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Sustainable Practices in High-Tech Manufacturing

 Instructors: [Anna Delgove Alday](#) +1 more

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3 modules

Gain insight into a topic and learn the fundamentals.

Intermediate level

Recommended experience [\(i\)](#)

3 hours to complete

Flexible schedule

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What you'll learn

- ✓ Implement practical strategies for energy efficiency, waste reduction, and facility-level sustainability.
- ✓ Evaluate and apply emerging technologies to enhance environmental performance.
- ✓ Analyze sustainability laws, ESG standards, and carbon credit markets to apply compliance measures and optimize environmental incentives.

Skills you'll gain

Sustainable Technologies Sustainable Engineering Operational Efficiency Compliance Management Waste Minimization Manufacturing Processes

Materials science Internet Of Things Climate Change Mitigation Sustainable Design Energy and Utilities Manufacturing and Production

Environmental Social And Corporate Governance (ESG) Regulatory Compliance Environmental Regulations Environmental Monitoring Innovation Capital Markets

AI Product Strategy Corporate Sustainability [View less skills](#)

Details to know



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November 2025



Assessments

1 assignment¹

AI Graded see disclaimer



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As global pressure grows to cut emissions and reduce resource use, high-tech manufacturers face the challenge of achieving sustainability without sacrificing performance or innovation. This practical course equips engineers, operations managers, and sustainability professionals with the skills to integrate sustainable practices into advanced manufacturing environments. Through real-world examples and interactive exercises, you'll learn how to reduce energy use, minimize waste, and improve environmental performance at the facility level. Explore emerging technologies like AI-driven optimization, IoT-based monitoring, and eco-friendly materials that are shaping the future of manufacturing. You'll also gain an understanding of global sustainability regulations, ESG reporting standards, and carbon credit markets across regions such as the EU, U.S., and India.

This course is designed for professionals in manufacturing, operations, and sustainability roles who want to drive measurable environmental impact. It's equally useful for engineers, plant managers, and corporate leaders looking to align production strategies with ESG and regulatory expectations.

Learners should have a basic understanding of manufacturing operations, sustainability principles, and environmental regulations. No advanced technical background is required, but curiosity about technology and innovation will help you get the most out of the course.

By the end, you'll be able to implement effective sustainability strategies, navigate compliance requirements, and support your organization's environmental goals with confidence.

[Read less](#)

Core Strategies for Sustainable Manufacturing

[Module details ^](#)

Module 1 • 50 minutes to complete

This module lays the foundation by examining actionable strategies and frameworks to enhance sustainability in manufacturing operations. It focuses on energy efficiency, waste reduction, and sustainable facility management, with a practical lens tailored to high-tech environments.

What's included

4 videos 2 readings 1 peer review

[Hide info about module content ^](#)

4 videos • Total 15 minutes

Welcome to Sustainable Practices in High-Tech Manufacturing

•
1 minute

Energy Efficiency in High-Tech Manufacturing

•
4 minutes

Waste Reduction and Circular Economy Principles

•
4 minutes

Facility-Level Sustainability Tactics

•
5 minutes

2 readings • Total 10 minutes

Welcome to the Course: Course Overview

•
5 minutes

Four Key Factors: Sustainability Best Practices for Electrical Manufacturers

•
5 minutes

1 peer review • Total 25 minutes

Hands-On-Learning: Sustainability Strategy Assessment for a High-Tech Manufacturing Facility

•
25 minutes

Innovations & Emerging Technologies for Sustainability

[Module details ^](#)

Module 2 • 47 minutes to complete

This module explores cutting-edge technologies driving sustainability in manufacturing, from smart factories to AI-driven optimization, and the role of materials science in reducing environmental impact.

What's included

3 videos 1 reading 1 peer review

[Hide info about module content ^](#)

3 videos • Total 17 minutes

Smart Manufacturing and IoT for Sustainability

- 4 minutes

Advanced Materials and Eco-Design in High-Tech Products

- 4 minutes

Automation and AI for Environmental Optimization

- 7 minutes

1 reading • Total 5 minutes

Cradle-to-Cradle Principles Change How Products are Designed

- 5 minutes

1 peer review • Total 25 minutes

Hands-On-Learning: Redesigning a High-Tech Product for Sustainability

- 25 minutes

Global Compliance, Carbon Credits, and Market Trends

[Module details ^](#)

Module 3 • 2 hours to complete

This module focuses on the broader ecosystem of sustainability in manufacturing — from understanding global regulations to participating in the carbon credit economy. It helps learners identify compliance risks and opportunities worldwide.

What's included

4 videos 1 reading 1 assignment 2 peer reviews

[Hide info about module content ^](#)

4 videos • Total 20 minutes

Global Sustainability Legislation for Manufacturers

- 5 minutes

Understanding and Leveraging the Carbon Credit Market

- 6 minutes

ESG Reporting and Compliance Best Practices

- 7 minutes

Course Wrap-Up

- 1 minute

1 reading • Total 5 minutes

How to Comply With EU's CSRD Carbon Accounting Rules

- 5 minutes

1 assignment • Total 20 minutes

Sustainable Practices in High-Tech Manufacturing

- 20 minutes

2 peer reviews • Total 85 minutes

Hands-On-Learning: Navigating Global Regulations and Carbon Markets

-

25 minutes

Project: Building a Global Sustainability Strategy for a High-Tech Manufacturer

•

60 minutes

Instructors



[Anna Delgove Alday](#)

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Frequently asked questions

^ When will I have access to the lectures and assignments?

To access the course materials, assignments and to earn a Certificate, you will need to purchase the Certificate experience when you enroll in a course. You can try a Free Trial instead, or apply for Financial Aid. The course may offer 'Full Course, No Certificate' instead. This option lets you see all course materials, submit required assessments, and get a final grade. This also means that you will not be able to purchase a Certificate experience.

^ What will I get if I purchase the Certificate?

When you purchase a Certificate you get access to all course materials, including graded assignments. Upon completing the course, your electronic Certificate will be added to your Accomplishments page - from there, you can print your Certificate or add it to your LinkedIn profile.

^ **Is financial aid available?**

Yes. In select learning programs, you can apply for financial aid or a scholarship if you can't afford the enrollment fee. If fin aid or scholarship is available for your learning program selection, you'll find a link to apply on the description page.

More questions



[Visit the learner help center](#)

Financial aid available, [learn more](#)

¹ Some assignments in this course are AI-graded. For these assignments, your data will be used in accordance with [Coursera's Privacy Notice](#).

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