COURSE DESCRIPTION: This course is designed to familiarize students with the basic concepts of quality assurance as applied to diagnostic imaging equipment and workflow. As the field of radiography evolves in the digital age, it is essential for radiographers to understand the functioning and limitations of their equipment. Additionally, radiographers can play a vital role in improving the overall throughput and patient experience at an imaging facility. We will explore the concepts and methods used to insure the proper functioning of an x-ray unit, and perform the tests to prove compliance with established parameters. We will also become familiar with the process by which institutions improve their performance, and apply these principles on our own.

Prerequisite(s): RADG-235
Co-requisite(s): Health Science Students

COURSE OBJECTIVES: At the completion of this course, the student will be able to:

1. Understand and articulate the importance of a quality assurance program
2. Understand and articulate the routine procedures used to evaluate the performance of an individual x-ray unit
3. Inspect the external aspects of a unit, and identify potential hazards or malfunctions
4. Write lab reports that present the methods used to gather data, process the data, and compare the results to established regulations
5. Understand and articulate the parameters of compliance for various aspects of the x-ray unit
6. Actively participate in the day to day maintenance of a radiology department, with an awareness of hazards or malfunctions with a unit, and the ability to identify the causes of the malfunction
7. Understand the quality improvement process of an imaging facility, and how to be an effective participant.

TOPICAL OUTLINE OF INSTRUCTION:

1. Introduction to Quality Assurance
2. Equipment Inspection/Writing lab reports
3. Linearity, reproducibility, half-value layer
4. AEC, light field-radiation field alignment, resolution
5. Quality Control for digital detectors and storage on PACS
6. Departmental Quality Assurance process

ATTENDANCE POLICY:

1. The student is expected to attend all class sessions.
2. Attendance is expected as follows: Three absences are allowed during the semester. The final grade will drop 5 points for each absence over three.
3. Please keep cell phones on vibrate during class.
COURSE REQUIREMENTS:

CLASS PARTICIPATION: This is a dynamic, participatory class and students are encouraged to contribute to discussions by sharing clinical/personal experiences relevant to the topic at hand.

EXAMS: This course will have two exams.

WRITTEN REPORTS: The student will produce two lab reports on Quality Control equipment testing. Students will work in teams of three, and be evaluated on both their individual performance and their effort as a group.

ASSIGNMENTS: Two short written responses to Quality Assurance related journal articles will also be assigned.

EXAMS:
- Students will not be allowed into the classroom once an exam has begun. Students who miss an exam due to late arrival will be required to take it later that same day.
- Students who are absent for an exam must contact the instructor to make up the exam the next class day.
- Make-up exams will be graded based upon 95%.
- Students may leave the classroom after their completed exam is turned into the instructor. Entry back into class is not allowed until the end of class.

STUDENT EVALUATION AND GRADING POLICY: Exam: 40%, Written Reports/Assignments: 40%, + Class Participation: 20% =Final Grade.

The course must be successfully completed with a grade of 75 or better. GRADING SCALE: The following is the grading scale utilized in this course.

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>95-100</td>
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<td>A-</td>
<td>92-94</td>
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<tr>
<td>B+</td>
<td>89-91</td>
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<td>B</td>
<td>85-88</td>
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<td>B-</td>
<td>82-84</td>
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<tr>
<td>C+</td>
<td>79-81</td>
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<tr>
<td>C</td>
<td>75-78</td>
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<tr>
<td>F</td>
<td>Below 75</td>
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TEXTBOOK, TOOLS AND SUPPLIES:

Textbooks: Radiography In The Digital Age, Carroll, 2nd Edition

References: Class handouts

INSTRUCTIONAL MATERIALS UTILIZED:
- Power Point
- Lab demonstrations
- Web Enhancement: Course syllabus, class schedule, handouts, power point lectures, and study guides will be posted on the Learning Manage System (LMS).
ADA Syllabus Statement:

Southern Maine Community College is an equal opportunity/affirmative action institution and employer. For more information, please call 207-741-5798. If you have a disabling condition and wish to request accommodations in order to have reasonable access to the programs and services offered by SMCC, you must register with the Disability Services Coordinator, Sandra Lynham, who can be reached at 741-5923. Further information about services for students with disabilities and the accommodation process is available upon request at this number. Course policies about online testing are modified to suit each individual’s accommodations.

SMCC Pay-for-Print Policy

Per Page Costs

Each semester students receive a $20 printing credit. The balance resets at the end of the semester and any remaining credits are removed. The cost varies depending upon page size and whether printing is done in black and white or color.

a. There is a $0.10 per page fee for standard 8.5" by 11" black and white documents.

b. The reverse sides of duplex (double-sided) documents are free.

c. There is a $.50 per page fee for standard 8.5" by 11" color documents.

d. There is a $.20 per page fee for 8.5" by 14" (legal) or 11" by 17" (tabloid) black and white documents.

e. There is a $1.00 per page fee for 8.5" by 14" (legal) or 11" by 17" (tabloid) color documents.

Duplex charges (printing on both sides of a page) work in the following fashion: One page is $0.10, two pages are $0.10, three pages are $0.20, and four pages are $0.20, etc. The flipsides are free, but another sheet of paper is $0.10. Please be aware that a document with any color at all (when printed to a color printer) will by default be printed in color. You are responsible for setting the print job to print black and white if you do not need color. For directions, please go to the IT Help tab in My SMCC.

How does it work?
The College’s pay-for-print system monitors printing on all printers (including those in general access labs, library printers, the Academic Achievement Center, Noisy Lounge and technology labs). Students can check the number of pages they have printed by using the Printing Balance tool available on SMCC computers (located in the lower right corner of the screen, near the clock). Departments with work study students who need to print documents for the department should contact the Help Desk at 741-5696 to have a special account set up.
Refunds

Print jobs are eligible for a refund in the event of mechanical or electronic error on the part of the printer, print server, or software used to submit the job. Jobs are not eligible for a refund in cases where the job was not set up correctly, was submitted multiple times, or the student is not satisfied with the result. To request a refund, please bring the offending print to the IT Department in the basement of the Ross Technology Center. Refunds will be granted in the form of a credit to the student’s account.

Why is SMCC charging for printing?

The pay-for-print system is an effort to control escalating printing costs. Charging for printing helps offset the increasing cost of supplies and encourages students to conserve resources. To find ways to reduce your printing charges, please go to the IT Help tab on My SMCC. If you have questions about the pay-for-printing policy or your printing charges, please contact the Help Desk at 741-5696 or send an email to helpdesk@smccme.edu.

Be sure to log OUT of the system when you’ve finished your printing, to prevent unauthorized access to your account.

Add-Drop Policy

Students who drop a course during the one-week “add/drop” period in the fall and spring semesters and the first three days of summer sessions receive a 100% refund of the tuition and associated fees for that course. Please note any course that meets for less than the traditional semester length, i.e., 15 weeks, has a pro-rated add/drop period. There is no refund for non-attendance.

Withdrawal Policy

A student may withdraw from a course only during the semester in which s/he is registered for that course. The withdrawal period is the second through twelfth week of the fall and spring semesters and the second through ninth week of twelve-week summer courses. This period is pro-rated for shorter-length courses. To withdraw from a course, a student must complete and submit the appropriate course withdrawal form, available at the Enrollment Service Center (no phone calls, please). The designation “W” will appear on the transcript after a student has officially withdrawn. A course withdrawal is an uncompleted course and may adversely affect financial aid eligibility. Failure to attend or ceasing to attend class does not constitute withdrawal from the course. There is no refund associated with a withdrawal.

Plagiarism Statement

Adherence to ethical academic standards is obligatory. Cheating is a serious offense, whether it consists of taking credit for work done by another person or doing work for which another person will receive credit. Taking and using the ideas or writings of another person without clearly and fully crediting the source is plagiarism and violates the academic code as well as the Student Code of
Conduct. If it is suspected that a student in any course in which s/he is enrolled has knowingly committed such a violation, the faculty member should refer the matter to the College’s Disciplinary Officer and appropriate action will be taken under the Student Code of Conduct. Sanctions may include suspension from the course and a failing grade in the course. Students have the right to appeal these actions to the Disciplinary Committee under the terms outlined in the Student Code of Conduct.