

COURSE PROFILE

Degree Program: Nuclear Engineering and Radiological Sciences

Date: August 25, 2005

Prepared by: Ruth Weiner

COURSE #: NERS 585	COURSE TITLE: Transportation of Radioactive Materials
TERMS OFFERED: Fall	For each prerequisite below, "E" denotes Enforced and "A" denotes Advised.
TEXTBOOKS/REQUIRED MATERIAL: CD of selected readings	PREREQUISITES: Senior or graduate status
INSTRUCTOR(S): Ruth Weiner	COGNIZANT FACULTY:
CoE BULLETIN DESCRIPTION: This course is an overview of how to assess the risks of transporting radioactive materials. Both routine transportation and transportation accidents are considered. Transportation of spent nuclear fuel, low-level waste, medical isotopes, fissile material, etc. are studied.	COURSE TOPICS: 1. Fundamental properties of important radionuclides 2. Some radiation "basics" -- review 3. Risk assessment of radioactive materials transportation: use of risk assessment codes 4. Packaging radioactive materials: package design and testing 5. NRC and DOT regulations governing packaging and fissile materials transport 6. Thermal and mechanical stability of packages
COURSE STRUCTURE/SCHEDULE Lecture: 2 @ 110 minutes - alternate weeks	

COURSE OBJECTIVES	1. To give the student an understanding of the risks of transporting radioactive materials 2. To familiarize the student with the regulations governing radioactive and hazardous materials transportation
COURSE OUTCOMES For <u>each</u> course outcome, links to the Program Outcomes are identified.	1. Ability to use and analyze the results of several transportation risk assessment codes 2. Ability to perform simple analytic calculations of transportation risk 3. Understanding of the different types, of packagings and their ability to withstand various thermal and mechanical accident stresses 4. An understanding of air dispersion of radioactive particles 5. An understanding of the testing protocols.
ASSESSMENT TOOLS For <u>each</u> assessment tool, links to the course outcomes are identified.	Midterm exam; final take-home exam; class participation

Revised 08/25/05