

# CURRICULUM STANDARD

Effective Term  
Fall 2010  
2010\*03

Curriculum Program Title

**Chemical Technology**

Code

**A20120**

Concentration

**(not applicable)**

## *Curriculum Description*

The Chemical Technology curriculum prepares individuals for work as analytical technicians in chemical laboratories associated with chemical production, environmental concerns, pharmaceuticals, or general analysis.

Course work includes general chemistry, organic chemistry, introductory chemical engineering, qualitative analysis, and quantitative analysis, including such instrumental techniques as spectroscopy (UV-Vis, IR, AA) and chromatography (GC, LC). Students also utilize computerized data collection, reduction, and graphic presentation.

Graduates should qualify as entry-level chemical laboratory technicians. Their duties may include chemical solution preparation; raw material, product, or environmental sampling; and/or sample testing via wet chemistry or instrumental techniques.

## *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.

### Chemical Technology A20120

	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%;">CTC 111</td><td style="width: 70%;">Basic Chemistry I</td><td style="width: 20%; text-align: right;">7 SHC</td></tr> <tr><td>CTC 112</td><td>Basic Chemistry II</td><td style="text-align: right;">7 SHC</td></tr> <tr><td>CTC 120</td><td>Organic Chemistry I</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>CTC 140</td><td>Organic Processes</td><td style="text-align: right;">7 SHC</td></tr> <tr><td>CTC 220</td><td>Organic Chemistry II</td><td style="text-align: right;">6 SHC</td></tr> <tr><td>CTC 230</td><td>Organic Chemistry III</td><td style="text-align: right;">5 SHC</td></tr> <tr><td>CTC 240</td><td>Industrial Analysis I</td><td style="text-align: right;">5 SHC</td></tr> <tr><td>CTC 250</td><td>Industrial Analysis II</td><td style="text-align: right;">5 SHC</td></tr> </table> <p><b>Required Subject Areas:</b> None</p>	CTC 111	Basic Chemistry I	7 SHC	CTC 112	Basic Chemistry II	7 SHC	CTC 120	Organic Chemistry I	2 SHC	CTC 140	Organic Processes	7 SHC	CTC 220	Organic Chemistry II	6 SHC	CTC 230	Organic Chemistry III	5 SHC	CTC 240	Industrial Analysis I	5 SHC	CTC 250	Industrial Analysis II	5 SHC	<b>44 SHC</b>	<b>12 SHC</b>	
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<b>B. CONCENTRATION</b> (Not applicable)																											
<p><b>C. OTHER MAJOR HOURS</b>  <i>To be selected from the following prefixes:</i></p> <p>BIO, CHM, CIS, COE, CSC, CTC, HEA, and ISC</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>																											