Theory of Constraints 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

Theory of Constraints in Manufacturing Training Course is designed to help organizations identify and eliminate the primary bottlenecks that limit production performance, throughput, and profitability. In today's highly competitive smart manufacturing, Industry 4.0, lean production, and digital factory environments, TOC has emerged as a critical management philosophy for achieving continuous improvement, operational excellence, and supply chain optimization. This training equips participants with practical tools such as Drum-Buffer-Rope (DBR), Throughput Accounting, Bottleneck Analysis, and Constraint Scheduling to dramatically improve production flow and reduce operational inefficiencies.

Manufacturing organizations often struggle with hidden constraints that reduce output, increase lead time, and elevate operational costs. This course provides a structured methodology to identify system constraints, exploit bottlenecks, subordinate non-constraints, elevate system performance, and repeat the improvement cycle. By integrating TOC principles with Lean Manufacturing, Six Sigma, and Kaizen methodologies, participants will gain a holistic understanding of modern production systems optimization. The training is highly practical, case-study driven, and designed to transform manufacturing operations into high-performance, profit-maximizing systems.

Programme Curriculum

Theory of Constraints in Manufacturing Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Understand Theory of Constraints (TOC) principles in manufacturing systems
2. Identify and manage production bottlenecks and system constraints
3. Apply Drum-Buffer-Rope (DBR) scheduling technique
4. Improve manufacturing throughput and operational efficiency
5. Reduce lead time and work-in-process (WIP) inventory
6. Enhance supply chain optimization and flow management
7. Implement constraint-based decision making
8. Integrate TOC with Lean Manufacturing and Six Sigma tools
9. Optimize factory production planning and scheduling
10. Increase profitability through throughput accounting
11. Improve continuous improvement (Kaizen) culture
12. Strengthen real-time production monitoring systems
13. Develop expertise in smart manufacturing optimization strategies

Target Audience

1. Manufacturing Plant Managers
2. Production Supervisors
3. Industrial Engineers
4. Operations Managers
5. Supply Chain Managers
6. Process Improvement Specialists
7. Quality Assurance Managers
8. Lean Six Sigma Practitioners

Course Modules

Module 1: Introduction to Theory of Constraints

- TOC fundamentals and principles
- System thinking in manufacturing
- Constraint identification basics
- TOC vs Lean vs Six Sigma

- Manufacturing flow optimization
- **Case Study:** Automotive assembly plant reducing downtime through constraint identification

Module 2: Identifying System Constraints

- Types of constraints in manufacturing
- Bottleneck detection techniques
- Data-driven constraint analysis
- Process mapping tools
- Capacity limitation evaluation
- **Case Study:** Textile factory identifying dyeing process bottleneck

Module 3: Drum-Buffer-Rope (DBR) System

- Understanding DBR scheduling
- Production flow synchronization
- Buffer management strategies
- Work release control methods
- Real-time scheduling systems
- **Case Study:** Electronics manufacturing improving on-time delivery using DBR

Module 4: Throughput Accounting

- TOC financial measurement system
- Throughput vs traditional costing
- Inventory and operating expense analysis
- Profit optimization strategies
- Decision-making using throughput data
- **Case Study:** Food processing company improving profitability using throughput accounting

Module 5: Constraint Exploitation Techniques

- Maximizing constraint utilization
- Reducing idle time
- Process balancing strategies
- Resource optimization methods
- Continuous flow improvement
- **Case Study:** Steel manufacturing plant maximizing furnace utilization

Module 6: Subordination & System Alignment

- Aligning processes to constraints
- Production synchronization techniques
- Eliminating local optimization
- Work-in-process control
- Workflow harmonization
- **Case Study:** Pharmaceutical plant aligning packaging line with bottleneck process

Module 7: Elevating System Constraints

- Capacity expansion strategies
- Technology upgrades in manufacturing

- Automation and digital transformation
- Workforce optimization
- Investment decision-making for constraints
- **Case Study:** FMCG factory increasing capacity through automation upgrade

Module 8: Continuous Improvement with TOC

- TOC thinking process
- Ongoing improvement cycles
- KPI monitoring systems
- Integration with Industry 4.0
- Sustaining operational excellence
- **Case Study:** Aerospace manufacturer achieving continuous throughput improvement

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
21 Sep 2026	25 Sep 2026	Online	$1,000
21 Sep 2026	25 Sep 2026	Physical	$1,500
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0

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