

# CURRICULUM STANDARD

Effective Term  
Fall 2011  
[2011\*03]

Curriculum Program Title

**Nuclear Technology**

Code

**A50460**

Concentration

**(not applicable)**

## *Curriculum Description*

The Nuclear Technology curriculum prepares individuals to become qualified reactor field service technicians who conduct inspections and implement repairs and modifications to licensed nuclear facilities which have light water reactors that are shut down for refueling.

Course work includes theory and application related to industrial and engineering technology disciplines including nuclear reactor theory, boiling water reactor systems, quality control, industrial and nuclear safety, instrumentation, electrical generation, automation and robotics, welding, and various metallurgical inspection procedures.

Upon completion, graduates should qualify as entry-level nuclear reactor service technicians and have academic preparations to advance into other industrial or engineering technician positions within the commercial nuclear power industry.

## *Curriculum Requirements\**

*[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204(3)]*

- I. General Education.** Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.
- II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*
- III. Other Required Hours.** A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	<b>AAS</b>	<b>Diploma</b>	<b>Certificate</b>
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
<b>Total Semester Hours Credit (SHC)</b>	<b>64-76</b>	<b>36-48</b>	<b>12-18</b>

*\*Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

## *Major Hours*

*[ref. 23 NCAC 02E.0204 (3)]*

- A. Core.** The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.
- B. Concentration** *(if applicable)*. A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

### Nuclear Technology A50460

	AAS	Diploma	Certificate																																																								
<b>Minimum Major Hours Required</b>	<b>49 SHC</b>	<b>30 SHC</b>	<b>12 SHC</b>																																																								
<p><b>A. CORE</b>  <i>A diploma offered under this AAS degree requires a minimum of 12 SHC extracted from the required subject/course core of the AAS degree.</i></p> <p><b>Required Courses:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">ATR</td><td style="width: 10%;">112</td><td style="width: 60%;">Intro to Automation</td><td style="width: 20%; text-align: right;">3 SHC</td></tr> <tr><td>CIS</td><td>110</td><td>Introduction to Computers</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>HYD</td><td>110</td><td>Hydraulics/Pneumatics I</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>ELC</td><td>213</td><td>Instrumentation</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>ISC</td><td>112</td><td>Industrial Safety</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>ISC</td><td>130</td><td>Intro to Quality Control</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>MAT</td><td>122</td><td>Algebra/Trigonometry II</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>NUC</td><td>110</td><td>Nuclear Reactor Systems</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>NUC</td><td>120</td><td>Nuclear Reactor Theory</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>NUC</td><td>130</td><td>Applied NDE-Nuclear</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>PHY</td><td>131</td><td>Physics–Mechanics</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>PHY</td><td>132</td><td>Physics–Elec and Magnetism</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>WLD</td><td>112</td><td>Basic Welding Processes</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>WLD</td><td>143</td><td>Welding Metallurgy</td><td style="text-align: right;">2 SHC</td></tr> </table> <p><b>Required Subject Areas:</b> None</p>	ATR	112	Intro to Automation	3 SHC	CIS	110	Introduction to Computers	3 SHC	HYD	110	Hydraulics/Pneumatics I	3 SHC	ELC	213	Instrumentation	4 SHC	ISC	112	Industrial Safety	2 SHC	ISC	130	Intro to Quality Control	3 SHC	MAT	122	Algebra/Trigonometry II	3 SHC	NUC	110	Nuclear Reactor Systems	3 SHC	NUC	120	Nuclear Reactor Theory	4 SHC	NUC	130	Applied NDE-Nuclear	2 SHC	PHY	131	Physics–Mechanics	4 SHC	PHY	132	Physics–Elec and Magnetism	4 SHC	WLD	112	Basic Welding Processes	2 SHC	WLD	143	Welding Metallurgy	2 SHC	<b>42 SHC</b>	<b>12 SHC</b>	
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<p><b>C. OTHER MAJOR HOURS</b>  <i>To be selected from the following prefixes:</i></p> <p>ATR, CIS, COE, ELC, HYD, ISC, MAT, MEC, NUC, PCI, PHY, and WLD</p> <p><i>Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.</i></p>																																																											