NUCLEAR ENGINEERING TECHNOLOGY, AS

Program code: NENT-AS

Location: Three Rivers

Program Description

This degree program was initially developed in the early 1980's with Millstone Station (then Northeast Utilities, since 2000 Dominion Nuclear Connecticut) in Waterford, CT as a direct result of the Three Mile Island Nuclear Plant accident and the new federal requirement by the Nuclear Regulatory Commission (NRC) for an educational component to compliment training for federal licensure for **all** operational positions in a commercial nuclear power plant. Millstone station continues to offer full scholarships for 16 new full-time freshmen enrolling the Nuclear Engineering Technology (NET) Degree program each academic year. These scholarships also include 12 weeks of summer internship employment at the Millstone Station site between the first and second academic year. Non-scholarship students have similar summer internship opportunities with other business members of the Nuclear Advisory Committee (such as Electric Boat, Mirion Corporation, Westinghouse, etc). The nuclear program is open to all qualified students, with or without scholarship support. Using classroom, laboratory, and simulator instruction, students are educated in the theories underlying the safe operation of nuclear power plan generating stations and the demonstration of this knowledge on a state-of-the-art, one- of-a-kind reactor simulator as the capstone event.

Potential job areas upon graduation include health physics, nuclear chemistry, nuclear plant mechanical and electrical maintenance, reactor operation, reactor systems engineering, instrument & control technician, and event planning. This degree program meets the Code of Federal Regulations (CFR) requirement for federal licensure for reactor operational positions. This career path involves further utility training with mandatory written and simulator NRC testing as the employee moves up the operational job structure. For many students, the NET degree is just an initial step in their academic career as they move to pursue higher academic degrees, typically in the Nuclear Engineering and/or Health Physics disciplines.

As this NET degree program is the only two-year program in the Northeast US, graduates are in high demand for entry level technician positions in the nuclear and health physics fields.

Learning Outcomes

1. Apply an understanding of nuclear systems and operations.
2. Apply an understanding or radiological safety and radiation protection procedures.
3. Know the applicable rules and regulations and describe the roles of maintenance, control, performance, and the human interface in nuclear operation and quality assurance.
4. Understand, demonstrate, and value the safe operation of nuclear systems.
5. Conduct, analyze, and interpret laboratory experimental data.
6. Interpret laboratory analyses that measure nuclear and radiation processes.
7. Demonstrate effective oral and written communication skills.
8. Demonstrate the use of library and on-line information sources in problem solving.
9. Serve as productive team members.
10. Recognize the need to be life-long learners.

Dominion Scholarship Program: Dominion Nuclear Connecticut supports promising candidates for this Nuclear Engineering Technology program through its Dominion Nuclear Connecticut Millstone Power Station Engineering Technology Scholarships.

Up to sixteen two-year scholarships are awarded annually and cover the full cost of the program including tuition and fees, books and a monthly stipend. To be accepted into the Nuclear Engineering Technology degree program, students must meet the specific admission requirements along with other factors. **Learn more and complete the online Technology Energy Scholarship Application here**.

Prerequisites to the Program

Code	Title	Credits
MATH 1610	Precalculus	4
PHYS 1104	Mechanics	4
COMM 1301	Public Speaking	3
Total Credits		**11**

Degree Requirements

Code	Title	Credits
General Education Courses		
ENG 1010	Composition	3
MATH 2600	Calculus I	4
Elective ARHX - Arts & Humanities Course		3-4
PHYS 1105	Heat Sound Light	4
Elective SBSX - Social / Behavioral Science Course or Elective HISX - Historical Knowledge Course		3
ENG 1080	Composition II: Technical Writing	3
CCS 1001	College and Career Success	3
Program Courses		
CHEM 1210	General Chemistry I	4
Computer Science Elective [1]		3-4
EET 1044	Fundamentals of Electric Circuits and Machines	3
EET 1045	Fundamentals of Electric Circuits and Machines Lab	1
MATH 2610	Calculus II	4
MECH 2072	Fluid Mechanics and Thermodynamics	4
MECH 2074	Heat Transfer	2
MECH 2075	Thermal Sciences Lab	1
NTEC 1000	Introduction to Nuclear Systems	3
NTEC 1100	Radiation Health Safety	2
NTEC 1110	Radiation Health Safety Lab	1
NTEC 1170	Atomic and Reactor Physics	4
NTEC 1180	Nuclear Chemistry	1
NTEC 2100	Nuclear Instruments and Controls	2
NTEC 2110	Nuclear Instruments and Controls Lab	1

NTEC 2200	Nuclear Simulator	1
NTEC 2210	Nuclear Simulator Lab	1
NTEC 2300	Nuclear Topics	2
NTEC 2500	Reactor Theory	4
NTEC 2600	Nuclear Material Science	2
NTEC 2610	Nuclear Material Science Lab	1
Total Credits		**70-72**

[1] CSA 1110 Introduction to Software Applications or CSC 1201 Introduction to Programming recommended