Circular Economy in Manufacturing 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

The Circular Economy in Manufacturing training course is designed to equip professionals with cutting-edge knowledge and practical strategies to transition from linear “take-make-dispose” systems to regenerative, resource-efficient industrial models. As global industries face increasing pressure from climate change, resource scarcity, and ESG compliance, circular manufacturing has become a key driver of sustainable industrial transformation, green supply chains, and net-zero production systems. Circular Economy in Manufacturing Training Course integrates advanced concepts such as eco-design, industrial symbiosis, lifecycle assessment (LCA), and resource recovery optimization to help organizations reduce waste, improve profitability, and achieve sustainability leadership.

With rising adoption of Industry 4.0, smart factories, and ESG reporting frameworks, manufacturers are now expected to redesign products and processes for reuse, remanufacturing, and recycling. This training provides a structured pathway for professionals to implement closed-loop manufacturing systems, digital traceability, sustainable procurement, and carbon-neutral production strategies. Participants will gain actionable insights into real-world applications, global best practices, and policy frameworks that support circular transformation across automotive, electronics, textile, and heavy industries.

Programme Curriculum

Circular Economy in Manufacturing Training Course

Introduction

The Circular Economy in Manufacturing training course is designed to equip professionals with cutting-edge knowledge and practical strategies to transition from linear “take-make-dispose” systems to regenerative, resource-efficient industrial models. As global industries face increasing pressure from climate change, resource scarcity, and ESG compliance, circular manufacturing has become a key driver of sustainable

industrial transformation, green supply chains, and net-zero production systems. Circular Economy in Manufacturing Training Course integrates advanced concepts such as eco-design, industrial symbiosis, lifecycle assessment (LCA), and resource recovery optimization to help organizations reduce waste, improve profitability, and achieve sustainability leadership.

With rising adoption of Industry 4.0, smart factories, and ESG reporting frameworks, manufacturers are now expected to redesign products and processes for reuse, remanufacturing, and recycling. This training provides a structured pathway for professionals to implement closed-loop manufacturing systems, digital traceability, sustainable procurement, and carbon-neutral production strategies. Participants will gain actionable insights into real-world applications, global best practices, and policy frameworks that support circular transformation across automotive, electronics, textile, and heavy industries.

Course Duration

5 days

Course Objectives

1. Understand Circular Economy principles in manufacturing systems
2. Apply zero-waste production strategies
3. Implement closed-loop supply chain management
4. Develop eco-design and sustainable product engineering
5. Integrate life cycle assessment (LCA) tools
6. Optimize resource efficiency and material flow analysis
7. Enable industrial symbiosis and waste valorization
8. Adopt green manufacturing technologies
9. Align with ESG compliance and sustainability reporting
10. Reduce carbon footprint using decarbonization strategies
11. Improve profitability through circular business models
12. Leverage Industry 4.0 for sustainable manufacturing
13. Build net-zero manufacturing roadmap

Target Audience

1. Manufacturing Engineers & Plant Managers
2. Sustainability & ESG Professionals
3. Supply Chain & Procurement Managers
4. Product Designers & R&D Teams
5. Operations & Production Leaders
6. Environmental Compliance Officers
7. Industrial Consultants & Analysts
8. Government & Policy Advisors in Industry & Environment

Course Modules

Module 1: Foundations of Circular Economy in Manufacturing

- Linear vs circular economy models
- Key sustainability frameworks (UN SDGs, ESG)
- Material lifecycle thinking
- Circular value creation strategies

- Introduction to industrial ecology
- **Case Study:** Ellen MacArthur Foundation circular manufacturing model in FMCG sector

Module 2: Sustainable Product Design & Eco-Design

- Design for disassembly (DfD)
- Design for recycling and reuse
- Material selection for sustainability
- Lightweighting and durability optimization
- Product lifecycle extension strategies
- **Case Study:** Modular smartphone design reducing e-waste

Module 3: Circular Supply Chain & Procurement

- Sustainable sourcing strategies
- Reverse logistics systems
- Supplier ESG integration
- Circular procurement policies
- Supply chain transparency tools
- **Case Study:** Automotive remanufacturing supply chain (BMW circular logistics)

Module 4: Waste Management & Resource Recovery

- Industrial waste mapping techniques
- Material recovery facilities (MRFs)
- Upcycling vs recycling strategies
- Zero landfill manufacturing systems
- Hazardous waste minimization
- **Case Study:** Kalundborg industrial symbiosis network (Denmark)

Module 5: Life Cycle Assessment (LCA) & Carbon Accounting

- LCA methodology and tools
- Carbon footprint measurement
- Scope 1, 2, and 3 emissions tracking
- Environmental impact indicators
- Data-driven sustainability reporting
- **Case Study:** Textile industry LCA optimization reducing emissions by 35%

Module 6: Industry 4.0 & Smart Circular Manufacturing

- IoT-enabled resource tracking
- AI-driven waste reduction systems
- Digital twins for sustainability
- Predictive maintenance for efficiency
- Blockchain for material traceability
- **Case Study:** Smart factory reducing material waste using AI analytics

Module 7: Circular Business Models & Innovation

- Product-as-a-service models
- Remanufacturing and refurbishment systems

- Sharing economy in manufacturing
- Revenue models for circular systems
- Sustainable innovation pipelines
- **Case Study:** Philips lighting-as-a-service model

Module 8: Policy, ESG & Net-Zero Transition

- Global circular economy regulations
- ESG reporting frameworks (GRI, SASB)
- Net-zero manufacturing strategies
- Government incentives & carbon credits
- Corporate sustainability roadmaps
- **Case Study:** EU Green Deal manufacturing transformation impact

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:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com