Sustainable Manufacturing Operations Training Course

Professional Development Training Course Outline

Category	Manufacturing	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Sustainable Manufacturing Operations Training Course is designed to equip professionals with the knowledge and skills required to transform traditional production systems into environmentally responsible, resource-efficient, and economically viable operations. With the rising global demand for green manufacturing, carbon neutrality, circular economy practices, and ESG compliance, organizations are increasingly shifting toward sustainable production models that reduce waste, optimize energy consumption, and improve overall operational efficiency.

This course provides a comprehensive understanding of lean manufacturing, Industry 4.0 integration, renewable energy adoption, life cycle assessment (LCA), and sustainable supply chain management. Participants will gain practical insights into implementing eco-friendly manufacturing strategies that align with global sustainability frameworks such as UN SDGs, ISO 14001 standards, and net-zero manufacturing goals, enabling businesses to stay competitive in a rapidly evolving industrial landscape.

Programme Curriculum

Sustainable Manufacturing Operations Training Course

Introduction

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5 days

Course Objectives

1. Understand principles of sustainable manufacturing systems and green production models
2. Apply circular economy strategies in industrial operations
3. Implement carbon footprint reduction techniques in manufacturing processes
4. Optimize energy efficiency and renewable energy integration
5. Develop eco-friendly supply chain management systems
6. Conduct life cycle assessment (LCA) for industrial products
7. Integrate Industry 4.0 and smart manufacturing technologies
8. Apply lean and green manufacturing principles
9. Achieve zero waste production strategies
10. Ensure ESG compliance and sustainability reporting
11. Design resource-efficient production workflows
12. Improve sustainable procurement and supplier management
13. Drive net-zero emissions manufacturing transformation

Target Audience

1. Manufacturing Engineers
2. Production Managers
3. Operations Supervisors
4. Supply Chain Professionals
5. Environmental Health & Safety (EHS) Officers
6. Industrial Consultants
7. Sustainability Officers / ESG Analysts
8. Quality Assurance Managers

Course Modules

Module 1: Fundamentals of Sustainable Manufacturing

- Introduction to green manufacturing principles
- Overview of global sustainability frameworks (UN SDGs, ISO 14001)
- Understanding environmental impact of industrial operations
- Role of corporate sustainability in manufacturing
- Transition from linear to circular economy models
- **Case Study:** A global automotive company reduces production waste by 40% through sustainable redesign of assembly processes.

Module 2: Circular Economy & Resource Optimization

- Principles of **circular economy in manufacturing**

- Waste-to-value transformation strategies
- Material reuse and recycling systems
- Sustainable product design techniques
- Closed-loop manufacturing systems
- **Case Study:** A consumer electronics firm implements circular supply chains, reducing raw material costs by 25%.

Module 3: Energy Efficiency & Decarbonization

- Industrial **energy auditing techniques**
- Renewable energy integration (solar, wind, biomass)
- Carbon footprint measurement and reduction
- Energy-efficient machinery selection
- Net-zero manufacturing strategies
- **Case Study:** A textile plant achieves 60% energy savings by shifting to solar-powered operations.

Module 4: Sustainable Supply Chain Management

- Green procurement strategies
- Supplier sustainability evaluation
- Ethical sourcing and ESG compliance
- Logistics optimization for reduced emissions
- Digital supply chain tracking systems
- **Case Study:** A global FMCG brand reduces logistics emissions by optimizing its supplier network using AI-based routing.

Module 5: Lean & Green Manufacturing Integration

- Lean manufacturing fundamentals
- Waste elimination techniques (7 wastes reduction)
- Kaizen for sustainability improvement
- Process efficiency optimization
- Integration of lean with environmental goals
- **Case Study:** An automobile manufacturer reduces defects by 30% using Lean Six Sigma and sustainability alignment.

Module 6: Industry 4.0 & Smart Sustainable Manufacturing

- IoT-enabled smart factories
- AI and predictive maintenance
- Digital twins for sustainability optimization
- Real-time energy monitoring systems
- Automation for waste reduction
- **Case Study:** A semiconductor company uses IoT sensors to reduce machine downtime and energy consumption by 35%.

Module 7: Environmental Compliance & ESG Reporting

- Understanding ESG frameworks
- Environmental compliance regulations
- Sustainability performance indicators

- Corporate reporting standards (GRI, SASB)
- Risk management in manufacturing sustainability
- **Case Study:** A chemical manufacturer improves ESG rating by implementing transparent carbon reporting systems.

Module 8: Sustainable Product Lifecycle Management

- Life cycle assessment (LCA) techniques
- Eco-design and sustainable product innovation
- End-of-life product management
- Packaging sustainability improvements
- Product lifecycle optimization strategies
- **Case Study:** A packaging company reduces environmental impact by redesigning biodegradable product packaging.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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