

BMEG 310 – Biomedical Imaging

Student Outcome a: an ability to apply knowledge of mathematics, science, and engineering.

Performance Criterion #1: *Describe how biomedical images are created using different imaging modalities*

Scoring Rubric:

Aspect	1: Not proficient	2: Progressing to proficiency	3: Proficient	4: Superior proficiency
Student can describe the process for creating images for different modalities	Does not answer, or the process described is incorrect	Processes are described but do not correspond to the proper modality.	Processes are described with limited detail in how the imaging is performed.	Processes are correct, and insight is given on applicability of the modality in a clinical setting

Performance Criterion #2: *Interpret biomedically-relevant images to determine the measure of image quality affected as related to modality used and image processing*

Scoring Rubric:

Aspect	1: Not proficient	2: Progressing to proficiency	3: Proficient	4: Superior proficiency
Students can describe the types of results collected with an imaging modality	Does not answer, or the description of results is incorrect	Results are described but do not correspond to the proper modality.	Results are described with limited detail in how the imaging are interpreted.	Results are correct, and insight is given on interpreting images in a clinical setting
Given a medical image, student can determine the measure of image	Measure of the image quality cannot be determined	Measure of image quality is listed, with no elaboration on why that is selected, or	Measure of image quality is listed with general explanation of why that is	Measure of image quality is listed, elaborate discussion on why that is

quality and the impact of the measure on the image.		what the impact is on the image	selected, and/or what the impact is on the image	selected and what the impact is on the image
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Student Outcome k: An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Performance Criterion #1: *Interpret biomedically-relevant images to determine the measure of image quality affected as related to modality used and image processing*

Scoring Rubric:

Aspect	1: Not proficient	2: Progressing to proficiency	3: Proficient	4: Superior proficiency
Given a medical image, student can determine the measure of image quality and the impact of the measure on the image.	Measure of the image quality cannot be determined	Measure of image quality is listed, with no elaboration on why that is selected, or what the impact is on the image	Measure of image quality is listed with general explanation of why that is selected, and/or what the impact is on the image	Measure of image quality is listed, elaborate discussion on why that is selected and what the impact is on the image

Performance Criterion #2: *Perform image processing and explain the steps of the process*

Scoring Rubric:

Aspect	1: Not proficient	2: Progressing to proficiency	3: Proficient	4: Superior proficiency
Student can follow an established protocol to manipulate an	no processing completed or manipulation resulted in	manipulation is performed with up to two steps skipped or incorrectly	manipulated images are correct but formatting is not correct	manipulated images are correct and have all

image and display result with proper formatting	undecipherable pictures	completed; formatting requirements were not followed		required formatting
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