

Green Sectors and Related Community College Training Programs

Agriculture and Natural Resources

Twenty-eight (28) community colleges across the state offer a total of 339 educational programs related to this Green Sector. Educational opportunities available through community colleges in each Green sub-sector include programs at both the Associate of Applied Science (A.A.S.) degree and Career & Technical Education (CTE) Certificate level. A partial list of program titles is provided below.

Biomass Production for Biofuels and Industrial Materials. Expanding the production of biomass (agricultural and agricultural waste products) for biofuel and biomass pellet production, and the development of renewable industrial materials for green manufactured products.

- Agriculture Science and Technology
- Process Operations Technology

Sustainable Agriculture. Developing and expanding sustainable agriculture approaches to large-scale, commodity agricultural production that improves productivity with lesser environmental impacts.

- Agri-Business Services and Management
- Agriculture Science and Technology
- Alternative Agriculture Production Systems

Local and Regional Food Systems. Expanding local and regional food systems to provide fresh, high-quality foods and lower energy use in the transportation and distribution of foods.

- Crop Production Operations and Management
- Livestock Production Operations and Management
- Aquaculture
- Viticulture
- Agri-Business Services and Management

Landscaping and Horticulture. Expanding the use of landscaping to improve overall environmental quality including the use of landscaping to promote green buildings.

- Horticulture Technology
- Landscape Design and Maintenance
- Groundskeeping
- Turf Management
- Arboriculture
- Nursery and Greenhouse Operations and Management
- Ornamental Horticulture.

Agriculture and Natural Resources cont...

Natural Resource Management. Expanding and improving forest management and natural water resource management including parks, lakes, waterways and wetland areas.

- Natural Resources Management
- Fish & Wildlife Management
- Game Preserve Management.

Environmental Services. Expanding environmental services including prevention and control of pollution, emissions and other toxicity at their source as well as environmental remediation services including brownfield redevelopment, hazardous waste site remediation, and river and wetlands restoration.

- Environmental Services Technology
- Environmental Health & Safety

Energy, Utilities, and Waste Management

Sixteen (16) community colleges across the state offer a total of 39 educational programs related to this Green Sector. Educational opportunities available through community colleges in each Green sub-sector include programs at both the Associate of Applied Science (A.A.S.) degree and Career & Technical Education (CTE) Certificate level. A partial list of program titles is provided below.

Alternative Energy Production. Producing more alternative energy that reduces environmental impacts including renewable energy such as solar, wind, hydro, geothermal and biomass as well as more traditional energy sources produced through nuclear and clean coal technology.

- Wind Energy / Wind Turbine Technology
- Sustainable Energy Technology
- Biofuels / Bioprocessing Technology

Energy Distribution and Utilization. Improving the efficiency of energy distribution and utilization including the expansion and improvement of the national electric grid through application of smart grid technologies.

- Energy Management
- Power Plant Technology
- Electrical Distribution Technology
- Building Energy Technology

Water Management. Improving the treatment, distribution, and overall management of water for industrial, commercial and residential uses.

- Water & Wastewater Quality Management & Technology
- Water Plant Operations
- Water Treatment Technology

Waste Recycling. Improving the deconstruction, recycling and reuse of materials in both private and public waste management streams.

- Environmental Services Technology

Environmental Services. Expanding environmental services including prevention and control of pollution, emissions and other toxicity at their source as well as environmental remediation services including brownfield redevelopment, hazardous waste site remediation, and river and wetlands restoration.

- Natural Areas Management
- Natural Resource Conservation
- Environmental Technology

Transportation, Distribution and Logistics

Forty-four (44) community colleges across the state offer a total of 228 educational programs related to this Green Sector. Educational opportunities available through community colleges in each Green sub-sector include programs at both the Associate of Applied Science (A.A.S.) degree and Career & Technical Education (CTE) Certificate level. A partial list of program titles is provided below.

Fuel Efficient and Alternative Transportation Technology. Expanded development and use of more fuel efficient and alternative fueled (e.g., electric, hydrogen, hybrid) transportation technology including improved energy storage technology such as battery and fuel cell technology and support systems such as fueling stations and equipment.

- Automotive Fuel Technology
- Diesel Power Technology
- Alternative Fuel Technology
- Natural Gas Technology

Public Transportation Planning and Management. Improved public transportation planning and management and expanded use of mass transit and high speed rail.

- Automotive Technology
- Diesel Equipment Technology
- Aviation Technology

Logistics Planning and Management. Improved logistics planning and management that will improve the efficiency in the movement of goods and people and expand the use of more fuel efficient and alternative transportation technology.

- Warehousing and Distribution Operations
- Supply Chain Operations and Management
- Logistics, Production and Inventory Control

Architecture and Construction

Forty-five (45) community colleges across the state offer a total of 491 educational programs related to this Green Sector. Educational opportunities available through community colleges in each Green sub-sector include programs at both the Associate of Applied Science (A.A.S.) degree and Career & Technical Education (CTE) Certificate level. A partial list of program titles is provided below.

Building Retrofitting. Retrofitting and weatherization of existing industrial, commercial, and residential buildings to reduce energy use and improve overall environmental performance.

- Construction Technology
- Construction Trades
- Construction Management
- Facilities Maintenance
- Architectural Technology
- Engineering Technologies (Civil, Mechanical, Electrical, Environmental)

Green Development and Building Design and Construction. Expanding green commercial, industrial and residential development including the use of green building design and construction to meet leading industry standards (e.g., LEED standards).

- Energy Efficient Building Technology
- Architectural Technology
- Engineering Technologies (Civil, Mechanical, Electrical, Environmental)

Energy and Telecommunications Infrastructure Construction. Improving and expanding electrical grid and broadband infrastructure including the use of smart grid technologies.

- Electrical Technology
- Telecommunications Technology
- Engineering Technologies (Civil, Mechanical, Electrical, Environmental)

Public Transportation Infrastructure Construction. Expanding and improving public transportation infrastructure including highways, mass-transit and high-speed rail.

- Highway Construction Trades
- Construction Technology
- Architectural Technology
- Engineering Technologies (Civil, Mechanical, Electrical, Environmental)

Manufacturing

Forty-six (46) community colleges across the state offer a total of 1,075 educational programs related to this Green Sector. Educational opportunities available through community colleges in each Green sub-sector include programs at both the Associate of Applied Science (A.A.S.) degree and Career & Technical Education (CTE) Certificate level. A partial list of program titles is provided below.

Biofuel and Renewable Materials Production. Development and production of biofuels, biomass pellets, and renewable materials from biomass.

- Manufacturing Technology
- Machining
- Tool and Die Making
- Biofuels / Bioprocessing Technology

Agricultural Machinery, Equipment and Materials. Development and production of agriculture machinery, equipment, and related technologies used for sustainable agriculture, horticulture and local and regional food production as well as materials and inputs such as new fertilizers.

- Manufacturing Technology
- Machining
- Tool and Die Making
- Diesel Power Technology

Alternative Energy Machinery, Equipment and Components. Developing and producing machinery, equipment and related components for alternative energy including solar panels and wind turbines and their major components.

- Manufacturing Technology
- Machining
- Tool and Die Making
- Wind Turbine Technology

Green Building Products, Materials, and Systems. Expanding the design, development and production of building products and materials and building systems (e.g., heating and cooling and air quality systems, water management systems) for improving environmental performance of buildings.

- Manufacturing Technology
- Welding Technology
- Heating, Ventilation, Air Conditioning & Refrigeration Technology
- Engineering Technologies (Mechanical, Electrical, Environmental)

Manufacturing cont...

Energy-Efficient Appliances and Commercial and Office Equipment. Developing and producing energy efficient products used in commercial (e.g., offices, restaurants), residential (e.g., home appliances) and industrial buildings including information technology.

- Manufacturing Technology
- Welding Technology
- Engineering Technologies (Mechanical, Electrical, Environmental)

Fuel Efficient and Alternative Transportation Equipment. Design, development, and production of more fuel efficient transportation technology (e.g., diesel engines) and alternative transportation technology.

- Manufacturing Technology
- Welding Technology
- Diesel Power Technology
- Engineering Technologies (Mechanical, Electrical, Environmental)

Green Products and Processes and Environmental Management Systems. Expanded design, development, and production of green products using green processes, materials and energy-efficient production systems managed through comprehensive environmental management systems (across all manufacturing industries).

- Manufacturing Technology
- Machining
- Tool and Die Making
- Engineering Technologies (Mechanical, Electrical, Environmental)
- Industrial Technology
- Process Operations Technology