

Physics 210 – Physics in Modern Medicine

Final Exam: Monday, June 7, 2021, from 8:30^{am} to 10:30^{am} in ISEC 387. You can start the exam at 8:00^{am} if you'd like.

Exam will be 3 questions/problems and you may bring only your textbook by Kane, the handouts from Wolbarst, and any PowerPoint's of the lectures you want.

You may neither have worked out homework problems nor copies or parts of any copies with solutions of any previous exams.

The exam *may* include the following topics (and you do not need to know any anatomy):

X-ray generation and standard film radiography

Computed Tomography in general (basic ideas behind CT.)

Clinical Computed Tomography (ex: intensity variation, depth of structures)

Radioactivity in Medicine

Nuclear Medicine in general

Radiation Dose

Applications of Nuclear Medicine (ex. brachytherapy, PET, Gamma Camera)

Radiation Safety

MRI in general (ideas behind MRI)

Clinical applications of MRI

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Course:

- Physics behind modern medical techniques and we applied these ideas to surgery, therapy, and imaging of the human body.
- Course also looked at some basic human anatomy (brain, eyes, mouth, shoulder, knee, lungs, heart, upper and lower abdomen, bones & kidney.)
- Applied some basic physics to surgery, therapy and imaging and investigated some of the clinical aspects associated with each.
- Investigate issues of safety surrounding the application of physics in medicine.

Goals:

- Learn how physics can be applied (and is integral) to medicine in all of its forms.
- Learn some anatomy, physiology, and organ systems of the human body.
- Explore some different diseases of the body and their diagnosis and treatment.
- Have some fun.