DEFINING *Environmental Technology*

What is Environmental Technology?

Environmental Technology is a career field that applies the principles of math, science, technology, engineering, communication, economics, and law to ensure product and worker health and safety. This career field involves the management, conservation, and protection of the natural environment and resources through regulatory compliance while promoting sustainability.

What is a technician?

A technician communicates and applies knowledge, skills and abilities to perform scientific, technical, and regulatory tasks.

OCCUPATIONAL CATEGORIES

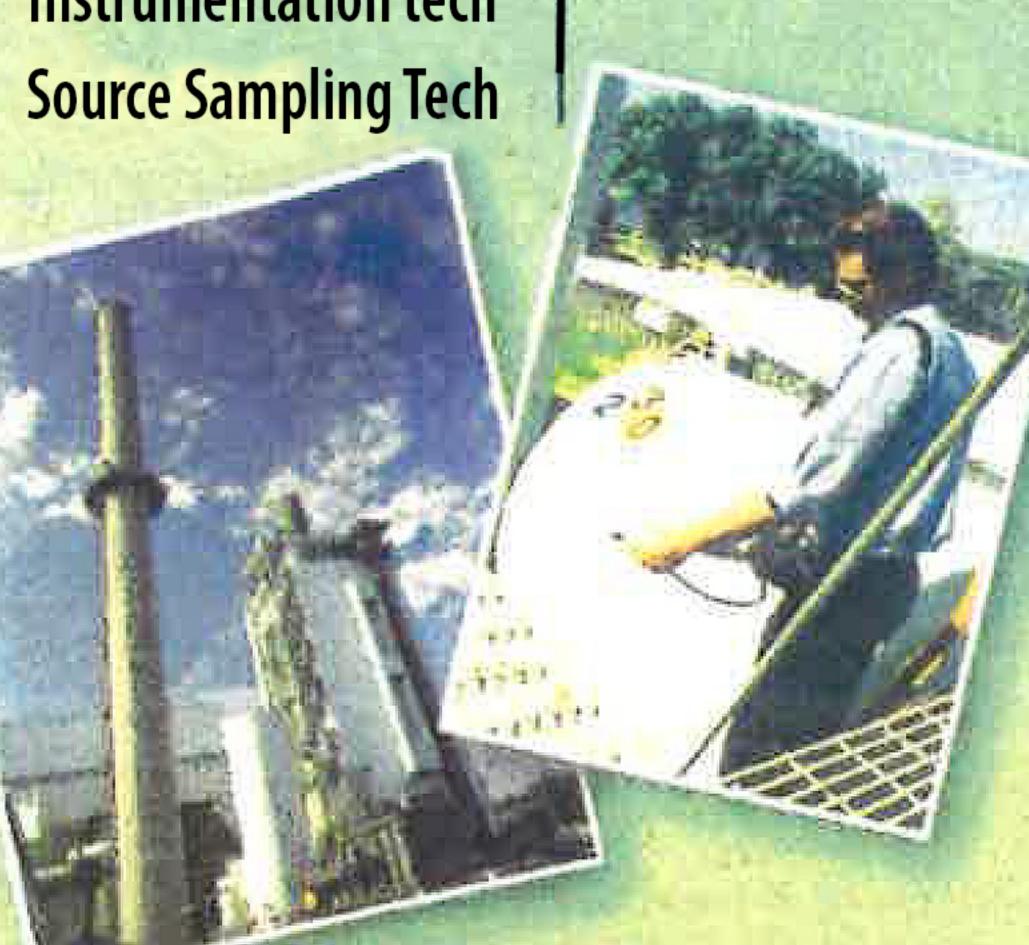**OCCUPATIONAL TITLES**

AIR QUALITY

- Air process tech
- Air quality tech
- Ambient air monitoring tech
- Auditor
- Greenhouse gas emission (Carbon footprint) specialist
- Indoor air quality tech
- Instrumentation tech
- Source Sampling Tech

EMERGENCY PREPARENESS AND RESPONSE

- Emergency planning tech
- Emergency preparedness & response trainer
- Emergency response tech
- Hazardous materials tech
- Public Safety / security officer
- Risk management tech

ENERGY TECHNOLOGIES & SERVICES*

- Buying and seling energy tech
- Energy assessment tech
- Energy efficient building contruction, project engineering, & implementation tech
- Exploration tech
- Generation (alternative) & utility-scale construction tech
- Operations & Maintenance tech
- Regulatory affairs tech
- Transmission & distribution tech
- Transportation (mobile) source tech

ENVIRONMENTAL INFORMATION MANAGEMENT SYSTEMS

- Environmental education & outreach program
- Environmental management systems tech
- Environmental database tech
- Environmental regulatory tech
- Geospatial tech
- Procurement & tracking tech (lifecycle analysis or product stewardship)

ENVIRONMENTAL LABORATORY SERVICES

- Biological / microbiological lab tech / analyst
- Chemist / analytical lab tech
- Instrumentation tech
- Quality assurance / quality control specialist
- Sample collection & prep tech
- Soil / geotechnical properties tech / analyst

ENVIRONMENTAL SITE MANAGEMENT

- Asbestos abatement worker / supervisor / inspector
- Decontamination tech
- Disaster site tech
- Environmental site assessor
- Field services tech
- Geology tech
- Geospatial tech
- Inorganic / organic contamination
- Land survey tech
- Land use planning / redevelopment tech
- Lead abatement worker / supervisor / inspector
- Mine reclamation tech
- Mobile lab tech
- Mold/mildew remediation tech
- Nonpoint source pollution tech
- Permitting / licensing tech
- Remediation tech
- Underground storage tank tech

NATURAL RESOURCES MANAGEMENT

- Aquatic / terrestrial habitat tech
- Botany / biology tech
- Ecology tech
- Fire management tech
- Fisheries tech
- Forestry tech
- Geology tech
- Geospatial tech
- Horticulture / landscape tech
- Marine science tech
- Natural resources tech
- Parks & recreation tech
- Range tech
- Smart growth tech
- Soil conservation tech
- Stormwater management tech
- Watershed management tech
- Wetlands tech
- Wildlife tech

SAFETY & HEALTH

- Chemical hygiene officer
- Compliance officer
- Ergonomist
- Hazardous material tech
- Health & safety tech
- Health physics / radiation safety tech
- Industrial hygiene tech
- Loss control / prevention representative
- Safety & health auditor
- Safety & health trainer / industrial trainer
- Safety coordinator
- Safety specialist
- Site safety manager

SOLID & HAZARDOUS WASTE MANAGEMENT

- Biohazard tech
- Hazardous waste tech
- Landfill tech
- Nuclear waste tech
- Recycling tech
- Solid waste tech
- Treatment, storage & disposal facility tech
- Waste reduction tech
- Waste-to-energy tech

WASTEWATER MANAGEMENT

- Biosolids management tech
- Cluster system operator
- Geospatial tech
- Graywater systems treatment manager
- Groundwater remediation systems tech
- Industrial pretreatment operator
- Industrial / municipal wastewater treatment operator
- Permitting / licensing tech
- Stormwater management tech
- Subsurface disposal tech
- Supervisory Control & Data Acquisition (SCADA) tech
- Tertiary / advanced wastewater systems tech
- Water security tech
- Wastewater collection system tech
- Wastewater lab tech

WATER SUPPLY & QUALITY

- Desalination tech
- Drinking water lab tech
- Drinking water tech
- Geospatial tech
- Groundwater tech / operator
- Hydrology tech
- Industrial / municipal water system operator
- Irrigation tech
- Permitting / licensing tech
- Sanitary survey tech
- Supervisory Control & Data Acquisition (SCADA) tech
- Surface water tech / operator
- Water conservation tech
- Water rights tech
- Water security tech
- Watershed protection tech
- Water supply / distribution tech
- Water supply quality educator / trainer
- Well drilling tech
- Wellhead protection tech

SUSTAINABILITY**

- Carbon offset analyst
- Carbon trading specialist
- Climate change adaptation analyst
- Climate change mitigation analyst
- Coastal zone management tech
- Ecological footprint analyst
- Efficiency specialist
- Efficient landscaping tech
- Emergency preparedness / response / natural disaster tech
- Energy efficiency specialist
- Energy resource manager
- Geospatial tech
- Global equity specialist
- Greenhouse gas emissions
- Green product specialist
- Home energy rater tech
- LEED tech
- Lifecycle analysis / product stewardship tech
- Permaculture design tech
- Smart growth tech
- Sustainability coordinator
- Sustainability educator / trainer
- Sustainability systems analyst
- Sustainable design tech
- Sustainable process & procedures manager
- Transportation & logistics specialist
- Urban agriculture tech
- Water resources tech

Defining Environmental Technology

environment · TECHNOLOGY · ENERGY · Technician · SYSTEMS

CROSS-CUTTING KNOWLEDGE & SKILLS

- Business continuity planning
- Communication devices
- Communication technologies
- Communications (written & oral)
- Computer hardware & software use
- Data management / documentation
- Emergency planning
- Emergency preparedness
- Geospatial technology (remote sensing, geographic information systems, global positioning systems)
- Globalization & systems
- Health & safety
- Instrumentation & technology
- Nanotechnology / manufacturing / biotechnology
- Pollution prevention / waste minimization
- Quality Assurance / Quality Control (QA/QC)
- Regulatory affairs
- Sampling & monitoring
- Science, technology, engineering, & math
- Sustainability
- Teamwork
- Troubleshooting / problem solving / critical thinking / research
- Workplace ethics

EMERGING AREAS / TRENDS

- Alternative fuels, including:
  o Energy resources
  o Fuel cells
  o Hydrogen
  o Nuclear
  o Waste-to-energy
- Biomimickry
- Carbon capture / management
- Carbon footprint
- Emissions trading
- Energy tomorrow
- Food flavoring industry (e.g., popcorn workers lung)
- Globalization vs localization (e.g., regulations, economics)
- Homeland Security
- Infrastructure (e.g., airports, bridges, roads, water rights, & management)
- Multicultural workforce (i.e., changing workforce demographics, 2010 meltdown)
- Myco-remediation
- Nanotechnology
- Organic farming / agriculture
- Permaculture design
- Pharmaceutical waste
- Sustainability, including:
  o Sustainable behavior
  o Sustainable communities (transit- & services oriented development)
  o Sustainable development
- Workplace safety & health
- Zero waste

COMMUNITY COLLEGE RESPONSIBILITIES

- Develop 2+2+2 articulation agreements with high schools & 4-year institutions.
- Develop a program graduate survey tool to stay in touch with past graduates to assess changing job skills.
- Develop active program advisory committees.
- Develop emerging trends programs.
- Develop / foster relationships with local industry.
- Develop shared program offerings with high schools for credit.
- Include environmental / sustainability / energy as a capstone course & / or infuse in other program offerings on campus.
- Integrate sustainability as a core competency throughout all programs.
- Lead by example (e.g., practice what you preach, walk the talk).
- Promote lifelong learning.
- Promote professional development for all college staff in regards to emerging trends / technologies (e.g., staff development through internal workshops, faculty development through venues like the SEET workshops & ATEEC Fellows Institutes).
- Provide community outreach on sustainability issues.
- Provide energy & environmental re-careering.
- Provide inverse degrees.
- Survey community & industry to assess emerging trends & business needs.
- Train & retrain technicians.
- Upgrade technician to professional status.

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