



GREEN ENTERPRISE DEVELOPMENT TRAINING



Ensuring A Sustainable Future

Valuable Green Training is now being offered FREE*
to manufacturers in the State of Maryland.

The Green Enterprise Development Training Program was designed for manufacturers interested in learning how to design and implement waste and energy-use reductions at a level that provides superior cost performance and recognizable customer value to remain competitive.

The training program is comprised of seven workshops, provided by the Maryland Technology Enterprise Institute (MTech), which combine classroom and hands-on learning.

This training is appropriate for:

- ◆ Plant Engineers
- ◆ Design Engineers
- ◆ Procurement Specialists
- ◆ Environmental Managers
- ◆ Technicians
- ◆ Green Team Participants

BENEFITS OF A 21ST CENTURY GREEN WORKFORCE

This training program can provide an entire workforce with hands-on activities, simulations, and case studies to teach environment sustainability that leads to process improvement.

Manufacturers benefit from a trained workforce that is able to:

- Understand the role and goal of sustainability
- Identify opportunities and use tools to implement solutions
- Participate in continuous improvement process in the workplace
- Possess the knowledge and skills to be active participants in your organization's efforts to implement sustainability methods and processes

WORKSHOPS OFFERED

See the reverse for a complete list of the topics covered in each workshop.

**Green Generalist (1 Day) ◆ Putting Sustainability in Practice (1 Day) ◆ Energy Management (1 Day)
Pollution Solutions (½ Day) ◆ Dumpster Dive (½ Day) ◆ H2O Conserve (½ Day) ◆ Green Chemistry(½ Day)**

THREE LEVELS OF CERTIFICATION ARE AVAILABLE

- ◆ Green Generalist Certificate – Must complete Green Generalist workshop.
- ◆ Green Specialist I Certificate – Must complete Green Generalist workshop and 3 of the other 6 workshops.
- ◆ Green Specialist II Certificate – Must complete all 7 workshops.

Participants who earn the Green Specialist II Certificate will be eligible to take the SME Green Certificate Exam with accreditation through the Society of Manufacturing Engineers (SME).

Workshops held at  **CARROLL**
COMMUNITY COLLEGE

Register online at www.GMWE.net

For information, call 410-386-2521

May 10 – Green Generalist (8:30am - 4:30pm) - Room K115 & K116

May 31 – Dumpster Dive (8:30am - 12:15pm) - Room K115 & K116

Green Chemistry (12:45pm - 4:30pm) – Room K115 & K116

June 14 – Energy Management (8:30am - 4:30pm) - Room K115

July 12 – H2O Conserve (8:30am - 12:15pm) - Room K115 & K116

Pollution Solutions (12:45 pm - 4:30 pm) - Room K115 & K116

Aug 02 – Putting Sustainability in Practice (8:30am - 4:30pm) – Room K115

Carroll County

ECONOMIC DEVELOPMENT

making business feel right at home®

BERC

Business & Employment
Resource Center

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GREEN ENTERPRISE DEVELOPMENT WORKSHOPS

GREEN GENERALIST

1 Day Module

Sustainability/Green Overview

- ❖ Sustainable Consumption and Production
- ❖ Climate Change and Causes of Global Warming
- ❖ Natural Resource Protection
- ❖ Ecosystems & Biodiversity
- ❖ Green Concepts and Key Environmental Issues
- ❖ Components of Sustainability
- ❖ Lean and Green Practices

PUTTING SUSTAINABILITY INTO PRACTICE

1 Day Module

Environmental Business Management

- ❖ Green Business Philosophy
 - ✓ Green products & eco-design
 - ✓ Green packaging
 - ✓ Clean production
 - ✓ Green supply chain & transport
- ❖ Standards, Regulations, Permitting
 - ✓ Environmental Management Standards (EMS), e.g., ISO 14001
 - ✓ Environmental Protection Agency
 - ✓ Industry Specific Standards
- ❖ Business Case for Sustainability
 - ✓ Financial aspects (e.g., triple bottom line, investment, investment recovery, etc.)
 - ✓ Environmental Performance Measurement
 - ✓ Strategic Value

ENERGY MANAGEMENT

1 Day Module

Energy Systems and Energy Management

- ❖ Non-Renewable Energy Sources
- ❖ Renewable Energy Sources
- ❖ Major Energy Systems
 - ✓ Building Envelope
 - ✓ HVAC
 - ✓ Electrical Supply
 - ✓ Lighting
 - ✓ Boiler and Steam
 - ✓ Hot Water
 - ✓ Compressed Air
 - ✓ Motor Driven Systems
 - ✓ Process Heating
 - ✓ Special Purpose Process Equipment
- ❖ Energy Audits
- ❖ Measuring Energy Use
 - ✓ Data Sources for Energy Utilization (utility bills, meters, etc.)
 - ✓ Common Energy Metrics/Measures
 - ✓ Analysis & Trending
 - ✓ Expressing Energy & Energy Waste in Monetary/Cost Terms

DUMPSTER DIVE

Half Day Module

Material and Solid Waste Management

- ❖ Solid Waste Streams
- ❖ Solid Waste Management
- ❖ Refuse, Reduce, Reuse, Recycle
- ❖ Product Lifecycle Analysis
 - ✓ Cradle-to-Cradle
 - ✓ Waste creation/Product discard
 - ✓ Green Purchasing/Procurement
- ❖ Design for Environment
 - ✓ Alternative Materials Consideration (cost, design, function, performance, etc.)
 - ✓ Source Reduction
 - ✓ Dematerialization
 - ✓ By-Product Reduction
 - ✓ Restructuring production/distribution systems
 - ✓ Identifying/implementing synergies
- ❖ Zero Waste/Zero Landfill
 - ✓ Waste Exchange
 - ✓ Strategic Value
- ❖ Measuring Material Use and Solid Waste
 - ✓ Data Sources for Material Use/Solid Waste
 - ✓ Common Metrics/Measures
 - ✓ Analysis & Trending
 - ✓ Expressing Material & Solid Waste in Monetary/Costs Terms

POLLUTION SOLUTIONS

Half Day Module

Air Emissions Management

- ❖ Air Contaminants
 - ✓ Global warming
 - ✓ Ozone depletion
 - ✓ Air quality index
- ❖ Industrial Hygiene
 - ✓ Environmental factors/stresses
 - ✓ Measurement of airborne chemical exposures
 - ✓ Regulatory Standards, e.g., OSHA, acceptable levels
- ❖ Pollution Prevention, Reduction & Treatment
- ❖ Air Sampling
 - ✓ Purpose and components of air sampling
 - ✓ Types of Air Samples (e.g. personal, breathing zone, general air/area, time weighted average, etc.)
 - ✓ Health risk assessment
 - ✓ Determine need for/effectiveness of engineering controls
 - ✓ Incident/complaint investigation
- ❖ Measuring Emissions
 - ✓ Emissions factors/metrics
 - ✓ Analysis & Trending
 - ✓ Expressing Air Management in Monetary/Cost Terms

H2O CONSERVE

Half Day Module

Supply Water/Wastewater Management

- ❖ Water Cycle
 - ✓ Environmental changes impacting water cycle
 - ✓ Supply Water Resources & Conservation
 - ✓ Sustainable drainage
 - ✓ Water efficiency
 - ✓ Water quality
 - ✓ Legislation and Regulatory Standards (e.g., EPA)
- ❖ Water Contaminants
- ❖ Water Pollution Identification, Prevention, Monitoring, Reduction & Treatment
- ❖ Measuring Water Use/Waster
 - ✓ Data Sources for Water Use/Waste
 - ✓ Common Metrics/Measures
 - ✓ Analysis & Trending
 - ✓ Expressing Water Use & Wastewater in Monetary/Cost Terms

GREEN CHEMISTRY

Half Day Module

Chemical Waster Management

- ❖ The Principals of Green Chemistry
 - ✓ "Hit List" Chemicals
 - ✓ Electronic waste (e-waste)
- ❖ Auxiliary Substances
 - ✓ Substitutions
 - ✓ Enclosure/recovery
- ❖ Process Reengineering
 - ✓ Switching from batch reactions to continuous processing
 - ✓ Alternative Reactions/Catalysts
- ❖ Environmental Hazard Prevention/Reduction
- ❖ Regulatory Standards (e.g. RoHs, WEEE, REACH, ISO, OSHA, EPA, etc.)
- ❖ Measuring Chemical Use/Waste
 - ✓ Data Sources for Chemical Use/Waste
 - ✓ Common Chemical Metrics/Measures
 - ✓ Analysis & Trending
 - ✓ Expressing Chemical & Chemical Waste in Monetary/Cost Terms