Root Cause Analysis (RCA) for Industrial Incidents Training Course

Professional Development Training Course Outline

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

Course Introduction

Industrial environments today are increasingly complex, fast-paced, and highly regulated, making Root Cause Analysis (RCA) a critical competency for achieving zero-harm workplaces, operational excellence, and continuous improvement. Root Cause Analysis (RCA) for Industrial Incidents Training Course is designed to equip professionals with proven methodologies, Fault Tree Analysis, Failure Mode and Effects Analysis (FMEA), and TapRooT-style structured investigation techniques to identify not just symptoms but the true underlying systemic causes of failures, accidents, and near-misses.

With rising emphasis on OSHA compliance, ISO 45001 standards, risk mitigation, predictive safety analytics, and ESG-driven safety performance, organizations must move beyond reactive incident reporting toward proactive safety intelligence and preventive action systems. This training enables participants to develop a data-driven, evidence-based investigation mindset that strengthens process safety management (PSM), asset reliability, human factor analysis, and operational risk control, ensuring sustainable performance improvements across industrial operations.

Programme Curriculum

Root Cause Analysis (RCA) for Industrial Incidents Training Course

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Course Duration

5 days

Course Objectives

1. Master Root Cause Analysis (RCA) methodologies for industrial incidents
2. Apply 5 Whys technique for deep causal investigation
3. Perform Fishbone/Ishikawa Diagram analysis for structured problem-solving
4. Conduct Fault Tree Analysis (FTA) for complex system failures
5. Implement FMEA for risk-based preventive maintenance strategies
6. Identify human error factors using Human Factors Engineering (HFE)
7. Strengthen process safety management (PSM) compliance frameworks
8. Develop incident investigation reporting aligned with OSHA & ISO 45001
9. Analyze near-miss events for proactive hazard prevention
10. Improve operational risk assessment and mitigation planning
11. Build corrective and preventive action (CAPA) systems
12. Enhance data-driven safety decision-making using incident analytics
13. Create a zero-incident safety culture through continuous improvement systems

Target Audience

1. Health, Safety & Environment (HSE) Managers
2. Plant & Operations Managers
3. Maintenance Engineers & Supervisors
4. Process Engineers & Production Leaders
5. Risk Management Professionals
6. Quality Assurance & Compliance Officers
7. Industrial Safety Inspectors
8. Reliability & Asset Management Engineers

Course Modules

Module 1: Introduction to Root Cause Analysis in Industry

- RCA principles and safety-critical thinking
- Difference between root cause vs. symptom
- Incident lifecycle in industrial environments
- Importance of proactive vs reactive safety systems
- Case Study: Refinery fire incident due to ignored warning signals

Module 2: Incident Investigation Frameworks

- Step-by-step investigation methodology
- Data collection and evidence preservation

- Interviewing techniques for workplace incidents
- Documentation standards
- Case Study: Chemical plant leak due to poor documentation practices

Module 3: 5 Whys & Basic Causal Analysis

- Structured questioning technique
- Avoiding superficial conclusions
- Linking human + system failures
- Root cause validation methods
- Case Study: Conveyor belt failure in manufacturing plant

Module 4: Fishbone (Ishikawa) & Cause Mapping

- Categories-Man, Machine, Method, Material, Environment, Measurement
- Visual mapping of causal relationships
- Group-based problem solving techniques
- Prioritization of contributing factors
- Case Study: Food processing contamination incident

Module 5: Fault Tree Analysis (FTA) & System Failures

- Top-down failure analysis approach
- Boolean logic in failure modeling
- Critical path identification
- Systemic risk decomposition
- Case Study: Power outage in industrial facility

Module 6: FMEA & Predictive Risk Prevention

- Failure Mode identification techniques
- Risk Priority Number (RPN) calculation
- Preventive maintenance integration
- Reliability-centered maintenance alignment
- Case Study: Pump failure in oil & gas pipeline system

Module 7: Human Factors & Behavioral Safety Analysis

- Cognitive errors and workplace behavior
- Fatigue, stress, and situational awareness
- Organizational culture influence
- Human-machine interface risks
- Case Study: Forklift accident due to operator fatigue

Module 8: CAPA, Reporting & Safety Improvement Systems

- Corrective & Preventive Action (CAPA) design
- Root cause reporting structures
- KPI tracking for safety performance
- Continuous improvement (Kaizen) integration
- Case Study: Multi-incident reduction in steel manufacturing plant

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

Start Date	End Date	Location	Price
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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