



Limited Radiography Course

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Co-directors and Instructors of the Control the Dose Limited Radiography Course



Senior Instructor

Connie Lyon

After 40 years working with fully accredited radiography programs, I created this course for students wanting to become certified to operate x-ray equipment. My experience ranges from consulting for radiation safety and quality management services, creating approved continuing education courses, and training resources for those operating x-ray equipment in a limited capacity.

[✉ Email](#)



Senior Instructor

Tracy Thelen

Tracy began as a Dental Assistant and then obtained an Applied Science degree in Radiography from Washburn University, Topeka, Kansas. She worked in diagnostic radiography and mammography in rural and metropolitan hospitals. She was part of the faculty in the Southeast Community College Radiography Program in Lincoln, NE, and then became Co-Chair and Program Director. She obtained her bachelor's degree in Instructional Technology and then a master's degree in Leadership. She then transferred to the Medical Assisting Program at SCC to teach core content and Limited Radiography. She has been teaching for more than 20 years.

[✉ Email](#)

Control the Dose Limited Radiography Course.

After developing two Radiologic Technology programs and teaching for more than 30 years in those programs the author of this course, Connie Lyon, began privately providing radiation safety consultation and testing x-ray equipment for compliance with state standards. As a result of being on-site in a variety of facilities, She became convinced of the need to provide educational options for those operating x-ray equipment in a limited capacity. These individuals are frequently employed in offices or clinics to do a small variety of radiographic procedures such as chest and extremity images. They are often already licensed or certified in another allied health area and are seeking to acquire limited radiographic skills in a secondary capacity. Although a fully certified RT would be a definite asset whenever such diagnostic images are required, they may be unavailable for employment in situations requiring so little of their full capabilities. The field of Medical Imaging continues to expand dramatically in proportion to technological advancements. Subsequently, there is a legitimate place for those who would utilize basic x-ray equipment to do selected radiographic procedures in a limited capacity.

This course was developed in 1998 as Nebraska was establishing minimum standards to assure safety for citizens for *any* medical radiographic procedure. It has been used successfully by hundreds of students. At the core is the belief that *anyone* operating x-ray equipment should do so with attention to protecting themselves and others from the risks of ionizing radiation. *In addition*, they must have knowledge and skills that enable them to maximize the benefits of this indispensable imaging tool while minimizing its risks. Nearly all states providing licenses for Limited Radiographers require passing the ARRT exam for Limited Scope of Practice in Radiography. This course was designed with those test specifications in mind. We customize our course to reflect the specific requirements of individual states wherever possible. This is most likely represented in the clinical hours and number of clinical procedures required by the state.

In the current version of the course, the delivery of content is entirely digital and self-paced. It includes videos, downloadable content, textbook resources, quizzes and tests which must be passed with a minimum score before the student can proceed to the next lesson. Thus the student must analyze why they missed certain items and retake the quiz or test before learning new content.

Then the Test Prep System prepares them for the Mock Exam and assures they are prepared to do as well as they can on the ARRT Limited Scope Exam. We calculate that the student will spend about 115 hours completing the academic portion of the course.

Although the course includes videos of positioning the patient for routine procedures, nothing substitutes for hands on practice while learning this content. Our typical student is already employed within a facility in which x-ray procedures are being done. They have to meet the clinical and supervision requirements required by each state. Typically this includes direct supervision by an R.T, a practitioner or another Limited Radiographer while the student is doing procedures on patients. Often there are either clinical hours required by the state and/or a specified number of selected procedures. Some of these requirements can be met by doing simulated procedures and/or by using phantoms. We grant a student a Certificate of Completion after they complete our course as customized according to the specific requirements of the state especially regarding clinical hours and/or procedures.

With the advent of digital imaging, telehealth, the explosion of mini-clinics and urgent cares and many more changes, the medical imaging field looks much different than it did 50 years ago. But some things never change. The patient needs access to care and competent caregivers. And if the answers to their questions include medical radiography, they need to be assured that those delivering the radiation are skillful and able to *control the dose*.

Included with this course description are the biographical summaries for Connie Lyon and Tracy Thelen who is co-director and senior instructor. Our CTD team also includes Josh Lyon who manages the learning and student interface platforms which allow us to monitor student progress and communicate regularly with the students.

There is also a summary view of the entire curriculum. An expanded version is available upon request. We invite you to take a look at the website at www.controlthedose.com.

Control the Dose Limited Radiography Course.

Course Curriculum

Estimated minimal clock hours to complete the requirements of this course is 113 hours. This does NOT include the time to complete the clinical hours, required number of procedures and/or supervisor evaluations.

Recommended textbook—Radiography Essentials for Limited Practice by Long, Frank, & Ehrlich

- Section 1 Course Introduction
- Section 2 The Image
- Section 3 Procedures—Chest and Distal Extremities
- Section 4 A Procedures Lab—Chest and Abdomen
- Section 4 B Procedures Lab—Distal Extremities
- Section 5 Technique Management
- Section 6 Digital Imaging
- Section 7 Technique Management Lab
- Section 8 Procedures—Proximal Extremities and Ribs
- Section 9 Procedures Lab—Proximal Extremities and Ribs
- Section 10 Procedures—Spine
- Section 11 Procedures Lab—Spine
- Section 12 X-ray Production and the Beam
- Section 13 Interactions and Radiation Biology
- Section 14 Risks and Regulations
- Section 15 Final Exams—Core 1, Chest, Extremities
- Section 16 Final Exams—Core 2, Spine
- Section 17 Skull (optional)

Finishing the Course

Test Prep System

Mock Exam

Control the Dose Limited Radiography Course—Clock Hours per Content Area

Content Area & ARRT # of Questions	Section # - Video Instruction; Downloadable content; Textbook content; Review quizzes; Section tests; Video Labs; Final Exams: Test-Prep (TP); Mock Exam (ME);	Didactic hours available	Patient Procedures & Evaluations
A-Patient Care 18 (Patient Interactions & Mgmt –18))	Section 1, Exams, TP & ME	10	
B-Safety 40 (Radiation Physics & Radiobiology -12) (Radiation Protection - 28)	Sections 1, 2, 12, 13 & 14 Exams, TP & ME	24	
C-Image Production 42 (Image Acquisition & Technical Evaluation—20) (Equipment Operation & Quality Assurance—22)	Section 1,2,5, 6, 7 Exams, TP & ME	38	
Procedure Module Chest/Thorax (20) *time spent on general intro to procedures	Sections 1, 3, 4A Exams, TP & ME	10	4 lab or clinical procedure X 20 min + evals = 2 hrs.
Procedure Module Extremities (25)	Sections 3, 4B, 8 & 9 Exams, TP & ME	23	40 lab or clinical procedures X 20 min + evals = 15 hrs.
Procedure Module Spine (25)	Section 3, 10 & 11 Exams, TP & ME	10	12 lab or clinical procedures X 25 min + evals = 6 hrs.
Procedure Module Skull/Sinuses (20)	Section 17 (Chapter 17 in text)	3	12 lab or clinical procedures X 25 min + evals = 6 hrs.
Totals <i>without skull</i>		115 hrs.	23 hrs.

Time Calculations:

Videos = actual length X 1.5 to include downloadable material

Review quizzes = 1 minute/question

Resource content = about 60 minutes/chapter

Downloadable content & clinical assignments = varies with length and difficulty

Section self-tests = 1.5 minute/question (could be more since @ quiz requires 100% with unlimited attempts)

Finals = 2 minutes/question

Test Prep = 2 minutes/question

Mock Exam = 1 minute/questions

Procedures = 4 X each X 20 minutes

for Chests & Ext; X 25 min for Spines

and Skull; 4 evaluations X 30 min @