

I.T.C. Nuclear Hot Cell Manipulator Technology

(1 year)

Student Outcomes:

1. Demonstrate understanding of nuclear facility systems and components, including the ability to interpret technical drawings during operational, troubleshooting, and maintenance activities.
2. Apply knowledge of nuclear safety principles and procedures to analyze and respond appropriately to abnormal, emergency, and accident scenarios in radiological environments.
3. Perform basic electrical and mechanical maintenance tasks, including troubleshooting and repair of electro-mechanical equipment used in hot cell and remote handling operations.
4. Demonstrate proper maintenance and adjustment of telemanipulator mechanical cable and electrical power systems in accordance with operational specifications and safety standards.
5. Operate and maneuver telemanipulator arms effectively, considering load, range of motion, and mechanical limitations to ensure safe and precise handling of materials in nuclear hot cell environments.

Students must register concurrently for the lab course associated with each theory course.

Program Admissions Requirements

Official test scores must be dated within one year of program admission.

Placement Test	Math
ALEKS	30

Major Requirements

Code	Title	Credits
Required Courses:		
Choose 2 credits:		2
ESET 1100 & 1100L	Engineering Technology Orientation and Introduction to an Industrial Environment Laboratory	
OR		
ESET 1162	Industrial Safety and Regulations	
Choose 7 credits:		7
ESET 1121 & 1121L	Basic Electricity and Electronics and Basic Electricity and Electronics Laboratory	
OR		
IAET 2050 & 2050L	Introduction to Automation and Introduction to Automation Laboratory	
ESET 1140	Applied Technical Intermediate Algebra	5
ESET 1151	Nuclear Industry Fundamental Concepts	3

ESET 1151L	Nuclear Industry Fundamental Concepts Lab	1
ESET 1153	Radiological Control Fundamentals	3
Choose 3 credits:		3
ESET 1118 & 1118L	Industrial Maintenance Mechanic I and Industrial Maintenance Mechanic Lab I	
OR		
SMT 1118 & 1118L	Semiconductor Manufacturing Technician I and Semiconductor Manufacturing Technician I Lab	
ESET 2263	Nuclear Hot Cell Manipulator Operations and Maintenance	2
Choose one of the following Objective 3 courses:		3-5
MATH 1143	Precalculus I: Algebra	
MATH 1147	Precalculus	
MATH 1153	Statistical Reasoning	
MATH 1160	Survey of Calculus	
MATH 1170	Calculus I	
Objective 2 Course COMM 1101 recommended		3
Total Credits		32-34