

Administrative Master Syllabus

Course Information

Course Title	Nuclear Fundamentals II
Course Prefix, Num. and Title	NUCP 1373 Nuclear Fundamentals II
Division	Vocational Science
Department	Nuclear Power Technology
Course Type	WECM Course
Course Catalog Description	Introduces worker responsibilities specific to nuclear power plants including nuclear security, quality assurance, foreign material exclusion, radiation protection, emergency response, plant access, equipment lock out for maintenance, human performance tools and significant industry events. Includes lab.
Pre-Requisites	ENER 1350 or PTAC 1302
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours:	3:3:1
Lab/Other Hours	
Equated Pay Hours	3.5
Lab/Other Hours Breakdown: Lab Hours	1
Lab/Other Hours Breakdown: Clinical Hours	Enter Clinical Hours Here.
Lab/Other Hours Breakdown: Practicum Hours	Enter Practicum Hours Here.
Other Hours Breakdown	List Total Lab/Other Hours Here.

Approval Signatures

Title	Signature	Date
Department Head:		
Division Chair:		
VPI:		

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

TOPICAL OUTLINE	DEDICATED INSTRUCTIONAL	TIME
Valve Fundamentals		2
Valve Operators		2
Filters & Strainers		3
Steam Traps		2
Lubrication		3
Pumps		3
Diesel Engine Fundamentals		2
Heating, Ventilation & Air Conditioning		1
Pipe Hangers, Supports & Snubbers		2
Air Compressors		2
Steam Turbines		2
Radioactive Waste		1
Fuel Handling Systems		2
Main Steam & Main Turbine		2
Condensate & Feedwater Systems		3
Auxilliary Feedwater		2
Circulating Water		1
Main Cooling Reservoir		1
Main Generator & Auxilliaries		1
Electrical Distribution		2
Site Diesel Generators		1
Compressed Air Systems		1
Integrated Nuclear Plant Operations		2
Off Normal, Emergency & Accident Operations		2 hours

Lab Work: Includes plant tours, selected laboratory exercises, and lecture integrated labs.

The course will feature an integrated lab to enhance the lectures.

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

1. Explain fundamental theory concepts used in classical, atomic and nuclear physics and the neutron life cycle.
2. Explain properties of materials used in a Nuclear Reactor Plant.
3. Describe basic nuclear power plant primary systems.

Methods of Assessment:

Periodic written quizzes and exams.

Periodic written quizzes and exams.

Exam analysis will be performed to identify weaknesses in program.

Required text(s), optional text(s) and/or materials to be supplied by the student:

Course specific text will be specified and/or industry specific handouts will be provided

Suggested Course Maximum:

35

List any specific or physical requirements beyond a typical classroom required to teach the course.

None, except lab use as needed for lecture demonstration.

Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

1. Quizzes, homework assignments, and class participation - 25%
2. Cross Disciplinary Skills (work ethic, safety, teamwork, housekeeping, attitude) - 25%
2. Mid-term Exam - 25%
3. Final Exam - 25%

90 to 100: A

80 to 89: B

70 to 79: C

60 to 69: D

0 to 59: F

Note: For the additional NUCP certificate, the student must complete the course with a minimum of 80%.



Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course** – Attach the Core Curriculum Review Forms
 - Critical Thinking
 - Communication
 - Empirical & Quantitative Skills
 - Teamwork
 - Social Responsibility
 - Personal Responsibility
- WECM Course** – If needed, revise the Program SCANS Matrix and Competencies Checklist