

Sustainability Technologies

The Sustainability Technologies curriculum prepares individuals for employment in solar energy installation and design, renewable energy, energy management, sustainable construction, corporate sustainability, environmental monitoring, and related industries. Major emphasis is placed on minimizing the impact on the natural environment while increasing social capital and promoting sustainable economics.

Course work includes environmental monitoring, solar technologies, green building practices, energy auditing and management, safety, problem-solving, and landscape analysis. Computer application addresses the construction, modeling, and analysis of specific scenarios relating to creating a sustainable environment.

Graduates should qualify for employment within solar energy, renewable energy, green building, energy management, design, and engineering. Employment opportunities include, but are not limited to, the following: solar energy technicians, solar energy designers, sustainability technicians, energy auditors, environmental engineering technicians, construction management, and renewable energy specialists.

For specific information about potential positions and wages in sustainability technologies employment, visit the Central Piedmont Career Coach website.

Sustainability Technologies (A40370)

Degree Awarded

The Associate in Applied Science degree – Sustainability Technologies is awarded by the college upon completing this program.

Admissions

- A high school diploma or equivalent is required.
- Central Piedmont 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.
- Counseling and orientation appointments follow placement testing.
- Students should see a faculty advisor before registration.
- Many courses have prerequisites or co-requisites; check the Courses section for details.

Note

Students who do not take program-related courses for a one-year period must re-enter the program under the college catalog requirements in effect at the time of re-entry.

Contact Information

Sustainability Technologies is in the Engineering Technologies Division. For more information, contact the Program Chair at 704.330.6836 or visit the Sustainability Technologies page.

General Education Requirements

ENG 111	Writing and Inquiry	3.0
COM 110	Introduction to Communication	3.0
	or COM 231 Public Speaking	

Select 3 credits from the following courses:	3.0
ENG 112	Writing and Research in the Disciplines
ENG 113	Literature-Based Research
ENG 114	Professional Research & Reporting

Select one of the following:	3.0
MAT 121	Algebra/Trigonometry I
MAT 171	Precalculus Algebra
MAT 271	Calculus I

Select 3 credits from the following courses:	3.0
ECO 251	Principles of Microeconomics
ECO 252	Principles of Macroeconomics
HIS 111	World Civilizations I
HIS 112	World Civilizations II
HIS 131	American History I
HIS 132	American History II
POL 120	American Government
PSY 150	General Psychology
SOC 210	Introduction to Sociology

Select 3 credits of the following:	3.0
ART 111	Art Appreciation
ART 114	Art History Survey I
ART 115	Art History Survey II
DRA 111	Theatre Appreciation
HUM 120	Cultural Studies
HUM 130	Myth in Human Culture
MUS 110	Music Appreciation
MUS 112	Introduction to Jazz
PHI 215	Philosophical Issues
PHI 240	Introduction to Ethics
REL 110	World Religions

Major Requirements

ENV 110	Environmental Science	3.0
SST 110	Introduction to Sustainability	3.0
SST 120	Energy Use Analysis	3.0
SST 210	Issues in Sustainability	3.0
ENV 110A	Environmental Science Laboratory	1.0
ENV 226	Environmental Law	3.0
ARC 114	Architectural CAD	2.0
SST 250	Sustainability Capstone Project	3.0
ARC 225	Architectural Building Information Modeling I	2.0
PHY 110	Conceptual Physics	3.0
PHY 110A	Conceptual Physics Lab	1.0
LID 111	Low Impact Development Design Principles	3.0
	or ELC 111 Introduction to Electricity	

Energy/Bldg Track

Complete one of two groups (See below)	12.0
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Technical Electives

Select 7 credits from the following:	7.0
ACA 122	College Transfer Success
SST 140	Green Building and Design Concepts
ARC 111	Introduction to Architectural Technology
BUS 139	Entrepreneurship I

BUS 230	Small Business Management
WBL 112	Work-Based Learning I
WBL 122	Work-Based Learning II
ENV 120	Earth Science
GEO 131	Physical Geography I
GEO 111	World Regional Geography
GEL 120	Physical Geology
GEL 230	Environmental Geology
ALT 110	Biofuels I
ARC 112	Construction Materials & Methods
CIV 230	Construction Estimating
LAR 120	Sustainable Development
LAR 111	Introduction to Landscape Architecture Technology
LAR 113	Residential Landscape Design
EGR 120	Engineering and Design Graphics
MEC 111	Machine Processes I
MEC 161	Manufacturing Processes I
MEC 180	Engineering Materials
BIO 140	Environmental Biology
BIO 140A	Environmental Biology Lab
CHM 131	Introduction to Chemistry
CHM 131A	Introduction to Chemistry Lab
CHM 132	Organic and Biochemistry
SRV 111	Surveying II
AHR 111	HVACR Electricity
AHR 112	Heating Technology
AHR 113	Comfort Cooling
ELC 112	DC/AC Electricity
ELC 113	Residential Wiring
ELC 118	National Electrical Code
BPR 130	Print Reading-Construction
CMT 214	Planning and Scheduling
CMT 216	Costs and Productivity
ARC 111	Introduction to Architectural Technology
ARC 210	Intro to Sustain Design
ARC 230	Environmental Systems
CAR 110	Introduction to Carpentry
CAR 114	Residential Building Codes
CIV 111	Soils and Foundations
DBA 110	Database Concepts
ENV 218	Environmental Health
ENV 224	Land Resource Management
GIS 121	Georeferencing & Mapping
MEC 275	Engineering Mechanisms
PHY 131	Physics-Mechanics
PHY 132	Physics-Electricity & Magnetism
SRV 110	Surveying I
CMT 210	Construction Management Fundamentals
BPR 130	Print Reading-Construction
SRV 210	Surveying III
ELC 221	Advanced Photovoltaic System Designs
CEG 210	Construction Materials & Methods

CEG 230	Subdivision Planning & Design
CEG 212	Introduction to Environmental Technology
ELC 220	Photovoltaic System Technology
ELC 230	Wind and Hydro Power Systems
EGR 250	Statics/Strength of Mater
CEG 211	Hydrology & Erosion Control
MEC 275	Engineering Mechanisms
GIS 111	Introduction to GIS
GIS 240	Air Photo Interpretation
GIS 249	Remote Sensing
GIS 125	CAD for GIS
BIO 111	General Biology I

Total Credits 67

Energy/Bldg Tracks

Group 1

ALT 120	Renewable Energy Technologies	3.0
SST 130	Modeling Renewable Energy	3.0
ALT 250	Thermal Systems	3.0
ELC 220	Photovoltaic System Technology	3.0

Total Credits 12

Group 2

CST 111	Construction I	4.0
CST 150	Building Science	3.0
CMT 120	Codes and Inspections	3.0
SST 140	Green Building and Design Concepts	3.0

Total Credits 13

No diplomas are offered in Sustainability Technologies.

Sustainability Technology Certificates (C40370)

- Sustainability Technologies Certificate – Specialization in Renewable Energy (C40370-C1) (p. 2)
- Sustainability Technologies Certificate – Specialization in Energy and the Environment (C40370-C5) (p. 3)

Sustainability Technologies Certificate – Specialization in Renewable Energy (C40370-C1)

Major Requirements

SST 110	Introduction to Sustainability	3.0
SST 120	Energy Use Analysis	3.0
SST 130	Modeling Renewable Energy	3.0
ELC 220	Photovoltaic System Technology	3.0
ALT 120	Renewable Energy Technologies	3.0

Total Credits 15

**Sustainability Technologies Certificate –
Specialization in Energy and the Environment
(C40370-C5)**

Major Requirements

SST 110	Introduction to Sustainability	3.0
SST 120	Energy Use Analysis	3.0
ALT 120	Renewable Energy Technologies	3.0
ENV 110	Environmental Science	3.0
ENV 110A	Environmental Science Laboratory	1.0
ENV 226	Environmental Law	3.0
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Total Credits		16