 4223 Clinical evaluations</td>
<td>Certification examination results Employer surveys Graduate surveys Employment rate</td>
<td>Annually Every 3 years Every 3 years Annually</td>
<td></td>
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<tr>
<td>Demonstrate and accurately interpret quality assurance testing</td>
<td>Successful completion of: Nucm 4303, NucmSI4333 ARRT certification in radiography</td>
<td>Certification examination results Employer surveys</td>
<td>Annually Every 3 years</td>
<td></td>
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<tr>
<td>Demonstrate proper evaluation and critique of diagnostic</td>
<td>Successful completion of: Nucm 4103,</td>
<td>Certification examination results</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td>Images for accuracy of technical factors, patient positioning, anatomy, nuclide injection, and pathology</td>
<td>Nucm 4203, Nucm 4213, Nucm 4223</td>
<td>Employer surveys</td>
<td>Every 3 years</td>
<td></td>
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<tr>
<td>Clinical evaluations</td>
<td>Employment rate</td>
<td>Graduate surveys</td>
<td>Annually</td>
<td>Every 3 years</td>
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</tbody>
</table>

**Radiation Therapy**

| Demonstrate proper use of treatment equipment | Successful completion of: Rath 4330, Rath 4342, Rath 4444 | Certification examination results | Annually |
| Clinical evaluations: Rath 4861, 4862, 4863 | Employer surveys | Graduate surveys | Every 3 years |
| Employment rate | Annually | Every 3 years |

<p>| Demonstrate proper interpretation of treatment prescriptions, treatment fields and procedures | Successful completion of: Rath 4410, Rath 4412, Rath 4414, Rath 4444 | Certification examination results | Annually |
| Clinical evaluations: Rath 4861, 4862, 4863 | Employer surveys | Graduate surveys | Every 3 years |
| Employment rate | Annually | Every 3 years |
| Demonstrate and accurately interpret quality assurance testing | Successful completion of: Rath 4330, Rath SI4446, ARRT certification in radiography | Certification examination results | Annually |
| | | Employer surveys | Every 3 years |
| | | Graduate surveys | Every 3 years |
| | | Employment rate | Annually |
| Demonstrate proper evaluation and critique of treatment simulation and delivery, patient positioning and protection, anatomy and pathology | Successful completion of: Rath 4342, Rath 4410, Rath4412, Rath 4414, Rath 4444, Clinical evaluations | Certification examination results | Annually |
| | | Employer surveys | Every 3 years |
| | | Graduate surveys | Every 3 years |
| | | Employment rate | Annually |
| <strong>Radiology Practitioner Assistant</strong> | | | |
| Demonstrate proper use of imaging equipment | Successful completion of: Radt SI3443, Radt 3463, Radt 5403, Radt 5413, | Certification examination results | Annually |
| | | Employment rate | Annually |</p>
<table>
<thead>
<tr>
<th>Task</th>
<th>Demonstrate efficient use of imaging and fluoroscopic equipment to produce diagnostic images</th>
<th>Successful completion of: Radt 5403, 5413, 5423, 5433, 5453</th>
<th>Clinical evaluations: Radt 5861, 5862, 5863, 5864, 5865, 5867</th>
<th>Certification examination results</th>
<th>Employment rate</th>
<th>Annually</th>
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<tbody>
<tr>
<td>Clinical evaluations</td>
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<td>Successful completion</td>
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<tr>
<td>of: Radt 5403, 5413, 5423, 5433, 5453</td>
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<tr>
<td>Clinical evaluations</td>
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<td>Certification examination results</td>
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<tr>
<td>Demonstrate and accurately interpret quality assurance testing</td>
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<tr>
<td>Successful completion</td>
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<tr>
<td>ARRT certification in radiography</td>
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<tr>
<td>Clinical evaluations</td>
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<td>Certification examination results</td>
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<tr>
<td>Demonstrate proper evaluation and critique of diagnostic images for accuracy in technical factors, patient positioning, anatomy, contrast injection and pathology</td>
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<td>Successful completion</td>
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<tr>
<td>of: Radt 5403, 5413, 5423, 5433, 5453</td>
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<tr>
<td>Clinical evaluations</td>
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<tr>
<td>Certification examination results</td>
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<td>Employment rate</td>
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The Department of Radiologic Sciences has an excellent ongoing system for outcome assessing and planning. The most difficult part of the assessment plan is the inability to implement change due to such things as budgetary restraints, lack of personnel, and inability to obtain equipment and/or resources to facilitate the identified needs.

The data collected is reviewed regularly in the following manner:

1. All assessment information is discussed at regularly Department faculty meetings.

2. Twice annually, the Department holds an all-day planning meeting to discuss changes and improvements to the programs within the Department.

3. Advisory Committee meetings are held each semester.

4. Individual clinical site issues are discussed regularly with clinical faculty.

5. Appropriate information is shared with students annually during student orientation, during the semester as warranted and/or with student organization leadership.

Some Implications These Results Have Had On The Department And Changes Made:

1. The Diagnostic Medical Sonography program was restructured to facilitate better clinical, lab and didactic time frames for the students and learning outcomes. Additional new sonography equipment has been purchased and the department has been able to obtain two additional machines from vendors to assist with the Lab experience. We have also hired several lab assistants to help with the load and time commitment in these labs. These changes in the program have made it easier and more efficient for student sonographers to enter clinical in the second semester of the program.

2. The instructor for the Radiation Therapy resigned her position without notice fall of 2011. After discussion with the faculty in the department, the Dean and the advisory committee it was decided that we would manage the program internally and adjunct faculty would be utilized to teach the program. The first year of registry scores and pass rates increased significantly. In the summer of 2012 the new adjuncts were paid development money to update all courses, course materials and tests to meet current practice and ARRT content speciation’s.

3. Faculty teaching loads were evaluated and several reassignments were made. Additionally the Department now employs 7 new adjuncts that have helped with faculty load. We were also able to hire a new faculty member in the fall of 2011.
4. The clinical competency evaluation system requiring the verification of clinical competency by the radiologist or the supervising technologist has been revised and streamlined. This system is used to evaluate students at local and distance sites. Additionally all Radiography students must pass a re-competency program each semester in the energized labs on campus.

5. A new server has been purchased by the Department to be used for the PACS and RIS system in the department.

6. Technology enhancement has been added to a number of courses and labs.

7. The electronic bulletin board has been updated and refined to post information for students and clinical faculty. The student handbook and clinical information is also available to the clinical faculty to assist with clinical education.

8. Student evaluations of clinical education sites have been reviewed with each of the clinical sites and changes made to better facilitate the clinical education for students and provide appropriate clinical education that is required for ARRT clinical competencies.

9. The independent study program has reviewed all files and contacted student to reactivate their file for degree completion.

10. The curricula for the programs were reviewed and appropriate changes made.

11. The conference room, computer lab, and clinical energized labs have been update with new technology.

12. Perkins funds were obtained to purchase additional equipment for the department to enhance the NOVARAD PACS and RIS system.

13. A redesign of the teaching methods used in the laboratory sessions on campus.

14. Office area was resigned to accommodate better work flow and utilize space.

15. More emphasis was placed on specific subject content in some of the courses.

16. Discussion with clinical faculty coordinators on the clinical competency system has taken
There has been modification and addition of material in courses to better meet the needs of students and health care industry.

The title of our advance practice program was changed to RA program to be in compliance with state licensure laws and titles.

The department has developed a marketing plan that includes trade/professional shows and print ad materials.

D. Academic Advising

Each faculty member is responsible for advising students in the program where they have primary teaching responsibilities; however, if a faculty member is not available, then available faculty are expected to advise the students. Radiography students are advised in class about the various opportunities within medical imaging and the students rotate through the imaging modalities within the clinical setting to provide more in-depth understanding of the imaging specialities. Individual programs of study for students pursuing a baccalaureate degree are achieved through the completion of an academic contract for each student outlining the courses needed. The contract is signed by the faculty member in charge of the particular program and by the student. Academic advising materials are also placed in the student handbook for quick reference by the student. A copy is kept in the student’s file for reference and a copy is given to the student. Faculty are also available for more intense one-on-one advisement and to answer questions, give advice and are expected to be involved in advising for any program offered by the department. A student may also review their academic standings by reviewing their personal graduation evaluation from Weber State University’s Home Page.

Academic advising is assessed by the number of students who pursue additional education beyond the entry-level and complete an advanced imaging area, employment of the graduates, and by students who pursue graduate degrees. The most difficult aspect of advising is the general education and transfer credits. This responsibility has been placed on the department without a lot of resource or contacts for assistance.

Some examples of the changes that have occurred to improve student advising are listed below:

1. Academic Advisement materials placed in Student Handbook
2. Advisement issues were discussed regularly at faculty meetings

3. Academic Contracts were revised to be more user-friendly

E. Faculty

Full Time Faculty:
Seven (8) full-time faculty (FTE) are currently teaching in the Radiologic Sciences Department cluster of programs. Of the eight FTE faculty, four are male and four are female; 7 are Caucasian and 1 is of Hispanic descent. Seven faculty salaries are from E & G /legislative money and one faculty’s salary is from revenue generated from self-supporting programs.

All of the faculty are certified in radiography and in at least one additional specialized medical imaging area; two possess a doctoral degree, six have a master’s degree. In addition to specialized certification, other areas of expertise the faculty possess are pediatric radiology, gerontology, patient care and assessment, imaging pathophysiology, radiobiology, computed imaging, patient education and psycho-social medicine. The dual, and sometimes triple, certification of the faculty enhances the versatility and flexibility in conducting the programs. Below is overview of the faculty profile. Full Vita forms on all faculty are on file.

<table>
<thead>
<tr>
<th>FACULTY PROFILE</th>
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</thead>
<tbody>
<tr>
<td>Name of Faculty</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Name</td>
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<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Robert Walker</td>
</tr>
<tr>
<td>Wynn Harrison</td>
</tr>
</tbody>
</table>

Held national offices, several referred publications, chaired several national committees, served on national certification board, delegate to national organization, speaker at state, regional and national mtgs.

Held office in state and regional professional societies, delegate to professional organization, member of national committees and task force, speaker at regional and state mtgs.
<table>
<thead>
<tr>
<th>FACULTY PROFILE</th>
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</thead>
<tbody>
<tr>
<td><strong>Diane Kawamura</strong></td>
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<td></td>
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<tr>
<td><strong>Diane Newham</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Name</td>
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<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Terri Jurkiewicz</td>
</tr>
<tr>
<td>Rex Christensen</td>
</tr>
<tr>
<td>Tanya Nolan</td>
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</tbody>
</table>
## FACULTY PROFILE

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Program</th>
<th>Specializations</th>
<th>Tenure</th>
<th>Teaching Experience</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casey Neville</td>
<td>Male/White</td>
<td>MSRS</td>
<td>Radiography, MRI, CT, PACS/RIS</td>
<td>2</td>
<td>2</td>
<td>speaker at state, regional and national mtgs., publication</td>
</tr>
</tbody>
</table>

### Adjunct/Clinical Faculty:

**Adjunct Faculty**

Adjunct faculty are utilized in the programs to provide current knowledge on equipment, image interpretation, imaging procedures and patient care techniques. A profile on some of the adjunct faculty utilized in the Radiologic Sciences Program cluster is listed below:

**Clinical Faculty**

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Program</th>
<th>Specialization</th>
<th>Tenure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teira Rigby</td>
<td>Female</td>
<td>MSRS</td>
<td>Radiography</td>
<td>2</td>
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</tr>
<tr>
<td>Chris</td>
<td>Male</td>
<td>BS radiation</td>
<td>Radiation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Gender</td>
<td>Education</td>
<td>Specialization</td>
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<tr>
<td>Marston</td>
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<td>therapy</td>
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<td></td>
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</tr>
<tr>
<td>Micheal Devenport</td>
<td>Male</td>
<td>MS in Cardiac Physiology</td>
<td>DMS-Cardiac</td>
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</tr>
<tr>
<td>Shane Clampitt</td>
<td>Male</td>
<td>Enrolled in MSRS program</td>
<td>MRI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morgan Hadlock</td>
<td></td>
<td>Radiation therapy And MS in Physics</td>
<td>Radiation therapy</td>
<td></td>
<td></td>
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<tr>
<td>Shane Clampitt</td>
<td>Male</td>
<td>Enrolled in MSRS program</td>
<td>MRI</td>
<td></td>
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<tr>
<td>Ryan Hecoc</td>
<td>Male</td>
<td>MS in Radiation/medical Physics</td>
<td>Radiation therapy</td>
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<tr>
<td>Mark Fackerall</td>
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<td>MHA</td>
<td>Radiation therapy</td>
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</tbody>
</table>

**Evaluation and Mentoring**

Evaluation of full-time and adjunct faculty is obtained immediately following the course through comments solicited from the students to determine learning content and outcomes and by use of student evaluations. Clinical education sites are evaluated annually and this information is then reviewed individually with each of the clinical coordinators. Course materials are evaluated at the end of each semester. Additionally, all full-time faculty are reviewed annually at the end of the academic year.

Orientation and mentoring of new contract/adjunct faculty is accomplished through assistance with development of course materials and examinations, suggestions for teaching aids and teaching techniques, and invitations to sit in on classes to observe experienced instructors. Open communication and consultation with other faculty members is always available. Discussions at regularly-held faculty meetings provide an opportunity for contract faculty to obtain input on teaching strategies, ideas for course content, appropriate textbooks, classroom management and feedback on pedagogical approaches. Adjunct faculty are assisted in one-on-one sessions with the faculty member responsible for the program.

Faculty (full-time and adjunct) are urged to attend seminars and workshops offered on campus to develop teaching methodologies and are encouraged to participate in professional meetings and research projects to assure current knowledge is...
being taught. The Dumke College of Health Professions also provides financial support for faculty development, degree completion and research. Both full-time and adjunct faculty are eligible for these funds.

**Departmental Teaching Standards**

Teaching standards within the Department are stringent to assure students are learning and are able and competent in applying their knowledge in clinical practice with real patients. Due to the rapidly-changing technology used in medical imaging, the curricula of the program cluster must also reflect the state-of-the-art technology and procedures, to be certain the students’ education meets the employment requirements of the health care facilities. Expansion of knowledge beyond the minimum requirements for certification is stressed in order to produce graduates with critical thinking and problem-solving skills that can be readily applied in clinical practice. The faculty firmly believe all students are capable of learning, perhaps in different ways; therefore, teaching strategies are modified to meet the learning needs of the students. A variety of teaching methodologies are utilized, including lecture, demonstration, guest lecturers, computer-based learning, simulation, small-group discussion, role playing, discovery learning, supervised clinical instruction, research projects, directed readings and analysis, and one-on-one tutorial assistance.

**Determination of Teaching Effectiveness**

Teaching effectiveness is measured by the students’ preparation and performance at the clinical sites, evaluation of the course material each semester, evaluation of instructors, exit surveys, pass rates on the certification examinations, employment of graduates and employer surveys. Consultation with advisory committee members also provide insight into teaching effectiveness.

**Examples Which Illustrate The Impact of The Faculty Evaluation Process**

Standardization of student advisement
Upgraded and maintained current curricular content
Improved national certification scores
Increased student enrollment numbers in some programs
Improved teaching methodology and classroom management
Enhanced and updated clinical performance standards

Orientation of New Contract/Adjunct Faculty

Orientation of new contract/adjunct faculty is accomplished through assistance with development of course materials and examinations, suggestions for teaching aids and teaching techniques, and invitations to sit in on classes to observe experienced instructors. Open communication and consultation with other faculty members is always available. Discussions at regularly-held faculty meetings provide an opportunity for contract faculty to obtain input on teaching.

Adjunct faculty are used in the specialized imaging modalities to provide current knowledge and trends in medical imaging procedures and equipment and to provide instruction in an area of specific expertise. These individuals may be utilized as guest speakers or may be totally responsible for a course. The clinical faculty are employed by the affiliated health care facilities and assist in the clinical aspect of the programs. Each of the clinical education sites has at least one primary contact person for each of the modalities that their facility has student placed in. Vita forms on Adjunct/ Clinical faculty are on file.

Evaluation and Mentoring:
Evaluation of full-time and adjunct faculty is obtained immediately following the course through comments solicited from the students to determine learning content and outcomes and by use of student evaluations. Clinical education sites are reviewed annually and this information is then reviewed individually with each of the clinical coordinators. Course materials are evaluated at the end of each semester. Additionally, all full-time faculty are reviewed annually at the end of the academic year.

Orientation and mentoring of new contract/adjunct faculty is accomplished through assistance with development of course materials and examinations, suggestions for teaching aids and teaching techniques, and invitations to sit in on classes to observe experienced instructors. Open communication and consultation with other faculty members is always available. Discussions at regularly-held faculty meetings provide an opportunity for contract faculty to obtain input on teaching strategies, ideas for course content, appropriate textbooks, classroom management and feedback on pedagogical approaches. Adjunct faculty are assisted in one-on-one sessions with the faculty member responsible for the program.
Faculty (full-time and adjunct) are urged to attend seminars and workshops offered on campus to develop teaching methodologies and are encouraged to participate in professional meetings and research projects to assure current knowledge is being taught. The Dumke College of Health Professions also provides financial support for faculty development, degree completion and research. Both full-time and adjunct faculty are eligible for these funds.

**Examples Which Illustrate The Impact of The Faculty Evaluation Process 1994-2002:**

1. Standardization of student advisement
2. Upgraded and maintained current curricular content
3. Improved national certification scores
4. Increased student enrollment numbers in some programs
5. Improved teaching methodology and classroom management
6. Enhanced and updated clinical performance standards

**Staff:**
The Radiologic Sciences Department employs two secretarial staff positions. One secretarial position is funded through state allocated funds and the other position is funded through income generated by conducting self-supporting programs; both are female and Caucasian. Below is an overview of contract staff:

<table>
<thead>
<tr>
<th>CONTRACT STAFF PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NAME</strong></td>
</tr>
<tr>
<td>Lori Frederiksen</td>
</tr>
</tbody>
</table>
## CONTRACT STAFF PROFILE

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Position</th>
<th>Years at WSU</th>
<th>Department</th>
<th>Department</th>
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</thead>
<tbody>
<tr>
<td>Cindy Esterholdt</td>
<td>Female</td>
<td>White</td>
<td>Professional Staff—Independent Study</td>
<td>10</td>
<td>4 Department</td>
<td>Distance Learning and Outreach Education</td>
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<tr>
<td>Lonnie Lujan</td>
<td>Male</td>
<td>Hispanic</td>
<td>Professional Staff MSRS</td>
<td>6</td>
<td>1 year department</td>
<td>Advisement and MSRS</td>
</tr>
</tbody>
</table>

**Staff Mentoring and Evaluation:**
All contract staff are reviewed annually at the end of the academic year utilizing the university’s “Performance Review and Enrichment Program” (PREP) system. Contract Staff are urged to attend seminars and workshops offered on campus to provide enrichment and improve job performance. The Dumke College of Health Professions also provides financial support for staff development.

**Examples which Illustrate The Impact of The Staff Evaluation Process 1994-2002:**
1. Development of personal and professional goals each year
2. Development and maintenance of a master calendar
3. Improved office procedures and productivity

**Administrative/Budget**

E & G/Legislative: The Radiography program and one-half of the Diagnostic Medical Sonography program are the only programs funded through state-allocated funds.

Self Supporting: All other programs (self-supporting/budget-related) are operated through Continuing Education with funds being returned to the Department to cover operational costs, program growth and development.
Student Lab Fees: The Radiography students are assessed $84.00 in lab fees for the five-semester program. The Diagnostic Medical Sonography students are assessed $90.50 in lab fees over a four-semester period. These lab fees are used to maintain the equipment and purchase supplies for student use in the labs.

Private Donations: The Radiologic Sciences Department has less than $5,000.00 in private cash donations annually. The Department has little money that is used to support faculty research, scholarship or creative activities. The Dumke College of Health Professions provides financial support for faculty development, degree completion and research. Both full-time and adjunct faculty

F. Relationships with External Communities

Relationships With The External Community

The Radiography Program is affiliated with 25 health care facilities within Utah and with approximately 12 health facilities in the surrounding states. Totally, the Department of Radiologic Sciences has affiliation agreements with 300 healthcare facilities across the United States in all disciplines within the Radiologic Sciences program cluster. Each affiliate has a designated clinical coordinator assigned as the primary contact person for the program and have other professionals as designated clinical faculty to assist them. The affiliation is formalized through use of a legally-acceptable affiliation agreement which outlines the responsibilities of the health care facility and of the University in the educational process of the students.

In addition to the close contact with affiliated health care facilities, the program has advisory committees for the radiography, sonography, nuclear medicine and radiation therapy programs. The radiography advisory committee also provides input to the MRI, CT, CIT, mammography and other advanced radiography programs. The advisory committees meet at least biannually and also participate in the student selection process. Advisory committees provide valuable input into curriculum, program policies, program operation, student progress and approaches to problem situations. A complete list of advisory board members is available in the Department for review. Regular clinical visits are made by the faculty to all of the rural health facilities and local health facilities to assure students are gaining adequate education in all facets of the discipline. Copies of clinical site visits are on file for review. All affiliated clinical sites receive a Clinical Policy and Information Manual to assure that implementation of policies and procedures are consistent in all facilities.
The advisory committees and clinical faculty have been instrumental in acquiring donations of radiographic film, radiographic cassettes and other teaching aids for the programs. A major contribution is the acquisition of medical images for an up-to-date teaching file to use in the classroom and the laboratories. Each affiliate also donates the time of the clinical coordinator, who is an employee, to conduct seminars, to assess clinically student progress, to assist students who need additional guidance, and to participate in the advisory committee meetings. In addition, the health care facilities allow students to utilize state-of-the-art equipment and accessories while gaining clinical educational experience. The Department utilizes approximately 470 clinical coordinators, clinical faculty, and/or preceptors to assist the students with their clinical education. A complete list of the clinical faculty is available for review on campus. The minutes from advisory committee meeting are also available.

Facilities

The Department of Radiologic Sciences has excellent facilities:
- Three Energized Radiographic Labs
- Student Computer Lab with PACS and RIS system
- Ultrasound Lab
- Three Electronic Classrooms
- Wireless Internet Environment
- Ultrasound equipment and Phantoms

The facility is adequate to accomplish the mission and goals of the program at this time. However if the program is to grow additional space for faculty staff and students will be required.
Results of Previous Program Reviews

Overview:

This review of the Radiologic Sciences Programs was conducted as part of the Weber State University’s continuing process for those educational programs that are not currently accredited by a specialized external accrediting agency. The team utilized standards last revised in June 2004. Radiologic Sciences voluntarily withdrew from external accreditation nearly 10 years ago for financial and logistical reasons.

Radiologic Sciences as a health profession remains fragmented with numerous subspecialties each requiring a separate joint review accreditation committee. For Weber State’s RadSci program to be specialty accredited they would have to have memberships in at least 5 different organizations and would be perpetually participating in self studies and site visits.

The team reviewed the RadSci self study of November 2005 and the WSU Internal Audit of December 2005. The team had the opportunity to speak to the Dean of the Dumke College of Health Professions, Chair of Radiologic Sciences, Faculty, and Students.

The program has developed an expansive distance education program serving the Intermountain West and nation. Many of the programs are transportable and can be easily relocated to areas of need. The program has relied on continuing education funding which both allowed growth but has also raised some questions on financial accounting.

Standard A: Mission Statement

- The expected outcomes of the program were clearly defined.
The process of student accomplishments were determined and periodically assessed based upon the constituencies served by the program.

A clearly defined educational program, including a curriculum that enables graduates to achieve the mission was evidenced.

The program mission statement was appropriate to and supported the mission statements of both the college housing the program and the university.

**Standard B: Curriculum**

- The program demonstrated that the curriculum for each degree and for any general education/service courses offered by the program is the result of thoughtful curriculum planning and review processes.
- The curriculum was consistent with the program's mission.
- The program demonstrated that there is an appropriate allocation of resources for curriculum delivery that is consistent with the mission of the program, the number of graduates, and the number of major/minor and general education SCHs produced.
  - See recommendations at end of report
- Department courses supported the major/minor/general education/service programs and are offered on a regular basis to ensure students are able to complete graduation requirements in a timely manner.

**Standard C: Student Learning Outcomes and Assessment**

**Outcomes**

- Students achieved the expected knowledge, skills, and behaviors at the time of graduation.
- Student learning outcomes supported the goals of the program and the constituencies served.
- Student learning outcomes are directly linked to the program's curriculum.
• **Assessment**
  - A set of measures for assessment were clearly defined and appropriately applied.
  - The department demonstrated that they are using assessment measures in a systematic manner on a regular basis.
  - The department demonstrated that the assessment of the program mission and student outcomes was being used to improve and further develop the program.

**Standard D: Academic Advising**
- The department had a clearly defined strategy for advising their major/minor or BIS students that is continually assessed for its effectiveness.
  - Significant advising is done by the DCHP advisors
- Students receive appropriate assistance in planning their individual programs of study.
- Students receive needed assistance in making career decisions and in seeking placement, whether in employment or graduate school.

**Standard E: Faculty**
- The faculty size, composition, qualifications, and professional development activities reflected a planning process which is consistent with the program’s mission.
  - See recommendations at end of report
- The department maintained a minimal core of full-time faculty sufficient to provide stability and ongoing quality improvement for the degree programs offered.
• The contract/adjunct faculty who provide instruction to students (day/evening, off/on campus) were academically and professionally qualified.

• The department demonstrated efforts to achieve demographic diversity in its faculty.

• The university/college had appropriate procedures for the orientation of new contract/adjunct faculty starting in the summer
  o Due to workloads, new faculty gets minimal departmental mentoring. See recommendations.

• Processes were in place to determine appropriate teaching assignments and service workloads, to guide and mentor contract/adjunct faculty, and to provide adequate support for activities which implement the program’s mission.

• Teaching was systematically monitored to assess its effectiveness, and revised periodically to reflect new objectives and to incorporate improvements based on appropriate assessment methods. For both contract and adjunct faculty, there is evidence of:
  o Effective creation and delivery of instruction was evidenced
    ▪ Efficiency is not being maximized with alternative instructional technology due to faculty overload providing teaching.
  o Ongoing evaluation and improvement of instruction was evidenced
  o Innovation in instructional processes were present in the teaching modules and computerized case studies
  o A formal, periodic review process existed for all faculty

**Standard F: Program Support**

• The number and capabilities of the support staff was adequate to meet the mission and objectives of the program.
  o (Program is replacing a recent death of a secretary)
  o Site team supports permanent (E&G) funding of clinical lab manager

• Administrative support was present in assisting in the selection and development of support staff.

• The facilities, equipment, and library support needs were adequate to meet the mission and goals of the program.
Large class room facilities appear to be limited.
Clinical lab facilities are outstanding. It is assumed that a digital radiography imaging system purchase will be implemented in the very near future.

**Standard G: Relationship with External Communities**

- Formal relationships between the program and external communities of interest existed and were clearly defined.
- External relationships had a clearly defined role and evidence of their contribution to the program (curriculum, equipment, faculty, budget, etc) were demonstrated.
- The program had an active external advisory committee, that meets regularly
  - Minutes of the meetings were made available.

**Standard H: Program Summary**

- The program demonstrated how it has implemented most of the recommendations from the previous review and what effect these changes had on the program.
  - 5/2 year equipment plan was developed
  - Department needs to formalize purchase plans with higher administration
  - Periodic student evaluation of clinical sites was completed
  - PAR's and accounting practices with Continuing Education have improved
- Site visit team does not recommend the need for individual program accreditation. For Weber State’s RadSci program to be specialty accredited they would have to have memberships in at least 5 different organizations and would be perpetually participating in self studies and site visits.
  - The national trend for multidisciplinary programs appears to be quickly moving towards internal institutional review
- The team supports the RadSci commitment and direction with the RPA and RA program. Site team suggests that university legal counsel review any potential conflict of interest raised in the previous self study.
- The education between the campus and distance ed was consistent
Laudatory Comments:

- Intense satisfaction was noted in the department’s ability to provide education for all localities.
- Well deserved, intense pride was noted in the national notoriety and demonstrated quality of the program.
- The faculty seemed willing to work with each other and teach any area of the curriculum.
- Program should be commended for progressive approaches to curriculum changes and healthcare delivery.
  - Program wants to develop a women’s imaging degree and Masters degrees in Dosimetry and RPA (The site team strongly supports this movement).
- Program assessment is excellent from an advisory committee, department and university perspective.
- Students stated both DCHP and departmental advising was seamless throughout their education.
- Faculty was commended by students for meeting their needs and responding to questions.
- Faculty was confident in the supportive leadership of Bob Walker, Chair.

Areas of Concern / Recommendations

- The site visitors sensed that the RadSci faculty is strained.
  - Faculty appeared to show signs of stress due to course teaching load.
  - Due to teaching loads, the experienced faculty may not have time for new faculty promotion and tenure mentoring.
  - Workload and obvious stress factors could ultimately harm new faculty recruitment.
- The computation of the RadSci teaching load is somewhat unique and does not neatly fit into the standard DCHP or University model.
  - Site visitors suggest that RadSci develop a faculty load model that can be readily understood.
- Site team supports permanent (E&G) funding of clinical lab manager. This would help reduce the strain on the current teaching faculty.
• Site visitors have concern that all students may not be getting comparable clinical opportunities, patient mix and availability to complete competencies.
  o In the future, the designated clinical coordinator for the department must assure equal opportunities for all students.
    • Students in small clinics and hospitals may need to be rotated to larger facilities
• Some students expressed concerns that program produced materials which may not be up to date in terminology and some assignments did not appear to have relevancy
  o Program should review current materials and update as appropriate
• Available campus technology is currently under-utilized in decreasing teaching workload and stress.
  o Usage of a university approved electronic grade book should be considered
  o Blended (hybrid) and stand alone web courses should be developed
    • Student technology consultants for increased web based projects should be utilized

  o In the future, the designated clinical coordinator for the department must assure equal opportunities for all students.
    • Students in small clinics and hospitals may need to be rotated to larger facilities. All Student must meet the same ARRT clinical competency for certification

**Department of Radiologic Sciences Response:**

• Some students expressed concerns that program produced materials which may not be up to date in terminology and some assignments did not appear to have relevancy
  o Program should review current materials and update as appropriate
• Available campus technology is currently under-utilized in decreasing teaching workload and stress.
  o Usage of a university approved electronic grade book should be considered
  o Blended (hybrid) and stand alone web courses should be developed
    • Student technology consultants for increased web based projects should be utilized
G. **Action Plan for Ongoing Assessment Based on Current Self Study Findings**

**Action Plan for Evidence of Learning Related Findings**

Implement the pre and post testing for direct measurements of learning.  
Make appropriate changes as warranted.  
Continue to evaluate teach load and need for new faculty.

**Action Plan for Staff, Administration, or Budgetary Findings**

Work with the development office and the capital campaign  
Monitor need for additional staff, hourly help and/ student aids  
Hire more teaching assistants in the future.

**Summary of Artifact Collection Procedure**

The departments is keeping a collection of student artifacts from each course to include such things case studies, papers, images obtained in the labs and clinical evaluations. This will be digital information that will be contained in our departmental PACS and RIS system. Students that complete an AAS, BS and/or MSRS degrees will have a portfolio of artifacts for each level of education.

**Student and Faculty Statistical Summary**
<table>
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<tbody>
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<td><strong>Student Credit Hours Total</strong></td>
<td><strong>21,102</strong></td>
<td><strong>20,121</strong></td>
<td><strong>19,100</strong></td>
<td><strong>18,129</strong></td>
<td><strong>17,041</strong></td>
<td><strong>16,045</strong></td>
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<td>Diagnostic Medical Sonography</td>
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<td>Radiation Therapy</td>
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<td>1,254</td>
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<tr>
<td>Radiography</td>
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<td>16,272</td>
<td>15,121</td>
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<td><strong>Student FTE Total</strong></td>
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<td><strong>670.70</strong></td>
<td><strong>636.67</strong></td>
<td><strong>604.30</strong></td>
<td><strong>568.03</strong></td>
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<td><strong>Student Majors</strong></td>
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<td>Diagnostic Medical Sonography</td>
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<td>107</td>
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<td>Radiography</td>
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<td>Bachelor Degree</td>
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<td><strong>Student Demographic Profile</strong></td>
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<td><strong>755</strong></td>
<td><strong>779</strong></td>
<td><strong>784</strong></td>
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<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Adjunct FTE</td>
<td>Contract FTE</td>
<td>Student/Faculty Ratio</td>
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</table>

*Student majors include pre-professional programs*

**Student Credit Hours Total** represents the total department-related credit hours for all students per academic year. Includes only students reported in Banner system as registered for credit at the time of data downloads.

**Student FTE Total** is the Student Credit Hours Total divided by 30.

**Student Majors** is a snapshot taken from self-report data by students in their Banner profile as of the third week of the
Fall term for the academic year.

<table>
<thead>
<tr>
<th><strong>Program Graduates</strong> includes only those students who completed all graduation requirements by end of Spring semester for the academic year of interest. Students who do not meet this requirement are included in the academic year in which all requirements are met. Summer is the first term in each academic year.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Demographic Profile</strong> is data retrieved from the Banner system.</td>
</tr>
</tbody>
</table>
**Faculty FTE** is the aggregate of contract and adjunct instructors during the fiscal year. **Contract FTE** includes instructional-related services done by "salaried" employees as part of their contractual commitments. **Adjunct FTE** includes instructional-related wages that are considered temporary or part-time basis. Adjunct wages include services provided at the Davis campus, along with online and Continuing Education courses.

**Student/Faculty Ratio** is the Student FTE Total divided by the Faculty FTE Total.

**Financial Analysis Summary**
External Community Involvement Names and Organizations

Students have provided AHEC presentations and provided information about the Radiologic Sciences Programs at career fairs, such as Majorfest. They have provided service in the support of ACERT by providing direction, documents, and information to the professional conference attendees. These students provided time and volunteered as patients to further the education and support of students involved in sonography education. Andrea Nelsen and Taylor Thornley dedicated several hours to help produce and promote a food drive dedicated to the YCC of Ogden, UT. Also, Taylor volunteered several hours (8 per semester) to a local hospice center and organized and ran a 5K in response to raising money for the cause. Jeremy Cook provided service to the people of Jiamusi and the children of Yangpu elementary in conjunction with his study abroad in China. He has also given several hours (8 per semester) to the local desert industries. Jeremy Bennett dedicates a great deal of his time for a support group of parents dealing with children suffering from brittle bone disease. Other projects that have been discussed to be completed in the month of December: breast cancer awareness fund raisers, sub-for-santa, working in a soup kitchen, and providing ski lessons for disabled.

External Community Involvement Financial Contributions

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<td><strong>Total</strong></td>
<td><strong>$91,164.18</strong></td>
</tr>
</tbody>
</table>