Assessment: Course Four Column



Courses (HHS) - CMI

1)Sound production and propagation2) Interaction of sound and matter3)Instrument options and transducer

CMI 350:Ultrasound Physics and Instrumentation

Course Outcomes	Assessment Measures	Results	Actions
Demonstrate knowledge and understanding of acoustic physics, Doppler ultrasound principles, and ultrasound instrumentation - Demonstrate knowledge and understanding of acoustic physics, Doppler ultrasound principles, and ultrasound instrumentation. Including: a. Select the appropriate technique(s) for examination(s) being performed; b. Adjust instrument controls to optimize image quality; a. Perform linear, area, circumference, and other related measurements from sonographic images or data; b. Recognize and compensate for acoustical artifacts c. Utilize appropriate devices to obtain pertinent documentation d. Minimize patient exposure to acoustic energy e. Apply basic concepts of acoustic	Assessment - 1. Lab Assessment 2. Lab Exercises 3. Biologic Effects Presentation 4. Quizzes 5. Final Written Assessment Criterion: 1. 75% of students must obtain a 76% or higher 90% of lab assessments 2. 100% of students must attend and complete 100% of lab exercises. 3. 75% of students must obtain a 76% or higher on Biologic Effects Presentation. 4. 80% of students must complete 80% of quizzes with a 76% or higher. 5. 75% of students must complete the Final Written Assessment with a 76% or higher	Reporting Period: 2018-2019 Criterion Met: Yes 1. 2/2 (100%) of students completed 100% of lab Assessments with a 76% or higher. 2. 2/2 (100%) of students completed 100% of lab exercises. 3. 2/2 (100%) of students completed the Biologic Effects Presentation with a 76% or higher. 4. 2/2 (100%) of students completed the 93% of quizzes at a 76% or higher. 5. 2/2 (100%) of students completed the Final Written Assessment with a 76% or higher (09/16/2019)	Action: 1. Lab assessments may be scheduled outside of regularly scheduled lab scanning time to minimize studen wait time and improve lab efficiency. 2. Lab Exercises will continue as scheduled. 3. The Biologic Effects Presentation will continue to be required as written. 4. Students will be required to complete weekly quizzes. 5. The Final Written Assessment will be required with minor question modifications. (09/16/2019)

Outline

selection

4)Principles of ultrasound instruments and modes of operation

5)Operator control options

6) Physics of Doppler

7)Principles of Doppler techniques

8) Methods of Doppler flow analysis

9)Recording techniques

10)Acoustic artifacts

f. Emerging Technologies

Course Outcome Status: Active Next Assessment: 2023-2024

Demonstrate knowledge and understanding of the interaction between ultrasound - Demonstrate knowledge and understanding of the interaction between ultrasound and tissue and the probability of biological effects in clinical examinations,

including the following:

a. biologic effects, pertinent in vitro and in vivo studies,

b. exposure display indices,

c. generally accepted maximum safe exposure levels

d. ALARA principle

Course Outcome Status: Active Next Assessment: 2023-2024

Assignment - Written - 1. Project

2. Biologic Effects Presentation

3. Quizzes

4. Final Written Assessment **Criterion:** 1. 75% of students must obtain a 76% or higher on the Outline Project submission.

2. 75% of students must obtain a 76% or higher on Biologic Effects Presentation.

3. 80% of students must complete 80% of quizzes with a 76% or higher.

4. 75% of students must complete the Final Written Assessment with a 76% or higher

Reporting Period: 2018-2019

Criterion Met: Yes

1. 2/2 (100%) of students completed the outline project with a 76% or higher.

2. 2/2 (100%) of students completed the Biologic Effects Presentation with a 76% or higher.

3. 2/2 (100%) of students completed the 93% of quizzes at a 76% or higher.

4. 2/2 (100%) of students completed the Final Written Assessment with a 76% or higher (09/16/2019)

Action: 1. The outline project requirement will remain as written. Additional rough draft submissions may be added to ensure students produce the document over time.

2. The Biologic Effects
Presentation will continue to be
required as written.

3. Students will be required to complete weekly quizzes.

4. The Final Written
Assessment will be required with
minor question modifications.
(09/16/2019)

Quality assurance and improvement program, and the policies, protocols, and procedures for the general function of the ultrasound laboratory - Understand the fundamental elements for implementing a quality assurance and improvement program, and the

policies, protocols, and procedures

Assignment - Written - Quality Assurance Report

Criterion: 75% of students must obtain 76% or higher on the Quality Assurance Report.

Reporting Period: 2018-2019

Criterion Met: Yes

2/2 (100%) of students obtained 76% or higher on the Quality Assurance Report. (09/16/2019)

Action: Continue the Quality Assurance Report Assignment as written. (09/16/2019) for the general function of the ultrasound laboratory, including the following:

- a) Administrative procedures
- b) Quality control procedures
- c) Elements of quality assurance program
- d) Records maintenance
- e) Personnel and fiscal management
- f) Trends in health care systems

Course Outcome Status: Active **Next Assessment:** 2023-2024

Identify sonographic and Doppler patterns in clinical disease that may occur in the following categories - Identify sonographic and Doppler patterns in clinical disease that may occur in the following categories:

- a) latrogenic
- b) Degenerative
- c) Inflammatory
- d) Traumatic
- e) Neoplastic
- f) Infections
- g) Obstructive
- h) Congenital
- i) Metabolic

Course Outcome Status: Active Next Assessment: 2022-2023

Assignment - Written - Final Written Assessment

Criterion: 100% of students must obtain a 76% or higher on the Final Written Assessment.

Reporting Period: 2018-2019

Criterion Met: Yes

2/2 (100%) of students received a 76% or higher on the Final Written Assessment. (09/16/2019)

Action: This assessment will continue as it is written with minor question modifications. (09/16/2019)

Follow-Up: The assignments and assessments in this course adequately evaluate learner outcomes. The content included in this course was appropriate to meet learning objectives and prepare students for success in the clinical setting. Lecture presentations can continue to be fine-tuned to improve student interactive participation and promote information retention. Proctored unit exams worked well, but some question fine tuning is necessary. (09/16/2019)