Oregon Board of Medical Imaging
800 NE Oregon Street – Suite 1160A
Portland, OR 97232-2162
Phone: (971) 673-0215 / Fax: (971) 673-0218
Website: http://www.oregon.gov/OBMI
Email Completed Form To: Obmi.Info@OBMI.oregon.gov

Name: _____
First Middle Last

Oregon APRN License No. _____

Date: _____

Waiver Application For Didactic Requirements APRN Limited Permit - Supervision In Fluoroscopy

Note: Didactic Experience MUST BE Documented For Each Item Or Your Application Will Be Incomplete.
All applicants must pass the state-sponsored ARRT Fluoroscopy Examination.

Item No.	Didactic Requirements	Alternate Education To Qualify For OBMI Waiver*
1.	Define terminology associated with digital imaging systems.	
2.	Describe the evaluative criteria for digital radiography detectors.	
3.	Use appropriate means of scatter control.	
4.	Associate the impact of image processing parameters on image appearance.	
5.	Describe the fundamental physical principles of exposure for digital detectors.	
6.	Examine the potential impact of digital radiographic systems on patient exposure.	
7.	Discuss the concept of as low as reasonably achievable (ALARA) as it applies to digital systems.	
8.	Describe the function of a picture archival and communication system (PACS).	

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9.	Define digital imaging and communications in medicine (DICOM).	
10.	Discuss the rationale for contrast media use.	
11.	Differentiate between negative and positive contrast agents.	
12.	Identify the physical properties of select contrast agents.	
13.	Describe the structural differences and characteristics of low and high osmolar injectable contrast media.	
14.	Identify the desired contrast agent employed for select exams.	
15.	Discuss the resources used to identify patients at risk of an adverse reaction to contrast media used during a given diagnostic procedure.	
16.	Identify patient indicators for altering the selection of contrast media used to perform a given procedure.	

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17.	Recite the patient preparation necessary for various contrast and special studies.	
18.	Identify the strategies used for patients with a known history of allergic reaction.	
19.	Recognize the indicators and symptoms associated with a patient experiencing a mild, moderate or severe reaction to contrast media.	
20.	Implement strategies for treating a patient experiencing an adverse reaction to contrast media.	
21.	Discuss patient counseling and recommended follow-up care for patients undergoing a procedure requiring the use of contrast media.	
22.	Identify the components of diagnostic x-ray tubes.	
23.	Explain protocols used to extend x-ray tube life.	
24.	Make prudent judgment for the use of the fluoroscopic unit as a diagnostic tool.	

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25.	Identify the advantages and limitations of the fluoroscopic unit and various exposure settings (i.e., high-level control, or HLC) as a diagnostic tool.	
26.	Identify the functional components involved in the operation of both fixed and mobile fluoroscopic devices.	
27.	Identify features of the fluoroscopic unit designed to minimize radiation exposure to patients and operators.	
28.	Employ methods and techniques in the operation of the fluoroscopic device to maximize the diagnostic value of a given exam while minimizing patient radiation exposure.	
29.	Provide direction regarding radiation protection practices to others present during a fluoroscopic exam.	
30.	Provide patient education regarding the operation and benefits of the fluoroscopic device.	
31.	Verify QA/quality control (QC) procedures to ensure that equipment is operating safely and in a standardized manner prior to patient exposure and on a daily basis.	
32.	List elements of a quality management (QM) program and discuss how each is related to the QM program.	

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33.	Discuss the elements of a radiographic image.	
34.	Apply the problem-solving process used for image analysis.	
35.	Describe an effective image analysis method.	
36.	Describe the role of the physician assistant in image analysis.	
37.	Apply the process for evaluating images for adequate density/brightness, contrast, recorded detail/spatial resolution and acceptable limits of distortion.	
38.	Summarize the importance of proper positioning.	
39.	Discuss the impact of patient preparation on the resulting radiographic image.	
40.	Differentiate between technical factor problems, procedural factor problems and equipment malfunctions.	

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41.	Critique images for appropriate technical, procedural and pathologic factors.	
42.	Describe principles of cellular biology.	
43.	Identify sources of electromagnetic and particulate ionizing radiations.	
44.	Discriminate between the direct and indirect mechanisms of radiobiological effects.	
45.	Identify sources of radiation exposure.	
46.	Evaluate factors influencing radiobiologic and biophysical events at the cellular and subcellular level.	
47.	Describe physical, chemical and biologic factors influencing radiation response of cells and tissues.	
48.	Explain factors influencing radiosensitivity.	

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49.	Recognize the clinical significance of lethal dose (LD50/60).	
50.	Identify specific cells from most radiosensitive to least radiosensitive.	
51.	Employ dose response curves to study the relationship between radiation dose levels and the degree of biologic response.	
52.	Examine effects of limited vs. total body exposure.	
53.	Relate short-term and long-term effects as a consequence of high and low radiation doses.	
54.	Differentiate between somatic and genetic radiation effects.	
55.	Discuss stochastic (probabilistic) and nonstochastic (deterministic) effects.	
56.	Discuss embryonic and fetal effects of radiation exposure.	

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57.	Discuss acute radiation syndromes.	
58.	Describe fundamental atomic structure.	
59.	Explain the processes of ionization and excitation.	
60.	Describe wavelength and frequency and how they are related to velocity.	
61.	Explain the relationships between energy, wavelength and frequency.	
62.	Explain the wave-particle duality phenomena.	
63.	Identify the properties of x-rays.	
64.	Describe the processes of ionization and excitation.	

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65.	Differentiate between ionizing and nonionizing radiation.	
66.	Compare the production of bremsstrahlung and characteristic radiations.	
67.	Describe the conditions necessary to produce x-radiation.	
68.	Describe the x-ray emission spectra.	
69.	Identify the factors that affect the x-ray emission spectra.	
70.	Discuss various photon interactions with matter by describing the interaction, relation to atomic number, photon energy and part density, and their applications in diagnostic radiology.	
71.	Discuss the clinical significance of the photoelectric and modified scattering interactions in diagnostic imaging.	
72.	Identify and justify the need to minimize unnecessary radiation exposure of humans.	

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73.	Distinguish between somatic and genetic radiation effects.	
74.	Differentiate between the stochastic (probabilistic) and nonstochastic (deterministic) effects of radiation exposure.	
75.	Explain the objectives of a radiation protection program.	
76.	Define radiation and radioactivity units of measurement.	
77.	Describe the ALARA concept.	
78.	Identify the basis for occupational exposure limits.	
79.	Distinguish between perceived risk and comparable risk.	
80.	Describe the concept of the negligible individual dose (NID).	

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81.	Comply with legal and ethical radiation protection responsibilities of radiation workers.	
82.	Describe the relationship between irradiated area and effective dose.	
83.	Describe the theory and operation of radiation detection devices.	
84.	Discuss how iso-exposure curves are used for radiation protection.	
85.	Describe “Radiation Area” signs and identify appropriate placement sites.	
86.	Describe the function of federal, state and local regulations governing radiation protection practices.	
87.	Discuss personnel monitoring devices, including applications, advantages and limitations for each device.	
88.	Interpret personnel monitoring reports.	

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89.	Identify dose equivalent limits for the embryo and fetus in occupationally exposed women.	
90.	Distinguish between primary and secondary radiation barriers.	
91.	Discuss the relationship between workload, energy, HVL, tenth-value layer (TVL), use factor and shielding design.	
92.	Demonstrate how time, distance and shielding can be manipulated to minimize radiation exposures.	
93.	Explain the relationship of beam-limiting devices to patient radiation protection.	
94.	Discuss added and inherent filtration in terms of the effect on patient dosage.	
95.	Explain the purpose and importance of patient shielding.	
96.	Use the appropriate method of shielding for a given fluoroscopic procedure.	

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97.	Explain the relationship of exposure factors to patient dosage.	
98.	Explain how patient position affects dose to radiosensitive organs.	
99.	Describe the minimum source-to-tabletop distances for fixed and mobile fluoroscopic devices.	
100.	Apply safety factors for the patient and others in the room during mobile fluoroscopic procedures.	

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