

Curriculum Program Title

Sustainability Technologies

Code

A40xxx

Concentration

(not applicable)

Curriculum Description

The Sustainability Technologies curriculum is designed to prepare individuals for employment in environmental, construction, alternative energy, manufacturing, or related industries, where key emphasis is placed on energy production and waste reduction along with sustainable technologies.

Course work may include alternative energy, environmental engineering technology, sustainable manufacturing, and green building technology. Additional topics may include sustainability, energy management, waste reduction, renewable energy, site assessment, and environmental responsibility.

Graduates should qualify for positions within the alternative energy, construction, environmental, and/or manufacturing industries. Employment opportunities exist in both the government and private industry sectors where graduates may function as manufacturing technicians, sustainability consultants, environmental technicians, or green building supervisors.

*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.

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

**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.*

Proposed

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.

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	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE <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> Required Courses: ENV 110 Environmental Science 3 SHC SST 110 Intro to Sustainability 3 SHC SST 120 Energy Use Analysis 3 SHC SST 210 Issues in Sustainability 3 SHC Required Subject Areas: Select one subject area: Alternative Energy. Select 9 SHC: ALT 120 Renewable Energy Tech 3 SHC ALT 220 Photovoltaic Sys Tech 3 SHC <i>or</i> ALT 240 Wind and Hydro Power Sys 3 SHC SST 130 Modeling Renewable Energy 3 SHC Environmental Engineering Technology. Select 10-12 SHC: CIV 110 Statics/Strength of Mater 4 SHC <i>or</i> MEC 250 Statics & Strength of Mat 5 SHC CIV 111 Soils and Foundations 3 SHC <i>or</i> CIV 115 Geotechnical Engineering 4 SHC CIV 211 Hydraulics and Hydrology 3 SHC Sustainable Manufacturing. Select 9 SHC: ISC 120 Industrial Ecology 3 SHC ISC 220 Lean Manufacturing 3 SHC MEC 155 Env Benign Manufacturing 3 SHC Green Building. Select 12 SHC: ARC 111 Intro to Arch Technology 3 SHC CMT 210 Prof Construction Superv 3 SHC ARC 210 Intro to Sustain Design 2 SHC <i>or</i> SST 140 Green Building Concepts 2 SHC SRV 110 Surveying I 4 SHC <i>or</i> SRV 112 Landscape Arch Surveying 4 SHC	21-24 SHC	12 SHC	

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B. CONCENTRATION <i>(Not applicable)</i>	NA	NA	NA
C. OTHER MAJOR HOURS <i>To be selected from the following prefixes</i> AHR, ALT, ARC, ATR, BIO, BPR, BUS, CHM, CIS, CIV, CMT, COE, CSC, CST, DBA, DFT, EGR, EHS, ELC, ENV, EPP, FMW, FOR, GEL, GEO, GIS, HOR, ISC, LAR, MAC, MEC, PHS, PLU, PME, PMT, SRV, SST, and WAT			