

Course Syllabus – Physics 106: Radiation Physics

Spring 2014

Location: Multipurpose Classroom Facility 304

Time: Wednesday 5:00PM – 6:50PM

Instructor:

Michael Parish, MS, DABR

Adjunct Instructor

Email: michaelparish@boisestate.edu

Office hours: By appointment

Course Objectives:

Provide a basic understanding of ionizing radiation. Course topics will include radioactivity, x-ray production, interactions of radiation, radiation detection, radiation exposure, dose deposition, and radiation shielding. Course will also cover basic mathematical and physics concepts necessary in the understanding of the above topics.

Textbooks:

1. Radiologic Science for Technologists, 10th Edition, Bushong
2. Workbook for Radiologic Science for Technologists, 10th Edition, Bushong
3. The Essential Physics of Medical Imaging, 3rd Edition, Bushburg

Schedule:

The following schedule may be adjusted as needed.

Week	Date	Topic	Assignment
1	1/22	Physics Concepts	
2	1/29	Structure of Matter	Quiz 1
3	2/5	Electromagnetic Radiation	Quiz 2
4	2/12	Electricity and Circuits	Quiz 3
5	2/19	Radioactive Decay	Quiz 4
6	2/26	Review and Exam 1	HW #1 Due
7	3/5	Particulate Radiation	
8	3/12	X-rays: Properties and Interactions	Quiz 5
9	3/19	X-rays continued: Interactions and Attenuation	Quiz 6
10	3/26	Spring Vacation	
11	4/2	X-rays continued: Production	Quiz 7
12	4/9	Radiation Detection	Quiz 8
13	4/16	Review and Exam 2	HW #2 Due
14	4/23	Exposure and Dose	
15	4/30	Radiation Shielding	Quiz 9
16	5/7	Miscellaneous Topics and Review	Quiz 10
17	5/14	Final Exam	

Course Structure:

Course will consist of lectures and supplemental material from textbooks. PDF copies of lecture slides will be made available on Blackboard. Clickers will be utilized to encourage student participation during lectures. Frequent quizzes will be given to encourage students to stay current on material. Quizzes will be administered using the clickers. Exams will be multiple choice. Students will be allowed a 3x5 hand-written note card on each exam. Students will be allowed to use a standard scientific calculator for exams (no graphing calculators or smart phone calculator apps will be allowed).

Grading:

Course grading will be based on a total of 1000 possible points.

Quizzes/Homework: 300 (Best 10 of 12 scores at 30 points each)

Exams 1 and 2: 400 points (200 each)

Final Exam: 300 points

Grading scale:

A = 93 – 100

A- \geq 90

B+ \geq 87

B \geq 83

B- \geq 79

C+ \geq 75

C \geq 71

C- \geq 67

D+ \geq 63

D \geq 59

D- \geq 55

F < 55

Academic Honesty:

Students are encouraged to study and review together. Homework assignments are meant to foster understanding of the material, and may be worked on in together; however, students are not to directly copy another's work. Cheating on quizzes and tests will not be tolerated and will result in severe penalties (refer to Student Code of Conduct).