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Professional Science Master in Medical Physics (PSMMP)

RAT 6888 Radiation Protection and Safety

Course Syllabus

1. Course title/number, credit hours: RAT 6888 Radiation Protection and Safety, 3 credit hours.

2. Prereq/coreq: Permission of the Instructor

3. Course logistics

a. Fall Term 2016

b. Notation if online course: N/A

c. Class location and time: SE 101, Friday 4:00-6:50

4. Instructor contact information

a. Instructor's name: Zoubir Ouhib DAMP, FACR/ Adjunct/Research Affiliate Associate Professor and Dr. Theodora Leventouri

b. Office address: Science Bldg. 43, Rooms 318, 112

c. Office hours: Mo, We 1-2, Fri 3-4 SE 112, by appointment, and open door policy.

d. Contact telephone number: office (561) 297-2695 fax (561) 297-2662

e. E-mail address: zouhib@brrh.com, leventou@fau.edu

5. TA contact information N/A

6. Course description

This course will provide the students the knowledge and technical background to understand the calculation methodology, compliance with the safety standards, and use of quantitative risk assessment for radiation protection & safety.

7. Course objectives/student learning outcomes

At the end of this course the students are expected to have a good understanding of safety calculation methodology, compliance with the safety standards, and use of quantitative risk assessment for radiation protection & safety.

8. Required texts/readings

Radiation protection & Dosimetry, Michael G. Stabin, Springer 2007.

9. Supplementary/recommended readings

MRI SAFETY

https://www.temple.edu/medicine/departments_centers/clinical_departments/documents/MRI-safety-quiz.pdf

http://www.health.gov.on.ca/en/common/ministry/publications/reports/disc_ct_mri/mri_report.pdf , <http://www.radiology.ucsf.edu/patient-care/patient-safety/mri>

Ultrasound safety

http://www.ncrponline.org/Publications/Reports/Misc_PDFs/Ultrasound%20Summary--NCRP.pdf <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3810427/>

Exam Dates

Quiz Dates

E1

Q1

E2

Q2

E3

Q3

FINAL

Q4

10. Course topical outline (15 weeks)

W1: Introduction and historical perspective

HW1: Readings

W2: Interaction physics applied to radiation protection

HW2: Reading and Problems

W3: Protection principles (time, distance, shielding)

HW3: Questions and Problems

W4: Handling radiation and radioactive sources

HW4: Questions and Problems

W5: Radiation survey/contamination equipment

HW5: Questions and Problems

W6: Personnel monitoring

HW6: Questions and Problems

W7: Radiation dose limits

HW7: Questions and Problems

W8: Protection regulations

HW8: Questions and Problems

W9: Shielding Principles: Beams and sources

HW9: Questions and Problems

W10: Application of statistics

HW10: Questions and Problems

W11: External exposure, Internal Exposure

HW11: Questions and Problems

W12: Environmental Dispersion, Radioactive waste:

HW12: Questions and Problems

W13: Safety of MRI

HW13: Questions and Problems

W14: Safety of ultrasound

HW14: Readings and Questions

W15: Protection regulations

HW15: Readings

11. Course evaluation method

The letter grade is decided from four exams (15/100 each) including the final, and 4 quizzes (10/100 each). Class participation and literature research are important in determining the letter grade from the grading scale. Additional point will be given to raise the grade to the higher letter grade. Further explanation will be discussed in class.

12. Grading scale

FAU Standard Grading Scale

13. Policy on makeup tests, late work, and incompletes

Student meets with the Instructor for arrangements.

14. Special course requirements N/A

15. Classroom etiquette policy (if applicable)

University policy on the use of electronic devices states: "In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions."

16. Disability policy statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) -- in Boca Raton, SU 133 (561-297-3880); in

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Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

<http://www.fau.edu/policies/files/1.13%20Disabilities%20and%20Accommodations%20FINAL%209-18-12.pdf>

17. Honor Code policy statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at <http://www.fau.edu/regulations/chapter4/4.001> , Honor_Code.pdf.