

Sustainability Technologies (A40370)

The Sustainability Technologies curriculum is designed to prepare individuals for employment in environmental consulting, construction management, alternative energy, manufacturing, and related industries. Major emphasis is placed on minimizing the impact on our environment. Course work includes safety, estimating, productivity, problem solving, landscape analysis, alternative energy resource management and environmental considerations. Computer application will address the construction, modeling, and analysis of specific scenarios relating to creating a sustainable environment. Graduates should qualify for numerous positions within the construction management, mechanical engineering, civil engineering, environmental engineering, and alternative energy industry. Employment opportunities include, but are not limited to, the following: environmental engineering technicians, precision instrument & equipment repairers, construction management, and alternative energy specialists.

Degree Awarded - The Associate in Applied Science Degree – Sustainability Technologies will be awarded by the College upon completion of this program.

Admissions

- A high school diploma or equivalent is required.
- CPCC placement tests are required in English and mathematics. Developmental classes in mathematics and English courses are available for students to build basic skills and knowledge.
- A counseling/orientation appointment follows placement testing.
- Students should see a faculty advisor before registration.
- Many courses have prerequisites or corequisites; check the Course Descriptions section for details.

Note: Students who do not take program-related courses for a one-year period must reenter the program under the Catalog in effect at the time of reentry.

Contact Information - Sustainability Technologies is in the Geomatics & Sustainability Division. For more information, call 704.330.6756, or visit our web site at www.cpcc.edu/gs.

Major and Related Course Requirements

Course Number/Title	Lecture	Lab	Credits
ENV 110 Environmental Science	3	0	3
ENV 110A Environmental Science Lab	0	1	1
SST 110 Intro to Sustainability	3	0	3
SST 120 Energy Use Analysis	2	2	3
SST 210 Issues in Sustainability Technologies	3	0	3
CIS 110 Introduction to Computers	2	2	3
GIS 111 Introduction to Geo Information Systems	2	2	3
GIS 240 Airphoto Interpretation	2	2	3
DFT 151 CAD I	2	3	3
BIO 111 General Biology I	3	3	4
ENV 226 Environmental Law	3	0	3
SST 210 Issues in Sustainability Technologies	3	0	3
SST 250 Sustainability Capstone Project	1	6	3

Select One Subject Area:

		Lecture	Lab	Credits
Alternative Energy				
ALT 120	Renewable Energy Tech	2	2	3
SST 130	Modeling Renewable Energy Systems	2	2	3
ALT 220	Photovoltaic Sys Tech	2	3	3
Environmental Engineering				
CIV 110	Statics/Strengths of Materials	2	6	4
CIV 111	Soils and Foundations	2	6	4
CIV 211	Hydraulics and Hydrology	2	3	3
Sustainable Manufacturing				
ISC 120	Industrial Ecology	2	2	3
ISC 220	Lean Manufacturing Systems	2	2	3
MEC 155	Environmentally Benign Manufacturing	2	2	3
Green Building				
SRV 112	Landscape Arch Surveying	2	6	4
SST 150	Sustainable Building Design	1	3	2
CMT 210	Professional Construction Supervision	3	0	3

Technical Electives: Select 2-5 credit hours from the list below:

DBA 110	Database Concepts	2	3	3
CIV 212	Environmental Planning	2	3	3
DFT 119	Basic CAD	1	2	2
ENV 120	Earth Science	3	2	4
ENV 224	Land Resource Management	3	2	4
ENV 218	Environmental Health	3	0	3
ENV 232	Site Assessment and Remediation	2	3	3
BPR 130	Blueprint Reading/Construction	1	2	3
ARC 230	Environmental Systems	3	3	4
BUS 139	Entrepreneurship	3	0	3
BUS 230	Small Business Management	3	0	3
COE 112	Co-op Work Experience I	0	0	2
COE 122	Co-op Work Experience II	0	0	2
ENV 220	Applied Ecology	3	2	4
ENV 242	Land Quality	3	2	4
GEO 131	Physical Geography I	3	2	4
GEL 120	Physical Geology	3	2	4
GEL 230	Environmental Geology	3	2	4
GIS 121	Georeferencing & Mapping	2	2	3
ALT 220	Photovoltaic Systems	2	3	3
ALT 221	Adv Photovoltaic Systems	2	3	3
ALT 240	Wind & Hydro Power Systems	2	2	3

ALT 250	Thermal Systems	2	2	3
ALT 110	Biofuels I	3	0	3
ARC 111	Intro to Arch Technology	1	6	3
ARC 112	Construction Materials & Methods	3	2	4
ARC 210	Intro to Sustain Design	1	3	2
CIV 110	Statics/Strength of Mater	2	6	4
CIV 111	Soils and Foundations	2	6	4
CIV 210	Engineering Materials	1	3	2
CIV 230	Construction Estimating	2	3	3
CMT 214	Planning and Scheduling	3	0	3
CMT 216	Cost and Productivity	3	0	3
LAR 120	Sustainable Development	2	2	3
LAR 113	Res Landscape Design	1	6	3
LAR 111	Intro to Landscp Arc Tech	3	2	4
EGR 120	Engineering and Design Graphics	2	2	3
MEC 111	Machine Processes I	1	4	3
MEC 161	Manufacturing Processes I	3	0	3
MEC 180	Engineering Materials	2	3	3
MEC 250	Statics and Strength of Materials	4	3	5
MEC 265	Fluid Mechanics	2	2	3
MEC 267	Thermal Systems	2	2	3
MEC 270	Machine Design	3	3	4
MEC 275	Engineering Mechanisms	2	2	3
ISC 212	Metrology	1	2	3
BIO 110	Principles of Biology	3	3	4
BIO 140	Environmental Biology	3	0	3
BIO 140A	Environmental Biology Lab	0	3	1
CHM 131	Introduction to Chemistry	3	0	3
CHM 131A	Introduction to Chemistry Lab	0	3	1
CHM 132	Organic and Biochemistry	3	3	4
PHY 131	Physics-Mechanics	3	2	4
PHY 132	Physics-Elec & Magnetism	3	2	4
SRV 110	Surveying I	2	6	4
SRV 111	Surveying II	2	6	4
SRV 230	Subdivision Planning	1	6	3
SRV 240	Topo/Site Surveying	2	6	4
SRV 210	Surveying III	2	6	4
AHR 111	HVACR Electricity	2	2	3
AHR 112	Heating Technology	2	4	4
AHR 113	Comfort Cooling	2	4	4
CAR 110	Introduction to Carpentry	2	0	2
CAR 114	Residential Bldg Codes	3	0	3
ELC 112	DC/AC Electricity	3	6	5
ELC 113	Basic Wiring I	2	6	4
ELC 118	National Electrical Code	1	2	2
WLD 112	Basic Welding Processes	1	3	2

General Education Core Requirements

Course Number/Title		Lecture	Lab	Credits
ENG 111	Expository Writing	3	0	3
ENG 114	Professional Research and Reporting	3	0	3
COM 110	Intro. to Communications	3	0	3
MAT 121	Algebra/Trigonometry I	2	2	3

Students must choose a minimum of three (3) credit hours from the list of approved humanities courses listed at the end of this section of the catalog.

3	0	3
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Students must choose a minimum (3) credit hours from the list of approved behavioral and social sciences courses listed at the end of this section of the catalog.

3	0	3
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Total Degree Hours: 69-72