Welcome to Radiologic Technology
This course is a 3 hour, 10 min class. The lecture will introduce the basic principles of Radiologic Technology, ECC program requirements and principles of patient care. An introduction of lab equipment, demonstrations, image production and digital radiography will take place in the radiographic lab.

**Student Learning Outcomes:**

- **Students will analyze different methods to reduce radiation dose to the patient in the radiology department.**
- **Students will explain the concepts of contrast and density of a radiograph.**
- **Students will differentiate between the 5 photon interactions in matter by describing the origin of the interaction and its effect on the body.**

**Textbook:**

**TITLE:**
Patient Care in Radiography: With an Introduction to Medical Imaging, 8th Edition

**AUTHORS:**
R. Ehrlich, D.Coakes

**ISBN:** 978-0-323-08065-1
Available in Bookstore

**Colleen McFaul, Instructor**

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**Website:** [http://www.elcamino.edu/faculty/cmcfaul/index.html](http://www.elcamino.edu/faculty/cmcfaul/index.html)

**Office Hours:**

- **Monday:** 7:15-7:45AM 11:45-12:15PM
- **Tuesday:** 2:00-3:30pm
- **Wed:** (last 8 weeks only) 12-12:30pm & 5:30-6:00

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**Successful completion of this course does not guarantee placement in the next class of the Radiologic Technology Training Program at El Camino College. However, SUCCESSFUL COMPLETION IS REQUIRED for consideration as an applicant for this program.**
### REQUIRED MATERIALS:
- Calculator - you not be allowed to use your phone as a calculator
- An object to x-ray (week 10)
- Scantrons 882E
- Pen / Pencil / Highlighters / Erasers / Paper
- Required textbook
- Closed toe shoes (lab days)
- Access to your MyECC portal email address
- PowerPoint, Excel and Word access
- Internet Access
  - **Etudes Access**

### ASSESSMENT:

**Grade Scale:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>100% - 91%</td>
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<tr>
<td>B</td>
<td>90% - 82%</td>
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<tr>
<td>C</td>
<td>81% - 75%</td>
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<tr>
<td>D</td>
<td>74% - 64%</td>
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<tr>
<td>F</td>
<td>63% and below</td>
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</tbody>
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### Course Breakdown:

- **Tests and Quizzes** 80%  
- **Homework, and term paper** 20%  
- **Total** 100%

### Activity (approximates)

- Examinations are worth 100 points each (6 Exams) 600 points
- Quizzes (Approximately seven total) 150 points
- Final Exam (Cumulative Exam) 200 points
- Term Paper 100 points
- Homework 100 points

These are approximate totals and can vary per instructor discretion.

### STANDARDS OF CONDUCT:

Conduct at El Camino College must conform to the laws of the State of California, District policies, and campus rules and regulations. The El Camino College faculty, staff, and administration are dedicated to maintaining a positive learning environment. Optimal standards for behavior are essential to the maintenance of a quality college environment. These standards will apply to all students on campus, other college property or while attending any college-sponsored event. Violation of such laws, policies, rules, and regulations or behavior adversely affecting suitability as a student, will lead to disciplinary action. Disciplinary actions as noted in Administrative Procedure 5520 may be taken against any person who engages in behavior defined as misconduct. The following misconduct shall constitute good cause for discipline, including but not limited to the removal, suspension, or expulsion of a student (ECC catalog, 2015).

1) **Academic Honesty:**
   - PLAGIARISM, CHEATING, OR FURNISHING MATERIALS IN ORDER TO ENABLE OTHER STUDENTS TO DO SO WILL NOT BE TOLERATED.

2) **Disruptive Behavior, Inappropriate Conduct**

3) **Drugs, alcohol, and smoking**

4) **Theft, robbery or damage**

5) **Harassment or threatening and violent behavior**

6) **Weapons and misuse of facilities**

This course will require a total score of **75%** or better on exams, quizzes, group projects, labs and the **cumulative** final exam. You will not pass the class if you do not pass the tests. This class cannot be used as a prerequisite for our program at El Camino College if your cumulative grade on tests and quizzes is less than **75%**. **A cumulative score of 75% or higher must be earned on all tests and quizzes in order to pass this class.**
**PARTICIPATION:**

Participate regularly whether as a whole group, individually or in small groups. You are in control of your learning so get the most out of the course. This is an intense, accelerated course so interactive learning is vital to your success. Participation can be as simple as offering ideas and/or suggestions, asking questions of instructors, colleagues and listening carefully, sharing notes and resources and participating in online discussions via Etudes. In a diverse learning community, be sensitive to different ways of presenting information and opinions. Keep an open mind, make connections; these are essential components for social respect, comfort and deeper learning for all.

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**ATTENDANCE, MAKE-UP EXAMS, LATE WORK:**

**Attendance:** The following is directly from El Camino College Catalog: “Students are expected to attend their classes regularly. Students who miss the first day of class meeting or who are not in regular attendance during the add period may be dropped from the class by the instructor. Children are not permitted in classrooms while class is in session. Attendance in class is limited to officially enrolled students” (ECC catalog, 2015).

**Make-Up Exams:** Make up exams are allowed only if proper steps are followed. The instructor must receive a phone call or e-mail from you the day of the examination prior to exam and the exam must be made up prior to the next class session (UNLESS OTHER ARRANGEMENTS ARE MADE). Make up exams are subject to a 10% penalty at instructor discretion. **Laboratory experiments and quizzes cannot be made up, nor can they be done in advance.** Quizzes are given at the beginning of class. If you arrive late, your quiz will be collected at the same time as the rest of the class. Pop quizzes are unannounced and may be given at any time during the class. It is your responsibility to collect handouts and other pertinent class information. Handouts and homework from the previous week can be picked up during office hours before class.

**Late Work:** **Late work will not be accepted.** If you will not be in class, give it to a colleague to turn in or drop it off in my mailbox and ask them to date it. This is done to assure fairness to those students who complete their assignments on time.

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**SPECIAL RESOURCE CENTER:**

As your instructor, my primary goal is your success. The Special Resource goal is “to facilitate academic success for students with disabilities by providing equal access to educational opportunities in an integrated campus setting. In order to be eligible for support services or instruction, a student must have a verification of his/her disability. Support services are provided on an individual basis as agreed upon during consultation with an SRC counselor or specialist.” (ECC catalog, 2015).

If you feel you may require special accommodations, please meet with me **by week two** of the semester and provide appropriate documentation of your special needs.

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**COURSE OBJECTIVES**

1. Describe the basic differences between diagnostic imaging educational programs and career pathways for Radiologic Technologists and describe the types of imaging modalities used in radiology.
2. Identify and label the types of equipment used in radiography such as the x-ray tube components, circuitry, image receptors, digital imaging components, film processors and darkroom equipment.
3. Explain the discovery of x-rays, fundamental properties, and the relationship between x-ray production and photon interaction with matter.
4. Classify the units of radiation and measurement, and discuss the safety precautions used for technologists and patients.
5. Analyze the relationship of radiographic exposure and as low as reasonably achievable (ALARA) to the direct and indirect biologic effects on humans.
6. List the exposure factors that are controlled by a technologist and evaluate how these factors can affect radiographic quality, density and contrast on a radiographic image.

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COURSE OBJECTIVES (cont.)

7. Define image detail and distortion, contrast and density, kVp and mAs, and explain their effects on image quality.
8. Calculate the difference in radiation dose rate using the inverse square law, kilovoltage 15% rule change and the milliamperes-seconds doubling rule changes.
9. Compare and contrast how radiographic images are acquired, processed and viewed with film/screen and digital radiography systems.
10. Describe picture archiving and communication systems (PACS), digital imaging and communication in medicine (DICOM) and teleradiography and their function in digital imaging and distinguish between the fundamentals of direct and indirect capture.
11. Discuss the proper locations and methods of obtaining vital signs, medication administration, applying universal precautions for infection control and using effective communication techniques with various types of patients.
12. Evaluate legal and ethical dilemmas related to the Radiologic Technology profession.

STUDENTS WITH DISABILITIES – El Camino College has a tradition of providing access to education for students with disabilities. For further information, see the El Camino College Catalog or Special Resource Center. Students with disabilities should inform the instructor especially if there are medical problems or learning disabilities. Accommodations may be provided as recommended by the Special Resource Center.

Student Resources: Your success is the number one priority at El Camino College. College resources to help you succeed include computer labs, tutoring centers, health services, and services for designated groups, such as veterans and students with disabilities. For a comprehensive list of Academic Resources and Support Programs, visit: http://www.elcamino.edu/administration/vpas/aims/aims_docs/ARSP.pdf
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El Camino College is committed to protecting the safety of our students. If you have been a victim of misconduct/assault (including experiences of sexual harassment, sexual assault, stalking and intimate partner violence), help is available.

You can:
1) Speak with an instructor. By law, faculty must report to the Office of Staff and Student Diversity any information about sexual or gender-based misconduct shared by students in person, via electronic communication and/or in classroom papers or homework exercises. Once an incident has been reported, you can decide whether to cooperate with the investigation.

2) Speak with a psychologist at Student Health. This assistance is free and confidential – psychologists are not required to report to the Office of Staff and Student Diversity. To schedule an appointment, call the Student Health Center at 310.660.3643 or visit their website: http://www.elcamino.edu/studentservices/health/

3) Contact the Office of Staff and Student Diversity at 310.660.3813 or visit their website for more information about resources on and off campus: http://www.elcamino.edu/administration/hr/diversity/

Take Note:

Please remember that the student is responsible for enrolling, adding, and DROPPING from the class.