



# SUSTAINABLE MANUFACTURING CURRICULUM

## GREENING THE FUTURE BY EDUCATING TOMORROW'S WORKFORCE



### HELPING MANUFACTURERS THRIVE IN TODAY'S MARKETPLACE

With rising energy costs adding to pressures of the competitive market, how can American manufacturers not only survive but thrive in today's global economy? Listen to leading manufacturers who are convinced that sustainable manufacturing is the key to competing in today's marketplace. Within the past two years the number of manufacturing executives who view sustainability as integral to their companies' overall success has doubled.

The concept is simple. The less money manufacturers spend on wasting energy, water, raw materials, and time, the more money they have to spend on hiring new employees, adopting new innovations and expanding markets.



“Sustainability is not only central to business strategy, but will increasingly become a critical driver of business growth. How well and how quickly businesses respond to this agenda will determine which companies succeed and which will fail.”

— Patrick Cescau, *CEO of Unilever*

### WHAT ROLE CAN YOU PLAY?

As sustainable manufacturing takes hold across the country, the demand for employees who are trained to identify opportunities for improving process efficiencies and preventing environmental wastes will explode. While some job candidates have a basic knowledge of lean manufacturing techniques, few realize how environmental wastes and pollution prevention relate to lean initiatives. We are looking to you—our educators—to meet these demands by incorporating sustainability concepts into the classroom. This curriculum contains material to make that connection and much more.

Meeting sustainability goals requires a commitment to incorporate green into the day-to-day activities of all manufacturing employees—not just executives, managers, or process engineers!

By integrating this course material into your curriculum, you can help build our country's green workforce capacity, which will help revitalize our manufacturing sector and promote job growth.





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### USING THE CURRICULUM

The Sustainable Manufacturing Curriculum: Greening the Future by Educating Tomorrow's Workforce is intended for educators at high schools, career and vocational institutes, community colleges and trade schools. The curriculum is made up of three modules: Environmental Sustainability, Lean Manufacturing and Pollution Prevention, and Energy and Carbon. Topics include:

- Life Cycle Analysis
- Full Cost Accounting
- Pollution Prevention
- Green Value Stream Mapping
- Waste Management
- Resource Conservation
- Energy Efficiency
- Carbon Foot-printing
- Environmental Justice
- Social Responsibility

Each module includes a slide presentation and a facilitator's guide complete with handouts, activities, quizzes, and facilitator's notes. The facilitator's guide also uses visually engaging icons to assist educators in appropriately conveying the material to the students.

“Sustainability will help us be a trusted partner in expanding in markets around the world. Our emphasis on resource efficiency positions us well to weather rapidly rising costs for energy and materials.”

— Alan Mullaly, *CEO of Ford Motor Company*

The curriculum is designed so that educators have the flexibility to incorporate these modules into their existing course material or parceled by topic. Each module requires approximately three hours of classroom time totaling up to nine hours to implement the entire curriculum. The curriculum modules were built with flexibility in mind. They include many discussion questions and activities allowing for variable times to implement in the classroom. Educators can and should pick and choose which topics, discussion questions, and activities best fit their classroom needs.

“We might not have made it without committing to sustainability. It is a revised definition of success and this new paradigm has a name: Doing well by doing good. It is a better way to bigger profits.”

— Ray Anderson, *Founder and Former Chairman of Interface, Inc.*

### FOR MORE INFORMATION

EPA Region 4 Office of Sustainability  
[r4sustainability@epa.gov](mailto:r4sustainability@epa.gov)

Curriculum Website  
[www.e3.gov/sustainability/curriculum.html](http://www.e3.gov/sustainability/curriculum.html)

