ACADEMIC PREPAREDNESS AND CAREER DEVELOPMENT

CERTIFICATE OF COMPETENCY

Description

The Certificate of Competency in Academic Preparedness and Career Development prepares advanced-level students with the English language and literacy skills needed to function independently in most vocational and academic situations. The certificate focuses on developing the requisite level of grammar, reading, writing and speaking skills needed to transition into mainstream courses or to be successful in seeking appropriate employment.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- 1. Demonstrate ability to produce and comprehend advanced grammatical structures at a level sufficient to transition to ENG 56 and/or English 1A.
- 2. Demonstrate ability to write coherent expository essays and/or summary-responses at a level sufficient to transition to ENG 56 and/or English 1A.
- 3. Demonstrate grammar, listening, speaking, and reading skills needed to clearly communicate and understand information and ideas in personal, academic, and vocational settings.

Program Requirements:

Required Courses

Course Block Units: (0 Required)

ESL540A and	Low-Advanced Grammar
ESL516A or	Academic Reading and Writing for ESL 1
ESL516B	Academic Reading and Writing for ESL 2

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ACADEMIC PREPAREDNESS AND CAREER DEVELOPMENT

CERTIFICATE OF ADVANCEMENT

Description

The Certificate of Advancement in Academic Preparedness and Career Development prepares advanced level students with the English language and literacy skills needed to function independently in most vocational and academic situations. The certificate focuses on developing the requisite level of grammar, reading, writing and speaking skills needed to transition into mainstream courses or to be successful in seeking appropriate employment.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- 1. Demonstrate ability to write coherent expository essays and/or summary-responses at a level sufficient to transition to ENG 56 or ENG 1A.
- 2. Demonstrate ability to produce and comprehend advanced grammatical structures at a level sufficient to transition to ENG 56 or ENG 1A.
- 3. Demonstrate grammar, listening, speaking, and reading skills needed to clearly communicate and understand information and ideas in personal, academic, and vocational settings.

Program Requirements:

Required Courses		Course Block Units: (7 Required)
ESL40A and	Low-Advanced Grammar	3
ESL116A or	Academic Reading and Writing for ESL 1	4
ESL116B	Academic Reading and Writing for ESL 2	4

Total: 7

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Yuba College Course Outline

Course Information

Course Number: MATH 121 Full Course Title: Algebra Support for Trigonometry Short Title: Trig Support TOP Code: -Effective Term:

Course Standards

Course Type: Credit - Not Degree Applicable Units: 1.0 Total class hours: 54.0 Total contact hours in class: 18.0 Lecture hours: 18.0 Hours outside of class: 36.0 Repeatable: No Grading Method: Pass/No Pass Only

Minimum Qualifications for Instructors

• Mathematics (Masters Required)

Course Description

A review of prerequisite skills and concepts needed in trigonometry. Intended for students who are concurrently enrolled in Math 21, Plane Trigonometry, at Yuba College. Topics include concepts from algebra and geometry that are needed in order to understand topics covered in trigonometry.

Conditions of Enrollment

Concurrent enrollment or satisfactory completion of: MATH 21

Content

- 1. Arithmetic Review
 - a. Operations and simplifying fractions
- 2. Solving Equations
 - a. Linear equations
 - b. Quadratic equations
 - c. Quadratic in form
 - d. Equations that contain rational or radical expressions
- 3. Radicals
 - a. Simplifying radicals
 - b. Rationalizing the denominator

- 4. Graphing
 - a. Cartesian Plane Quadrants and properties of points in each quadrant
 - b. Locate and find intercepts of a graph and equation
 - c. Transformations of functions and symmetry of graphs
 - d. Even and Odd functions
 - e. Domain and Range
 - f. Local Maximum and Minimum
 - g. Graph the inverse of a function
- 5. Distance Formula
- 6. Pythagorean Theorem
- 7. Factoring
- 8. Conversions of units
- 9. Inverses
 - a. Determine if a function is one-to-one
 - b. Limit the domain to make a function one to one
 - c. Find the inverse of a function
- 10. Complex Numbers
 - a. Perform operations with complex numbers
 - b. Graph complex numbers
- 11. Geometry
 - a. Find perimeters and areas of shapes
 - b. Know terminology and properties of angles
- 12. Mathematical modeling
 - a. Reading comprehension for application problems
 - b. Choosing appropriate models to solve application problems
- 13. Effective Learning Skills

Objectives

- 1. Be able to perform operations and simplify fractions.
- 2. Be able to recognize and solve different types of equations. **Requires Critical Thinking**
- 3. Be able to simplify radical expressions and rationalize denominators with radicals as found in evaluating trigonometric functions and solving trigonometric equations. ****Requires Critical Thinking****
- Recognize and perform transformations, reflections and stretching and shrinking of trigonometric parent functions. **Requires Critical Thinking**
- 5. Be able to determine if an equation or graph is even or odd. **Requires Critical Thinking**
- 6. Given a function be able to tell if it is a one to one function. Recognize how to make a function one to one by limiting the domain. Be able to find the inverse of a one to one function. Know the relationships between a function and it's inverse. **Requires Critical Thinking**
- 7. Be able to factor difference of squares, quadratics, and be able to factor by grouping. ****Requires Critical Thinking****
- 8. Perform operations with and be able to graph complex numbers. **Requires Critical Thinking**
- 9. Solve application problems. **Requires Critical Thinking**
- 10. Looking at two parallel lines and a transversal line be able to tell if angles are congruent. Know terminology and properties of angles. ****Requires Critical Thinking****

- 1. 1. Upon completion of this course, the student should be able to apply numerical, algebraic and graphical reasoning to support topics in trigonometry.
 - **Computation** Students will use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.

Methods of Instruction

- Laboratory
 Interactive learning activities and group work.
- Lecture/Discussion Interactive lecture and discussions, in class exercises, group work, etc..

Assignments

Other Assignments

A set of problems from the end of each section in the textbook and/or related problems on an online homework software program.

Methods of Evaluation

- Exams
- Homework
- Participation
- Problem Solving Exercises
- Quizzes
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. Lial/ Hornsby/ Shneider and Daniels. Trigonometry, 11th ed. Pearson, 2017, ISBN: 978-0-13-421743-7

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Yuba College Course Outline

Course Information

Course Number: RADT 1 Full Course Title: Fundamentals of Radiologic Science and Health Care Short Title: Rad Sci Fund TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 4.0 Total class hours: 216.0 Total contact hours in class: 72.0 Lecture hours: 72.0 Hours outside of class: 144.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

Radiological Technology

Course Description

Introduction to the field of Radiologic Technology. Basic imaging principles, patient diversity and care, the clinical environment, patient vital signs, and communication.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into the Radiologic Technology Program.

Content

- 1. Introduction to Imaging
- 2. Professional Organizations
- 3. Introduction to Critical Thinking
- 4. Introduction to the Clinical Environment
- 5. Hosptial Adminstration
- 6. Radiographic Equipment
- 7. Radiobiology
- 8. General Patient Care
 - a. Obtaining vital signs
 - b. Infection control
 - c. Emergency situations

- d. Patient immobilization and transportation
- e. Sterile/Non sterile techniques
- f. Handwashing
- 9. Diversity and Patient Care
- 10. Professionalism and Medical Ethics
- 11. Health Information Management
- 12. Basic Radiation Protection and Imaging Principles

Objectives

- 1. Describe patient vital signs and discuss their significance in the assessment of patient condition.
- 2. Discuss and demonstrate the appropriate methods of sterile/non-sterile techniques.
- 3. Recognize appropriate patient care for patients of various ages, cultures and disabilities. ****Requires** Critical Thinking**
- 4. Identify the basics of radiation production and imaging procedures. **Requires Critical Thinking**
- 5. Define credentialing, national certification and registration and state licensure.
- 6. Identify state and federal regulatory agencies.
- 7. Apply the word-building process of medical terminology.
- 8. Interpret medical abbreviations and symbols.
- 9. Describe relationships and interdependencies of departments within a health care institution.

Student Learning Outcomes

- 1. Upon completion of this course, students will identify aseptic technique
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 2. Upon completion of this course, students will identify correct position of chest tubes/lines in radiography.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 3. Upon completion of this course, students will illustrate human diversity.
 - Global Awareness Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
- 4. Upon completion of this course, students will identify elements of effective history taking for a radiologic exam.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Global Awareness Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.

Methods of Instruction

- Lecture/Discussion
- Powerpoints Scenarios Videos Case Studies Discussion Demonstration
- Studio/Activity

After discussing sterile technique, you will be given sterile equipment and demonstrate the skill discussed in the lecture.

Assignments

Reading Assignments

Review a video and answer questions related to the video for class discussion.

Read Chapter 1 and answer the review questions.

Writing Assignments

Research a given culture and how it relates to radiologic technology. Prepare and submit a written report as well as an oral presentation to the class.

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Oral Tests/Class Performance
- Portfolio
- Problem Solving Exercises
- Quizzes
- Research Project
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

- 1. Adler, Arlene and Richard Carlton. *Introduction to Radiography and Patient Care,* 7 ed. Elsevier, 2019, ISBN: 978-0-323-56671-1
- 2. Davi Ellen Chabner. Medical Terminology, 8 ed. Elsevier, 2017, ISBN: 978-0-323-4984-4

Other:

1. Subscription to RadTech Boot Camp - video/quizzing/interactive tool for learning. https://www.radtechbootcamp.com

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Yuba College Course Outline

Course Information

Course Number: RADT 2 Full Course Title: Radiation Physics and Equipment Short Title: Rad Phys and Equip TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 4.0 Total class hours: 216.0 Total contact hours in class: 65.0 Lecture hours: 65.0 Hours outside of class: 144.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Introduction to radiation physics; fundamentals of x-ray equipment; x-ray production and x-ray beam characteristics.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program.

Content

Course Lecture Content

- 1. Radiation physics concepts
- 2. Electromagnetic radiation
- 3. X-ray imaging system
- 4. Image quality
- 5. Production and characteristics of radiation
- 6. Basic radiation protection as it relates to x-ray production

Objectives

- 1. Describe the general components and function of the x-ray circuit to include the tube and filament circuits. **Requires Critical Thinking**
- 2. Discuss various photon interactions with matter.
- 3. Describe image quality and characteristics **Requires Critical Thinking**
- 4. Discuss exposure technique selection. **Requires Critical Thinking**

Student Learning Outcomes

- 1. Upon completion of this course, student will identity subject factors that affect radiographic quality
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 2. Upon completion of this course, student will compute the intensity of radiation.
 - **Computation** Students will use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 3. Upon completion of this course, student will describe Bremsstrahlung and Characteristic radiation.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
- 4. Upon completion of this course, student will recall properties of magnetism.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.

Methods of Instruction

- Lecture/Discussion
 Power Points Demonstrations Videos Class Discussions Lecture Hands on activities
 Other in the second se
- Studio/Activity Using the energized lab, demonstrate scatter radiation.

Assignments

Reading Assignments

1. Read and outline Chapter 2.

Other Assignments

- 1. Using material provided, create a circuit.
- 2. Using the energized laboratory, demonstrate the 15% rule.
- 3. Watch the video (on Rad Tech bootcamp) on X-ray production and answer the quiz questions.

Methods of Evaluation

• Essay/Paper

- Exams
- Homework
- Laboratory Assignments
- Participation
- Portfolio
- Problem Solving Exercises
- Quizzes
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. James Johnston and Terri Fauber. *Essentials of Radiation Physics and Imaging*, 3 ed. Elsevier , 2020, ISBN: 978-0-323-56668-1

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Yuba College Course Outline

Course Information

Course Number: RADT 3A Full Course Title: Radiographic Procedures 1 Short Title: Rad Procedures 1 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 3.0 Total class hours: 3.0 Total contact hours in class: 90.0 Lecture hours: 36.0 Lab hours: 54.0 Hours outside of class: 72.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Knowledge and skills necessary to perform standard radiographic procedures that are of optimal diagnostic quality. Skills necessary for image critique. Areas studied: thorax, abdomen, pelvis and upper and lower extremities.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program -

Content

- 1. Radiographic terminology
- 2. Radiographic anatomy, positioning, and pathology
 - a. Thorax
 - b. Abdomen
 - c. Pelvis
 - d. Extremities (upper and lower)

Course Lab/Activity Content

Laboratory:

- 1. Radiographic positioning demonstrations:
 - a. Thorax
 - b. Abdomen
 - c. Pelvis
 - d. Extremities (upper and lower)
- 2. Image Critique
- 3. Lab experiments

Objectives

- 1. Describe general procedural considerations for radiographic examinations. ****Requires Critical Thinking****
- 2. Identify anatomy on radiographic images.
- 3. Explain the routine and special positions and projections for all radiographic procedures.
- 4. Simulate radiographic procedures on a person or phantom in a laboratory setting. ****Requires Critical Thinking****
- 5. Apply general radiation safety and protection practices associated with radiographic examinations.

Student Learning Outcomes

- 1. Upon completion of this course, students will Identify anatomy of the human chest.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 2. Upon completion of this course, students will label the bones of the wrist.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 3. Upon completion of this course, students will choose the correct abdominal examination needed based on patient symptoms.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Methods of Instruction

- Laboratory
 Scenarios Simulations Discussion Demonstration Experiments
- Lecture/Discussion
 Powerpoints Discussion Demonstrations Scenarios Simulations

Assignments

Reading Assignments

Read Chapter one.

Other Assignments

Students are to create a positioning spreadsheet.

Students will label the anatomy seen on an x-ray image.

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Oral Tests/Class Performance
- Portfolio
- Problem Solving Exercises
- Quizzes
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. John Lampignano and Leslie Kendrick. *Textbook of Radiographic Positioning and Related Anatomy*, 9 ed. Elsevier, 2017, ISBN: 9780323399661

Manuals:

1. John Lampignano and Leslie Kendrick. *Workbook for Textbook of Radiographic Positioning and Anatomy,* 9 ed. Elsevier, 2017, ISBN: 9780323481878

Other:

1. Bontragers Handbook of Radiographic Positioning and Techniques, 9th edition ISBN 9780323485258

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Yuba College Course Outline

Course Information

Course Number: RADT 3C Full Course Title: Radiographic Procedures 3 Short Title: Rad Procedures 3 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 3.0 Total class hours: 162.0 Total contact hours in class: 54.0 Lecture hours: 54.0 Hours outside of class: 108.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

Radiological Technology

Course Description

Study of fluoroscopy, contrast studies, pharmacology as it relates to the imaging sciences, and completion of venipuncture certification.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program

Content

- 1. Enhanced medical and radiologic terminology
- 2. Radiographic anatomy, positioning, and pathology
 - Contrast Studies
 - Venipuncture
 - Pharmacology
 - Fluoroscopy

Objectives

- 1. Explain the pharmacology of contrast agents. **Requires Critical Thinking**
- 2. Demonstrate appropriate venipuncture technique.
- 3. Explain image-intensified, flat panel and pulsed fluoroscopy. **Requires Critical Thinking**
- 4. Indicate the purpose, construction and application of the fluoroscopic monitor. ****Requires Critical Thinking****
- 5. Describe the patient preparation for contrast studies.
- 6. Describe the symptoms and medical interventions for a patient with a contrast agent reaction.

Student Learning Outcomes

- 1. Upon completion of this course, students will identify contraindications to contrast media.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Critical Thinking Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 2. Upon completion of this course, students will list the steps to perform venipuncture.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 3. Upon completion of this course, students will create a patient brochure.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Methods of Instruction

- Lecture/Discussion
 Power Points Videos Lecture Discussion Modeling Demonstration
- Other
 Demonstration Simulation

Assignments

Reading Assignments Read 4 ASRT modules on Fluoroscopy Writing Assignments

Case studies

Other Assignments

Venipuncture simulator

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Portfolio
- Problem Solving Exercises
- Quizzes
- Research Project
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. John Lampignano and Leslie Kendrick. *Textbook of Radiographic Positioning and Related Anatomy,* 9th ed. Elsevier, 2018, ISBN: 978032339961

Manuals:

1. John Lampignano and Leslie Kendrick. *Workbook of Radiographic Positioing and Related Anatomy*, 9th ed. Mosby, 2017, ISBN: 9780323481878

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Yuba College Course Outline

Course Information

Course Number: RADT 4 Full Course Title: Principles of Radiation: Biology, & Protection Short Title: Rad Protection TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 2.0 Total class hours: 108.0 Total contact hours in class: 36.0 Lecture hours: 36.0 Hours outside of class: 72.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

Radiological Technology

Course Description

Principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program.

Content

- 1. Effects of ionization on human cells, tissues and organs
 - a. Radiation syndromes
 - b. Genetic effects
 - c. Somatic effects
- 2. Radiation detection and measurement
- 3. Personnel protection
- 4. Radiation dose-limiting standards
- 5. Regulatory radiation agencies

Objectives

- 1. Discuss the 5 x-ray interactions with matter, significance, importance, and the characteristics of each. **Requires Critical Thinking**
- 2. Define radiation and radioactivity units of measure. **Requires Critical Thinking**
- 3. Discuss the design of radiologic equipment in regards to radiation safety. **Requires Critical Thinking**
- 4. Describe the theory and operation of radiation detection devices.
- 5. List the various cellular components, identify their physical characteristics and functions, and identify the radiosensitivity of cells. **Requires Critical Thinking**
- 6. Differentiate between somatic and genetic radiation effects, stochastic and late tissue effects, and discuss specific diseases or syndromes associated with them.
- 7. Identify effective dose limits for occupational and non-occupational radiation exposure.

Student Learning Outcomes

- 1. Upon completion of this course, students will identify early tissue reactions to radiation exposure.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
- 2. Upon completion of this course, students will identify radiation dose limits.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.

Methods of Instruction

Lecture/Discussion

Lecture - Screencasts Power Point - Screencasts Discussions Scenarios Case Studies Videos

Distance Education

Delivery Methods

- Online
- Hybrid

Assignments

Reading Assignments

Chapters in Textbook

Writing Assignments

Prompt: Please respond to the following question with information you have learned in Unit 2 and through your experience in the clinical site.

A patients asks what happens to their body when the x-ray enters it. How would you explain how x-rays interact with matter to a patient?

Other Assignments

Please watch/listen to the following webinar Radiation Protection.

Please answer the following questions:

How does radiation affect cells and tissues?

How do you minimize patient exposure?

Describe the 5 possible x-ray interaction with matter.

How can you minimize occupational exposure?

Describe the Acute Radiation Syndromes.

What is the recommended annual occupational effective dose limit for the whole body?

List examples of stochastic (non-threshold) biological effects of radiation.

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Portfolio
- Problem Solving Exercises
- Quizzes
- Research Project
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

- 1. Statkiewicz Sherer, Mary Alice; Visconti, Paula J and Ritenour, E. Russell . *Radiation Protection in Medical Radiography*, 8th ed. Elevier, 2017, ISBN: 9780323446662
- Kelly Haynes. Mosby's Radiography Online: Radiobiology and Radiation Protection, 3rd Edition, 3 ed. Mosby, 2017, ISBN: 9780323417877

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Yuba College Course Outline

Course Information

Course Number: RADT 55 Full Course Title: Introduction to Radiologic Sciences Short Title: Intro Rad Sci TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Spring 2019

Course Standards

Course Type: Credit - Degree Applicable Units: 1.0 Total class hours: 18.0 Total contact hours in class: 18.0 Lecture hours: 18.0 Hours outside of class: 36.0 Repeatable: No Grading Method: Letter Grade or Pass/No Pass

Minimum Qualifications for Instructors

Radiological Technology

Course Description

Introduction to the field of Radiologic Sciences and expectations of the program. Refresher course for program prerequisites.

Conditions of Enrollment

Acceptance into the Radiologic Technology Program.

Content

- 1. Review program prerequisites
 - a. Math
 - b. Anatomy
 - c. Physiology
 - d. English writing skills
- 2. Orientation to the program's academic and administrative structure
- 3. Clinical expectations
- 4. Introduction to program reporting and documentation systems

Objectives

- 1. Identify prerequisites required for program entry.
- 2. Discuss program requirements.
- 3. Discuss clinical expectations.

Student Learning Outcomes

- 1. Upon completion of this course, student will demonstrate correct grammar usage.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.

Methods of Instruction

Lecture/Discussion
 Lecture Class Discussion

Assignments

Reading Assignments

Chapter 4 - Grammer

- Eight Parts of Speech
- Nine Important Terms to Understand
- <u>Ten Common Grammatical Mistakes</u>
- <u>Five Suggestions for Success</u>
- <u>Fifteen Troublesome Word Pairs</u>

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Problem Solving Exercises
- Quizzes

Course Materials

Textbooks:

1. HESI. HESI Assessment Exam Review, 4 ed. Evolve, 2017, ISBN: 978-0-323-353786

Other:

1. HESI Assessment Exam

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Yuba College Course Outline

Course Information

Course Number: RADT 6A Full Course Title: Radiologic Technology Internship 1 Short Title: Rad Tech Intern 1 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 5.5 Total class hours: 300.0 Total contact hours in class: 300.0 Lab hours: 300.0 Repeatable: No Grading Method: Pass/No Pass Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Beginning radiologic experience in clinical facilities under the supervision of the college instructor, staff technologists, and clinical instructors. Basic development of skills in correlation with current radiologic practices. Rotation in various facilities.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into the Radiologic Technology Program.

Course has additional enrollment fees: Radiation Badge Fee is attached to this course. Students will have access to the reading each month and when they exit the program they will be able to download a permanent record to present to employers. Additionally, a record will be kept by the program in perpetuity.

Content

Course Lecture Content

Course Lab/Activity Content

- 1. Daily operations
 - a. Learn clinical facility policy and procedures
 - b. Learn department policy and procedures
 - c. Learn department protocols
 - d. Learn department RIS and PACS

- 2. Radiologic techniques, all at the student beginning level of expertise
 - a. Radiation protection
 - b. Universal precautions
 - c. Image critique
- 3. Positioning procedures
 - a. Extremities
 - b. Chest
 - c. Abdomen
 - d. Upper Extremities
 - e. Lower Extremities
- 4. Student beginning level ability to work with patients of varying cultures, abilities, ages, and mental alterations.

Objectives

- 1. Examine procedure orders for accuracy and make corrective action when applicable. ****Requires Critical Thinking****
- 2. Assess the patient and record clinical history. **Requires Critical Thinking**
- 3. Execute medical imaging procedures under the appropriate level of supervision.
- 4. Provide patient-centered, clinically effective care for all patients regardless of age, gender, ability, needs, ethnicity, or culture. **Requires Critical Thinking**

Student Learning Outcomes

- 1. Upon completion of the course, student will demonstrate radiation protection.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 2. Upon completion of the course, student will model professionalism.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 3. Upon completion of the course, student will show effective communication skills.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.

Methods of Instruction

- Laboratory
 - Hands-on 1-1 training in clinical setting

Assignments

Other Assignments

Review textbook on the procedures for taking X-rays of patients in clinical setting.

Documentation of exams.

Methods of Evaluation

- Laboratory Assignments
- Participation
- Portfolio
- Problem Solving Exercises
- Skills Demonstrations/Performance Exam

Course Materials

Other:

- 1. Bontragers Handbook of Radiographic Positioning and Techniques, 9th edition ISBN 9780323485258 (Purchased in 3-A)
- 2. Trajecsys Clinical Recordkeeping for Health Education
- 3. Onboarding requirements for facilites each facility has it's own requirements.

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Yuba College Course Outline

Course Information

Course Number: RADT 6D Full Course Title: Radiologic Technology Internship 4 Short Title: Rad Tech Intern 4 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 8.0 Total class hours: 436.0 Total contact hours in class: 436.0 Lab hours: 436.0 Repeatable: No Grading Method: Pass/No Pass Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Advanced radiologic experience in clinical facilities under the supervision of the college instructor, staff technologists, and radiologists. Development of enhanced skills in correlation with current radiologic practices. Rotation in various facilities.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into the Radiologic Technology Program

Content

- 1. Advancing Ability to Perform Daily Operations
 - a. Hospital and department specific policies and procedures
- 2. Advancing Ability to Perform Radiologic Techniques
 - a. Radiation protection
 - b. Infection control
 - c. Image critique
 - d. Quality control
- 3. Advancing Ability to Perform Positioning Procedures
 - a. Extremities
 - b. Spine and pelvis
 - c. Thorax

- d. Skull
- e. Abdomen
- f. Contrast studies
- g. Surgical procedures
- h. Portable procedures
- 4. Advancing Ability to Work with Multicultural and Disabled Patients

Course Lab/Activity Content

- 1. Daily Operations of facility radiology department and teamwork.
- 2. Radiologic Techniques at the student advanced level of expertise
 - a. Radiation protection
 - b. Communication
 - c. Image critique
- 3. Positioning of all exams previously studied at a student advanced level of expertise
- 4. Advanced ability to image patients of varying cultures, abilities, ages, and mental status.
- 5. Radiologic Positioning
 - a. Contrast studies
 - b. Fluoroscopy
 - c. Trauma
 - d. Operating Room
 - e. Pediatrics

Objectives

- 1. Adhere to team practice concepts.
- 2. Communicate with patients at a level appropriate for the patient's age, medical condition, and abilities. **Requires Critical Thinking**
- 3. Demonstrate radiation protections skills. **Requires Critical Thinking**
- 4. Select technical factors to produce diagnostic images with the lowest radiation exposure possible.
- 5. Execute medical imaging procedures under the appropriate level of supervision. ****Requires Critical Thinking****

Student Learning Outcomes

- 1. Upon completion of the course, student will show effective communication skills.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 2. Upon completion of the course, student will model professionalism.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Global Awareness Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 3. Upon completion of the course, student will demonstrate radiation protection.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.

• **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.

Methods of Instruction

- Other
 - Hands-on 1-1 training in clinical setting.

Assignments

Other Assignments

Students are required to demonstrate competency of skills by successfully performing exams.

Methods of Evaluation

- Laboratory Assignments
- Participation
- Portfolio
- Problem Solving Exercises
- Skills Demonstrations/Performance Exam

Course Materials

None

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Yuba College Course Outline

Course Information

Course Number: RADT 6E Full Course Title: Radiologic Technology Internship 5 Short Title: Rad Tech Intern 5 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 8.5 Total class hours: 464.0 Total contact hours in class: 464.0 Lab hours: 464.0 Repeatable: No Grading Method: Pass/No Pass Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Advanced radiologic experience in clinical facilities under supervision by college instructor, staff technologists and clinical instructors. Increased development of skills in correlation with current radiologic practices. Rotation in various medical facilities.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into the Radiologic Technology Program

Content

Course Lab/Activity Content

- 1. Radiologic techniques
- 2. Radiation protection
- 3. Communication
- 4. Image Critique
- 5. Positioning of all exams
- 6. Professionalism
- 7. Advanced modality rotation

Objectives

- 1. Communicate with patients at a level appropriate for the patient's age, medical condition, and abilities.
- 2. Consistently demonstate radiation protection skills.
- 3. Demonstrate professionalism.
- 4. Demonstrate use of facility protocols, policies, and procedures.
- 5. Completion of all competencies required for program completion.

Student Learning Outcomes

- 1. Upon completion of the course, student will show effective communication skills.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Global Awareness** Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
- 2. Upon completion of the course, student will model professionalism.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 3. Upon completion of the course, student will demonstrate radiation protection.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - **Scientific Awareness** Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 4. Upon completion of the course, students will present a case study observed during an advanced modality rotation.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Methods of Instruction

• Other On the job training

Assignments

Writing Assignments

Students are required to complete a case study of an advanced modality clinical rotation. **Other Assignments**

Methods of Evaluation

- Laboratory Assignments
- ParticipationPortfolio

- Problem Solving Exercises Skills Demonstrations/Performance Exam

Course Materials

None

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Yuba College Course Outline

Course Information

Course Number: CHEM 2B Full Course Title: Introductory Chemistry II Short Title: Intro Chem II TOP Code: 1905.00 - Chemistry, General Effective Term: Fall 2013

Course Standards

Course Type: Credit - Degree Applicable Units: 4.0 Total class hours: 216.0 Total contact hours in class: 108.0 Lecture hours: 54.0 Lab hours: 54.0 Hours outside of class: 108.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Chemistry (Masters Required)

Course Description

Introduction to fundamental concepts of organic and biochemistry. Topics of instruction include (1) structure, nomenclature, and reactions of some organic compounds and drugs, (2) stereochemistry, (3) structure and metabolism of carbohydrates, lipids, proteins, enzyme activity and inhibition, nucleic acids and DNA, and (4) bioenergetics. Completion of this course along with CHEM 2A is designed to satisfy the requirements of those allied-health career programs which require two semesters of chemistry.

Conditions of Enrollment

Satisfactory completion of: CHEM 1A or CHEM 2A

Advisories

- Language recommended eligibility for English 1A
- Mathematics recommended eligibility for Math 52

Content

- 1. Hydrocarbons
- 2. Alcohols, phenols and ethers
- 3. Aldehydes and ketones

- 4. Carboxylic acid and amines
- 5. Stereochemistry
- 6. Carbohydrates, lipids, proteins, and nucleic acids
- 7. Enzymes, vitamins, and hormones
- 8. Metabolism

Course Lab/Activity Content

- 1. Properties and reactions of hydrocarbons
- 2. Properties and reactions of alcohols
- 3. Reactions of carbonyl compounds
- 4. Identification of an unknown
- 5. Esterification
- 6. Isolation of lecithin from egg yolks
- 7. Nitrogen containing compounds and polymers
- 8. Characteristics of proteins
- 9. The study of an enzyme system
- 10. Partial thermal degradation of mixed saccharides with protein inclusions

Objectives

- 1. Identify functional groups of organic molecules.
- 2. Identify organic compounds by name and structure.
- 3. Compare fundamental physical and chemical properties of organic compounds. **Requires Critical Thinking**
- 4. Recognize the biological and environmental function of many organic compounds.
- 5. Identify isomerism in organic molecules.
- 6. Determine the stereochemistry of selected organic compounds.
- 7. Synthesize selected organic compounds and investigate their properties.
- 8. Predict the outcome of reactions of organic compounds. **Requires Critical Thinking**
- 9. Explain the metabolism of carbohydrates, lipids and proteins.
- 10. Recognize the structure and significance of nucleic acids.
- 11. Participate in laboratory activities and write laboratory reports. **Requires Critical Thinking**

Student Learning Outcomes

- 1. CSLO1: Nomenclature: Upon completion of this course, students will demonstrate proficiency in correctly naming organic and biochemicals. Focus will be on alkanes, alkenes, alcohols, carbonyl compounds, amines, carbohydrates, lipids, proteins and nucleic acids and their polymers.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
- CSLO2: Reactions: Upon completion of this course, students will demonstrate proficiency in predicting the product(s) of a series of organic chemical reactions. Focus will be on reactions of alkanes, alkenes, alcohols, carbonyl compounds and aromatics.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
- 3. CSLO3: Physical Properties: Upon completion of this course, students will analyze the structure of organic

and biochemical molecules and describe their chemical and physical properties.

• Critical Thinking Students will analyze data/information in addressing and evaluating problems and issues in making decisions.

Methods of Instruction

• Laboratory

Students will perform laboratory experiments where they will analyze various classes of organic and biochemical molecules to determine their physical and chemical properties.

• Lecture/Discussion Standard lecture structure with materials provided via PowerPoint presentations along with instructor-led discussions related to the material being lectured on.

Assignments

Other Assignments

Carboxylic acids may be prepared by oxidation of either

- 1. aldehydes or ketones
- 2. primary or secondary alcohols
- 3. aldehydes or primary alcohols
- 4. aldehydes or secondary alcohols

(The above is a typical multiple choice question from an exam)

Draw the structure for the following compound:

• cis-3-ieopropylcyclopentanol

(The above is a typical nomenclature/structure problem)

A sample of ethyl alcohol is divided into two portions. Portion A is added to an aqueous solution of a strong oxidizing agent and allowed to react. The organic product of this reaction is then mixed with portion B of the ethyl alcohol. A trace of acid is added and the solution is heated. What is the structure of the final product of this reaction?

(The above is a typical essay/short answer/reaction problem)

Methods of Evaluation

- Exams
- Homework
- Laboratory Assignments
- Quizzes

Course Materials

Textbooks:

 Timberlake, Karen C.. General, Organic, and Biological Chemistry Structures of Life, 5th ed. Pearson, 2015, ISBN: 9780321967466
 Equivalent text is acceptable

Manuals:

 Orton, Kevin. Experiencing Chemistry A Personal Exploration for Chemistry 2B, -- ed. Yuba College, 2019, ISBN: - Equivalent text is acceptable

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AUTOMOTIVE SERVICE TECHNICIAN

CERT OF ACHIEVEMENT WITH 16-29.5 UNITS

Description

This certificate prepares the student for an entry-level position in the automotive industry. Emphasis will be placed on performing vehicle inspections, new car preparation, basic engine service, cooling system maintenance, battery testing, tire service including balancing, disc and drum brake service, basic front and rear suspension service and general automotive maintenance.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Students will be able to demonstrate basic technical skills used by all automotive service and repair technicians in the area of brake systems. To include tool selection, use and maintenance, practical measuring skills, nomenclature, system function, systems service, minor repair procedures, and major repair complexities.
- Students will be able to demonstrate basic technical skills used by all automotive service and repair technicians in the area of suspension and steering. To include tool selection, use and maintenance, practical measuring skills, nomenclature, systems function, systems service, minor repair procedures, and major repair complexities.
- Students will be able to demonstrate basic technical skills used by all automotive service and repair technicians in the area of heating, ventilation and air-conditioning. To include tool selection, use and maintenance, practical measuring skills, nomenclature, systems function, systems service, minor repair procedures, and major repair complexities.

Program Requirements:

Required Courses	6	Course Block Units: (19 Required)
AUTO51.20	Automotive Technical Skills	3
AUTO21	Introduction to Automobiles	3
AUTO52.36	Heating and Air Conditioning Systems	3
AUTO52.40	Brake Systems	4
AUTO52.41	Alignment and Suspension	4
AUTO52.81	Hybrid and Alternative Fuel Vehicles	2
Plus 1 additional u	unit selected from courses listed below:	Course Block Units: (1 Required)
AUTO52.61A	Engine Repair Experience	1
AUTO52.62C	Alignment and Suspension Experience	1
AUTO52.62D	Brakes Experience	1
AUTO52.62E	Heating and Air Conditioning Experience	1
		Total: 20

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DRIVETRAIN SERVICE TECHNICIAN

CERT OF ACHIEVEMENT WITH 16-29.5 UNITS

Description

The Drivetrain Service Technician certificate prepares students with job skills needed to enter the automotive field in the areas of Automatic Transmission/Transaxle and/or Manual Drivetrain and Axles. The certificate is designed to prepare an individual to take the automotive service excellence (ASE) A2 Automatic Transmission/Transaxle and A3 Manual Drivetrain and Axles certification for employment as an Automatic Transmission and/or Manual Transmission Service/Repair Technician.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- 1. Demonstrate the job ready skills needed to obtain entry level employment as Drivetrain Technicians.
- 2. Diagnose malfunctions and disassemble, inspect, clean and reassemble all components of manual and automatic drivetrains
- 3. Demonstrate skills to prepare for the ASE A2-A3 exam.

Program Requirements:

Required Courses		Course Block Units: (20 Required)
AUTO51.20	Automotive Technical Skills	3
AUTO21	Introduction to Automobiles	3
AUTO22	Hydraulics (Fluid Power)	3
AUTO52.30	Manual Drivetrains/Gas and Diesel Vehicles	3
AUTO53.31	Automatic Transmission/ Gas and Diesel Vehicles	4
AUTO52.81	Hybrid and Alternative Fuel Vehicles	2
Plus 1 additional un of Work Experience	nit selected from courses listed below and 1 unit e.	Course Block Units: (2 Required)
AUTO52.62A	Automatic Transmission and Transaxle Experience	1
AUTO52.62B	Manual Drivetrain and Axles Experience	1

Total: 22

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AUTOMOTIVE TECHNOLOGY

CERT OF ACHIEVEMENT WITH 30-59.5 UNITS

Description

The Automotive Technology Certificate prepares students with job skills needed to enter the automotive field. Emphasis is placed on brake systems, suspension and alignment, heating and air-conditioning, manual and automatic transmissions, electrical and engine management systems, and complete automotive systems diagnosis and repair. It prepares students for all nine Automotive Service Excellence (ASE) A1-A8 certifications including Advanced Engine Performance (L-1).

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Students will be able to demonstrate basic technical skills used by all automotive service and repair technicians, in the areas of brake systems, suspension and steering, and hvac. To include tool selection, use and maintenance, practical measuring skills, nomenclature, systems function, systems service, minor repair procedures, and major repair complexities.
- Students will be able to demonstrate a knowledge of principles of automotive drivetrains which consist of both standard and automatic transmissions/transaxles and engine theory of operation, pre-tear down diagnosis, disassembly techniques, cleaning methods, measurement tools, component identification, lubrication systems, and ability to apply diagnostic, service and repair procedures to industry standards and specifications.
- Students will be able to demonstrate knowledge of current automotive electrical systems, and advanced fuel systems with emphasis on diagnosis, service and repair, proper safety awareness in hybrid service, knowledge of hybrid electrical motors and generator controls, diagnosis of vehicle computer systems using a scan tool.

Required Courses		Course Block Units: (40 Required)
AUTO51.20	Automotive Technical Skills	3
AUTO21	Introduction to Automobiles	3
AUTO52.30	Manual Drivetrains/Gas and Diesel Vehicles	3
AUTO53.31	Automatic Transmission/ Gas and Diesel Vehicles	4
AUTO53.33	Fuel Systems	4
AUTO52.36	Heating and Air Conditioning Systems	3
AUTO52.40	Brake Systems	4
AUTO52.41	Alignment and Suspension	4
AUTO52.44	Electrical Systems	6
AUTO52.45	Engine Diagnosis and Rebuilding	4
AUTO52.81	Hybrid and Alternative Fuel Vehicles	2
Plus 1 additional u	nit selected from courses listed below:	Course Block Units: (1 Required)
AUTO52.61A	Engine Repair Experience	1
AUTO52.61B	Engine Machining and Reconditioning Experience	1

Program Requirements:

		Total: 41
AUTO52.61B	Engine Machining and Reconditioning Experience	1
AUTO52.62A	Automatic Transmission and Transaxle Experience	1

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AUTOMOTIVE TECHNOLOGY

ASSOCIATE IN SCIENCE

Description

The Automotive Technology Degree prepares students with job skills needed to enter the automotive field. Emphasis is placed on brake systems, suspension and alignment, heating and air-conditioning, manual and automatic transmissions, electrical and engine management systems, and complete automotive systems diagnosis and repair. It prepares students for all nine Automotive Service Excellence (ASE) A1-A8 certifications including Advanced Engine Performance (L-1).

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- 1. Students will be able to demonstrate basic technical skills used by all automotive service and repair technicians, in the areas of brake systems, suspension and steering, and hvac. To include tool selection, use and maintenance, practical measuring skills, nomenclature, systems function, systems service, minor repair procedures and major repair complexities.
- 2. Students will be able to demonstrate a knowledge of principles of automotive drivetrains which consist of both standard and automatic transmissions/transaxles and engine theory of operation, pre-tear down diagnosis, disassembly techniques, cleaning methods, measurement tools, component identification, lubrication systems, and ability to apply diagnostic, service and repair procedures to industry standards and specifications.
- 3. Students will be able to demonstrate knowledge of current automotive electrical systems, and advanced fuel systems with emphasis on diagnosis, service and repair, proper safety awareness in hybrid service, knowledge of hybrid electrical motors and generator controls, diagnosis of vehicle computer systems using a scan tool.

Program Requirements:

Required Courses		Course Block Units: (42 Required)
AUTO51.20	Automotive Technical Skills	3
AUTO21	Introduction to Automobiles	3
AUTO52.30	Manual Drivetrains/Gas and Diesel Vehicles	3
AUTO53.31	Automatic Transmission/ Gas and Diesel Vehicles	4
AUTO53.33	Fuel Systems	4
AUTO52.36	Heating and Air Conditioning Systems	3
AUTO52.40	Brake Systems	4
AUTO52.41	Alignment and Suspension	4
AUTO52.44	Electrical Systems	6
AUTO52.45	Engine Diagnosis and Rebuilding	4
AUTO52.81	Hybrid and Alternative Fuel Vehicles	2

Plus 1 additional unit selected from courses listed below:

Course Block Units: (1 Required)

AUTO52.61A	Engine Repair Experience	1
AUTO52.61B	Engine Machining and Reconditioning Experience	1
AUTO52.62A	Automatic Transmission and Transaxle Experience	1
AUTO52.62B	Manual Drivetrain and Axles Experience	1

Total: 43

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Yuba College Course Outline

Course Information

Course Number: RADT 3B Full Course Title: Radiographic Procedures 2 Short Title: Rad Procedures 2 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 3.0 Total class hours: 162.0 Total contact hours in class: 90.0 Lecture hours: 36.0 Lab hours: 54.0 Hours outside of class: 72.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Knowledge and skills necessary to perform standard radiographic procedures that are of optimal diagnostic quality. Skills necessary for image critique. Areas studied: spine, skull, facial bones. Trauma exams. Pediatric exams. Use of portable machine and radiography in the Operating room.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program

Content

- 1. Radiographic terminology
- 2. Radiographic anatomy, positioning, and pathology
 - a. Spine
 - b. Skull
 - c. Facial bones
 - d. Sinus
 - e. Trauma

- f. Pediatric exams
- g. Portable exams
- h. Operating room exams
- 3. Image critique

Course Lab/Activity Content

- 1. Radiographic positioning demonstrations
 - a. Spine
 - b. Skull
 - c. Facial bones
 - d. Sinus
 - e. Trauma
 - f. Portable exams
 - g. Operating Room Exam
 - 2. Image critique
 - 3. Lab Experiments

Objectives

- 1. Identify anatomy on radiographic images.
- 2. Explain the routine and special positions and projections for all radiographic procedures.
- 3. Describe general procedural considerations for radiographic examinations.
- 4. Simulate radiographic procedures on a person or phantom in a laboratory setting. ****Requires Critical Thinking****
- 5. Apply general radiation safety and protection practices associated with radiographic examinations.

Student Learning Outcomes

- 1. Upon completion of this course, the student should be able to label the anatomy of the human skull.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Global Awareness Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 2. Upon completion of this course, the student should be able to identify types of fractures seen in trauma.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Global Awareness Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 3. Upon completion of this course, the student should be able to identify modifications needed to obtain

spine images.

- **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
- Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
- **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Methods of Instruction

- Laboratory
 Scenarios Simulations Discussion Demonstration Experiments
- Lecture/Discussion
 Powerpoints Discussion Demonstrations Scenarios Simulations

Assignments

Reading Assignments

Reading Assigned chapters and other documentation Writing Assignments

Complete assignments in the workbook for submission

Journal article review

Description of anatomy and image review written exam

Other Assignments

Labeling anatomy on a radiographic image.

Labeling anatomy on a skeleton.

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Oral Tests/Class Performance
- Portfolio
- Problem Solving Exercises
- Quizzes
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. John Lampignano and Leslie Kendrick. *Bontrager's Textbook of Radiographic Positioning and Related Anatomy,* 9th ed. Elsevier, 2017, ISBN: 9780323399661

Manuals:

1. John Lampignano and Leslie Kendrick. *Workbook Bontrager's Textbook of Radiographic Positioning and Related Anatomy*, 9th ed. Elsevier, 2017, ISBN: 9780323481878

Yuba College Course Outline

Course Information

Course Number: RADT 3D Full Course Title: Radiographic Procedures 4 Short Title: Rad Procedures 4 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 2.0 Total class hours: 108.0 Total contact hours in class: 36.0 Lecture hours: 36.0 Hours outside of class: 72.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

Radiological Technology

Course Description

Critical thinking skills necessary to obtain the best radiographic image in various situations.

Conditions of Enrollment

Acceptance into Radiologic Technology Program

Content

Course Lecture Content

- 1. Modifications necessary to obtain diagnostic quality images for trauma patients.
- 2. Routine and special positions and projections for radiographic exams.
- 3. Advanced image analysis.
- 4. Professionalism.

Objectives

1. Evaluate radiographic images for quality in terms of positioning, anatomy, centering and technical factors.

Requires Critical Thinking

- 2. Evaluate patient positioning to determine alternative approaches to imaging. **Requires Critical Thinking**
- 3. Demonstrate proper sequencing of multiple radiographic studies on a single patient. ****Requires Critical Thinking****
- 4. Demonstrate professionalism.

Student Learning Outcomes

- 1. Upon completion of this course, the student should be able to list the order in which specific projections should be taken of a trauma patient for a given case study.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
- 2. Upon completion of this course, the student should be able to upon completion of the course, student will create a video on professionalism.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.

Methods of Instruction

Lecture/Discussion

Lecture Power Points Case Studies Scenarios Discussion Image Analysis

Assignments

Reading Assignments

Textbook reading

Other reading assignments

Writing Assignments

Describe (in writing) how you would address a multi-patient multi-trauma radiology examination.

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Oral Tests/Class Performance
- Portfolio
- Problem Solving Exercises
- Quizzes
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. Carroll, Quinn and Bowman, Dennis. Adaptive Radiography, 1st ed. Delmar, 2014, ISBN: 9781111541200

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Yuba College Course Outline

Course Information

Course Number: RADT 5 Full Course Title: Principles Radiation Exposure & Equipment Short Title: Rad Exp. & Equip. TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 4.0 Total class hours: 216.0 Total contact hours in class: 72.0 Lecture hours: 72.0 Hours outside of class: 144.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Knowledge of factors that govern and influence the production of the radiographic image; digital radiography image production and review, Picture archiving and communication systems, DICOM, HL7.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program.

Content

- 1. Image Factors
- 2. Scatter Radiation and Grids
- 3. Digital and Computed Radiography Systems
 - a. Artifacts
 - b. Quality assurance
 - c. Image quality
 - d. Image review
 - e. Image manipulation
- 4. Networking and Communication Basics
 - a. PACS

c. HL-7

5. Experiments as Related to Exposure Principles, CR Systems, Networking and Communication

Objectives

- 1. Identify beam limiting devices.
- 2. Define scattered radiation, its causes, and methods of reduction.
- 3. Identify the components of grids.
- 4. Describe appropriate manipulation of the digital image **Requires Critical Thinking**
- 5. Explain the differences between DR and CR imaging systems. **Requires Critical Thinking**
- 6. Describe the use of a PACS systems. **Requires Critical Thinking**

Student Learning Outcomes

- 1. Discuss the applications of PACS, DICOM, and HL7 in the digital imaging workplace.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 2. Identify digital radiography artifacts.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 3. Identify the characteristics of a digital image.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 4. Identify digital post-processing functions.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 5. Summarize the common functions found on a PACS workstation.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Assignments

Reading Assignments

Read the white paper presented by the ASRT Best practices in digital radiography.

Writing Assignments

Please summarize the best practices in digital radiography.

Which of these things were followed at your last clincial facility? Describe in detail.

Which of these things were not followed at your last clinical facility? Describe in detail.

How will this affect your future performance?

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Participation
- Portfolio
- Problem Solving Exercises
- Quizzes

Course Materials

None

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Yuba College Course Outline

Course Information

Course Number: RADT 6B Full Course Title: Radiologic Technology Internship 2 Short Title: Rad Tech Intern 2 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 4.5 Total class hours: 260.0 Total contact hours in class: 260.0 Lab hours: 260.0 Repeatable: No Grading Method: Letter Grade or Pass/No Pass

Minimum Qualifications for Instructors

Radiological Technology

Course Description

Beginning radiologic experience in clinical facilities under the supervision of the college instructor, staff technologists, and clinical instructors. Enhanced development of skills in correlation with current radiologic practices. Rotation in various facilities.

Conditions of Enrollment

Satisfactory completion of: RADT 6A Acceptance into Radiologic Technology Program.

Content

- 1. Daily Operations
 - a. Clinical facility policy and procedures
 - b. Department policy and procedures
- 2. Radiologic Techniques
 - a. Radiation protection
 - b. Infection control
 - c. Image critique
 - d. Quality control
 - e. Fluoroscopic control
- 3. Positioning Procedures
 - a. Continue with extremities, thorax, abdomen, pelvis procedures

- b. With supervision add spine, skull and urinary systems
- c. Portable procedures
- d. Fluoroscopic procedures including contrast studies
- 4. Laboratory experiments
- 5. Multicultural and disabled patient care

Course Lab/Activity Content

- 1. Utilize clinical facility
 - policy and procedures
 - protocols
 - Radiology Information System
 - Picture Archiving and Communication System
- 2. Radiologic Techniques at student beginning level of expertise
 - Radiation protection
 - Universal Precautions
 - Image critique
- 3. Positioning Procedures

skull, facial bone, sinus, cervical spine, thoracic spine, lumbar spine, sacrum, coccyx

- 4. Student entry level ability to work patients of varying cultures, abilities, ages, and mental alterations.
- 5. Positioning of all exams previously studied at a student beginning level of expertise.

Objectives

- 1. Communicate with patients at a level appropriate for the patients age, medical condition, and abilites.
- 2. Execute medical imaging procedures under the appropriate level of supervision.
- 3. Critique images for appropriate anatomy, image quality, and patient identification. ****Requires Critical Thinking****
- 4. Determine corrective measures to improve inadequate images. **Requires Critical Thinking**

Student Learning Outcomes

- 1. Upon completion of this course, the student should be able to demonstrate radiation protection.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
- 2. Upon completion of this course, the student should be able to model Professionalism
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.
- 3. Upon completion of this course, the student should be able to show effective communication.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.

Methods of Instruction

- Laboratory
 - Other On the job training

Assignments

Other Assignments

Students are required to do analysis of the work they have done and providewritten documentation of "repeat" images with a description of how the error occurred and methods to assure they will not repeat the error.

Students are required to complete paperwork and tracking documentation.

Methods of Evaluation

- Essay/Paper
- Homework
- Laboratory Assignments
- Oral Tests/Class Performance
- Participation
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. Bontrager, Kenneth L. and John Lampignano. *Bontragers Handbook of Radiographic Positioning and Techniques, 9th edition ISBN 9780323485258,* 9 ed. Elsevier, 2017, ISBN: 9780323485258

Other:

- 1. Student Handbook
- 2. Trajecsys Clinical Recordkeeping for Health Education

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Yuba College Course Outline

Course Information

Course Number: RADT 6C Full Course Title: Radiologic Technology Internship 3 Short Title: Rad Tech Intern 3 TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 7.0 Total class hours: 390.0 Total contact hours in class: 390.0 Lab hours: 390.0 Repeatable: No Grading Method: Pass/No Pass Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Intermediate radiologic experience in clinical facilities under the supervision of the college instructor, staff technologists, and clinical instructor. Increased development of skills in correlation with current radiologic practices. Rotation in various facilities.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program

Course has additional enrollment fees: Radiation Badge Fee is attached to this course. Students will have access to the reading each month and when they exit the program they will be able to download a permanent record to present to employers. Additionally, a record will be kept by the program in perpetuity.

Content

- 1. Daily Operations
- a. Increased understanding of hospital and department specific policies and procedures
- 2. Increased Understanding and Implementation of Radiologic Techniques
 - a. Radiation protection
 - b. Infection control
 - c. Image critique
 - d. Quality control
- 3. Positioning Procedures

- a. Increased ability to perform
 - i. Extremities
 - ii. Thorax
 - iii. Abdomen
 - iv. Pelvis
 - v. Spine
 - vi. Skull
 - vii. Urinary system
 - viii. Portables
 - ix. Fluoroscopy procedures
- b. Addition of required ARRT competencies
- 4. Increased Ability and Understanding of Working with Multicultural and Disabled Patient Care

Course Lab/Activity Content

- 1. Daily Operations of facility radiology department and teamwork.
- 2. Radiologic Techniques at the student advanced level of expertise
 - a. Radiation protection
 - b. Communication
 - c. Image critique
- 3. Positioning of all exams previously studied at a student intermediate level of expertise.
- 4. Intermediate ability to image patients of varying cultures, abilities, ages, and mental status.

Objectives

- 1. Execute medical imaging procedures under the appropriate level of supervision. ****Requires Critical Thinking****
- 2. Select technical factors to produce diagnostic images with the lowest radiation exposure possible. **Requires Critical Thinking**
- 3. Demonstrate radiation protections skills. **Requires Critical Thinking**
- 4. Communicate with patients at a level appropriate for the patient's age, medical condition, and abilities.
- 5. Adhere to team practice concepts.

Student Learning Outcomes

- 1. Upon completion of the course, student will show effective communication skills
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Global Awareness** Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
- 2. Upon completion of the course, student will model professionalism.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Global Awareness** Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - Technological Awareness Students will be able to select and use appropriate technological tools

for personal, academic, and career tasks.

- 3. Upon completion of the course, student will demonstrate radiation protection.
 - **Communication** Students will effectively use language and non-verbal communication consistent with and appropriate for the audience and purpose.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Global Awareness** Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Methods of Instruction

• Other On the job training

Assignments

Other Assignments

At the end of your clinical rotation, you will be required to turn in a technique notebook.

You are to record viable techniques for the following body parts for an average (medium) size person. If you choose, you may also add small and large

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Laboratory Assignments
- Participation
- Problem Solving Exercises
- Skills Demonstrations/Performance Exam

Course Materials

Textbooks:

1. Bontrager, Kenneth L. and John Lampignano. *Bontrager's Handbook of Radiographic Positioning and Techniques*, 9 ed. Elsevier, 2017, ISBN: 9780323485258

Other:

- 1. Trajecsys Clinical Recordkeeping for Health Education
- 2. Student Handbook

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Yuba College Course Outline

Course Information

Course Number: RADT 7 Full Course Title: Advanced Radiographic Studies Short Title: Adv. Rad Studies TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 1.0 Total class hours: 54.0 Total contact hours in class: 18.0 Lecture hours: 18.0 Hours outside of class: 36.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Ethics and law in the radiologic sciences; advanced understanding of professionalism as related to a radiologic technologist.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program

Content

Course Lecture Content

- 1. Ethics and law in the radiographic sciences
- 2. Consideration of the professional role of the radiologic technologist

Objectives

- 1. Define various legal terms as they relate to the medical environment.
- 2. Demonstrate the importance of professionalism of the radiologic technologist. **Requires Critical

Thinking**

3. Describe ethical considerations in the field of Radiologic Technology. **Requires Critical Thinking**

Student Learning Outcomes

- 1. Upon completion of this course, the student should be able to evaluate a case study on medical ethics.
 - Critical Thinking Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Global Awareness Students will articulate similarities and differences among cultures, times, and environments, demonstrating an understanding of cultural pluralism and knowledge of global issues.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.

Methods of Instruction

Lecture/Discussion
 Lecture Guest Speakers Case studies Discussion/Debate Power Points Scenarios

Assignments

Reading Assignments

Reading assigned text, journal articles, and case studies. Writing Assignments Prepare a rational for the case study.

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Portfolio
- Problem Solving Exercises
- Quizzes
- Research Project

Course Materials

Textbooks:

1. Jeanne McTeigue and Christopher Lee. *Legal and Ethical Issues for Health Professionals,* 4 ed. Elsevier, 2019, ISBN: 978032349641

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Yuba College Course Outline

Course Information

Course Number: RADT 8 Full Course Title: Radiographic Pathology Short Title: Rad. Pathology TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 2.0 Total class hours: 108.0 Total contact hours in class: 36.0 Lecture hours: 36.0 Hours outside of class: 72.0 Repeatable: No Grading Method: Letter Grade Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Injuries and abnormalities most frequently encountered in Radiologic Technology. Key anatomy and physiology principles, imaging considerations for each disease, and its radiographic appearance, signs and symptoms, and treatment.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program

Content

- 1. Introduction to Pathology
- 2. The Skeletal System
- **3**. The Respiratory System
- 4. The Cardiovascular System
- 5. The Abdomen and Gastrointestinal System
- 6. The Hepatobiliary System
- 7. The Urinary System
- 8. The Central Nervous System
- 9. The Hemopoietic System
- 10. The Reproductive System

11. The Endocrine System

12. Traumatic Disease

Objectives

- 1. Describe the radiographic appearance of diseases.
- 2. Identify pathology for each disease classification.
- 3. Define basic terms related to pathology.
- 4. Describe the imaging considerations for each body system.

Student Learning Outcomes

- 1. Upon completion of this course, student will identify radiography pathology of the abdomen/GI system.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
- 2. Upon completion of this course, student will compile a case study on chest pathology.
 - Information Competency Students will conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
 - Scientific Awareness Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.

Methods of Instruction

Lecture/Discussion
 Discussion Lecture Case Studies Scenarios Image Review/Discussion Presentations

Distance Education

Delivery Methods

Online

Assignments

Reading Assignments Textbook, journal articles, case studies on pathology Writing Assignments Write a case study in radiolographic pathology

Methods of Evaluation

- Essay/Paper
- Exams
- Homework
- Participation
- Portfolio
- Problem Solving Exercises

- Quizzes
- Research Project

Course Materials

Textbooks:

- 1. Mace Kowalczyk, Nina. *Radiographic Pathology for Technologists,* 7th ed. Elsevier, 2018, ISBN: 9780323544122
- Ronald L. Eisenberg, MD, JD, FACR and Nancy M. Johnson, MEd, RT(R)(CV)(CT)(QM), FASRT. *Mosby's Radiographic Online for Comprehensive Radiologic Pathology*, 6 ed. Elsevier, 2016, ISBN: 9780323353243

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Yuba College Course Outline

Course Information

Course Number: RADT 12 Full Course Title: Radiologic Technology Board Review Short Title: Rad Brd Review TOP Code: 1225.00 - Radiologic Technology/Science - Radiographer* Effective Term: Fall 2018

Course Standards

Course Type: Credit - Degree Applicable Units: 1.5 Total class hours: 81.0 Total contact hours in class: 27.0 Lecture hours: 27.0 Hours outside of class: 54.0 Repeatable: No Grading Method: Pass/No Pass Only

Minimum Qualifications for Instructors

• Radiological Technology

Course Description

Summary lectures for the testing of the four (4) content areas tested by State of California Radiation Health Branch and the American Registry of Radiologic Technology.

Conditions of Enrollment

Satisfactory completion of: RADT 55 Acceptance into Radiologic Technology Program

Content

Course Lecture Content

- 1. Patient Care
- 2. Safety
- 3. Image Production
- 4. Procedures
- 5. Comprehensive exam

Objectives

1. Demonstrate, with the knowledge of an entry-level Radiologic Technologist, an understanding of patient

care skills. **Requires Critical Thinking**

- 2. Demonstrate, with the knowledge of an entry-level Radiologic Technologist, an understanding of safety in Radiologic Technology. **Requires Critical Thinking**
- 3. Demonstrate, with the knowledge of an entry-level Radiologic Technologist, an understanding of image production in Radiologic Technology. **Requires Critical Thinking**
- Demonstrate, with the knowledge of an entry-level Radiologic Technologist, an understanding of radiographic procedures. **Requires Critical Thinking**

Student Learning Outcomes

- 1. Upon completion of this course, the student should be able to choose the correct position/projection for needed for a radiologic exam.
 - **Critical Thinking** Students will analyze data/information in addressing and evaluating problems and issues in making decisions.
 - **Personal and Social Responsibility** Students will interact with others by demonstrating respect for opinions, feelings, and values.
 - **Technological Awareness** Students will be able to select and use appropriate technological tools for personal, academic, and career tasks.

Methods of Instruction

Lecture/Discussion
 Review of ARRT board exam contents Power Points Lecture Discussion Quiz review

Assignments

Reading Assignments Review of information in textbooks Other Assignments

Module review exam on positioning.

Methods of Evaluation

- Exams
- Homework
- Portfolio
- Problem Solving Exercises
- Quizzes

Course Materials

Software:

- 1. *HESI Radiography Practice Test.* Elsevier, 2017 ed. ISBN 781455741762 Online practice tests for Radiologic Technology with instructor access for evaluation and assessment.
- 2. *Elsevier Adaptive Quizzing for Imaging Sciences.* Elsevier, 2nd ed. ISBN: 9780323511551 Online practice tests for Radiologic Technology with instructor access for evaluation and assessment.
- 3. *HESI Radiography Exit Exam.* HESI, Classic ed. Examination that mimics the national boards students will sit for upon graduation.