

**LEAN TRANSFORM /
OPERATIONAL EXCELLENCE TRAINING**
Specification Examples

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Expected Duration of Lean Training Programmes

Type of Training	Expected Duration (Days)
White Belt (Lean Introduction)	0.5 - 1
Yellow Belt	1 - 5
Green Belt	5 - 15
Black Belt	20 - 40
5S	1 - 3
Value Stream Mapping	4 - 10
Lean Management & Leadership	7 - 20
Lean Business Improvement/Strategy	2 - 8
Benchmarking	3 - 5
Root Cause Analysis / Problem Solving	3 - 7
SMED	2 - 5
Quality circles	4 - 15
Kaizen	2 - 7
Kanban	2 - 5
OEE	10 - 20
Andon	7- 20
KPI's Performance Measurement	2 - 8
Flow Mapping (Line Balancing)	3 - 10
TPM Lean Maintenance	8 - 20
Six Sigma	10 - 20
ERP/MRP (User)	3 - 5
ERP/MRP (Lead)	10 - 20
ERP/MRP (Super User)	15 - 30
Lean Audits	3 - 5
Train the Trainer	3 – 10

Expected Duration of Environmental Training Programmes

<i>Type of Training</i>	<i>Expected Duration (Days)</i>
Environmental Awareness at Work	0.5 - 1
Environmental Management Overview (ISO 14001:2015)	0.5 - 1
Energy Management Introduction (ISO 50001:2018)	0.5 - 1
Energy Management System Implementation (ISO 50001:2018)	2 - 5
Energy Champion training	6 - 8
Waste Management/Minimisation	1 - 2
Introduction to Water Stewardship	1 - 2
Water Steward Champion training	5 - 8
Sustainable Procurement	1 - 2
Introduction to Corporate Sustainability	1 - 2
Simple Organisation Carbon Footprint	2 - 3
Life Cycle Assessment – Organisation and Product Environmental Footprinting	7 - 10
Environmental Product Declaration – Construction sector	4 - 10
Sustainable Strategy	0.5 - 2
Circular Economy – Implications for Business	2 - 3
Benchmarking for Sustainable Excellence	3 - 6

Lean Training Programme Specifications

White Belt

Course Objectives

- The objective of this training is to give participants an overview of the forms of Lean – what it means, what it does and how it works. The idea of constantly improving your processes is also introduced.
- The course is based on the NSAI SWIFT 11: 2013. Driving competitiveness using Lean, guide.
- The course is intended as an introduction to staff at all levels in an organisation as it gives a basic understanding of Lean.

Course Delivery

- 1 day

Course Content
<ul style="list-style-type: none">▪ Lean Principles▪ 8 Wastes▪ Continuous Improvement▪ Basic Lean Tools

Course Pre-requisites

None

Yellow Belt

A Yellow Lean Belt training programme is designed to give participants an understanding of how to use Lean tools and techniques to tackle and improve problems and processes in organisations.

Yellow Belt training is focused on giving trainees the basic tools to be able to actively participate in improvement teams.

Course Objectives

- **5S and Visual Management:**

This element focuses on the 5S concept of organisation and cleanliness – “*Everything in its place and a place for everything*”. The idea of a visual workplace is discussed and the importance of being able to see abnormalities is explained.

- **PIT Process:**

PIT = Performance Issues Targets refers to an approach where daily action related meetings take place. The emphasis is on identifying and addressing issues in a timely, team based way, to help deliver on targets.

- **Problem Solving:**

Problem identification and solving is at the base of effective Lean implementation. This element will introduce basic problem solving tools and methods, giving trainees the tools and experience to identify, tackle and solve problems.

Course Duration

- 4 days

Course Content
<ul style="list-style-type: none">▪ 5S and Workplace Organisation▪ Concept of Continuous Improvement.▪ Visual Management.
Practical Problem Solving <ul style="list-style-type: none">▪ Understanding Root Cause of issues▪ Problem Solving Tools including:<ul style="list-style-type: none">○ Check Sheet○ Run chart○ Process Mapping○ Value Stream Mapping○ Physical Flow Mapping.▪ DMAIC Methodology.▪ A3 Methodology.▪ PIT team Process.▪ Teams and Teamwork.
Using Practical Problem Solving <ul style="list-style-type: none">▪ Working with PPS tools to improve real life process issues.▪ Monitoring and coaching of trainees to build understanding and experience.

Course Pre-requisites Lean White Belt

Green Belt

Lean Green Belt focuses on giving a thorough and detailed insight into the key concepts of Lean Thinking.

Course Objectives

- **Lean Thinking relating to Lean Principles:** Value, Value Stream, Flow, Pull and Perfection and the wastes as identified by Lean. Value Stream Mapping and Kaizen techniques will provide you with practical understanding of how to identify and expose the opportunities of waste in business.
- **Manage Cross Functional Projects:** Successfully manage and deliver demonstrable improvements in business measures. Managers and Team Members working effectively to both manage and lead projects and cross functional teams.
- **Combine philosophies:** Combining Lean thinking with Project Management and the concepts of teams and team's performance and help project leaders drive the successful delivery of improvement projects.

Course Duration

- 7 days (Training days split over 3 weeks)

Course Content
<ul style="list-style-type: none">▪ Lean Fundamentals▪ The 8 wastes as defined by Lean▪ Lean Simulation
Review of Trainees planned project <ul style="list-style-type: none">▪ Project Management 1: Introduction Initiating Planning▪ DMAIC: Define Phase Measure Phase
Review of "Define" step on trainees project <ul style="list-style-type: none">▪ 5S Workplace Organisation▪ Visual Management: Analyse phase▪ Project Management 2: Execute Control▪ Teams and Teamwork▪ Issues Management
Review of "Measure" and "Analyse" step on project <ul style="list-style-type: none">▪ Value Stream Mapping▪ Standard Work▪ Project Management 3▪ Monitor: Status & Escalation Effective Meetings PIT
Review of "Improve" and "Control" step on project <ul style="list-style-type: none">▪ Improve phase▪ Kaizen▪ Control phase▪ Project Management 4
Trainee's approach

Course Pre-requisites Lean Yellow Belt

Six Sigma Black Belt

The Lean Six Sigma Black Belt course is designed to provide the attendee the skills and knowledge to deliver sustained business improvements through the application of the Six Sigma methodology.

Course Objectives

- Provide Trainees with a practical application of advanced tools and techniques, as well as developing the appropriate process improvement, leadership and program management skill to drive the changes that are necessary for a successful and sustainable Lean Transform.
- Using the six sigma DMAIC concept the trainee will be confident in executing process improvement projects that lead to enhanced customer satisfaction.
- Analyse a problem to determine root cause and then eliminate root cause reoccurrence.
- Have the ability to lead a cross functional project team using a range of six sigma project management, problem solving, change management and statistical analysis tools.
- Complete the ASQ examination for Six Sigma Black Belt Certification.

Course Pre-requisites

- Lean Green Belt completion or relevant professional qualification
- 2-3 years relevant experience
- Two references from signatories in your organization

Course Duration

- 21 days (Training days split over 5 months)
- Certificate only achieved on completion of a major project, documenting application of the tools and techniques learnt and evidence of the savings generated and changes implemented.

21 Day Black Belt Course Summary

Content	Activities	Topics covered
Introduction	Black Belt trainee orientation	<ul style="list-style-type: none"> • Introduction to Lean six sigma • Lean six sigma history • Lean six sigma and your organisation • Lean six sigma structures • Lean six sigma qualifications • Body of knowledge • Programme management • Competitiveness, Customer Satisfaction
Define	<ul style="list-style-type: none"> • Select project • Choose sponsor and team leader • Set projects aims and goals • Get project approved • Select Team • Train Team 	<ul style="list-style-type: none"> • Project charter/A3 • The problem statement and project goal • Team Leadership • Team membership selection & role • Gantt chart, Project planning • Meeting management • Project practical example • Costing project savings • SIPOC chart • Business process mapping • Change Management • Rolled through put yield & DPMO • Communication & Negotiation skill • Surveys • Quality Function Deployment • EFQM
Measure	<ul style="list-style-type: none"> • Select Measurement (existing/new) • Identify required data • Collect Data • Convert data into information • Establish the measurement 	<ul style="list-style-type: none"> • Measurement selection • Data representation – Introduction • Data collection forms • Variable & attribute data • Simple graphing techniques • Histogram • Descriptive statistics • Central Limit Theorem • Measurement systems analysis • Attribute and variable gauge repeatability & Reproducibility • Destructive Tests • Sampling • Probability • Probability distributions • Nominal Group Techniques • Force field analysis • Affinity Diagram

Content	Activities	Topics covered
Analyse	<ul style="list-style-type: none"> Review measurement information Propose reasons for problems Validate reasons for problems Prioritise problems Select problems to address 	<ul style="list-style-type: none"> Cause and effect analysis (fishbone) The 5 why's Brainstorming & affinity mapping Process Capability Z tables and sigma levels Hypothesis testing type 1 and type 2 error Confidence intervals variable data Confidence intervals attribute data F test T Test Chi Square test Simple Linear Regression Scatter diagram, correlation Multiple regression One way/Two way ANOVA Multi Vari charts Boot Strapping FMEA Variance Components
Improve	<ul style="list-style-type: none"> Review conclusions from analysis phase Develop improvement ideas & prioritise Implement improvement ideas Monitor progress Repeat above steps as often as required 	<ul style="list-style-type: none"> Poka Yoke, 5S, SMED, TPM Designed experiments Blocking and randomising experiments 2 Level screening experiments Taguchi Experiments Response Surface Methods EVOP Fold over experiments Mixture designs Boot Strapping The lean supply chain
Control	<ul style="list-style-type: none"> Graphed & displayed measurements taken Train relevant personnel Take corrective action if deviations occur/revert to improve phase Prove robust solution 	<ul style="list-style-type: none"> Statistical process control Run chart Variable control charts Attribute control charts Advance control charts Theory of constraints Six sigma story board Control Plan Reliability testing Pass fail functional testing Kaizen Certification criteria Lean six sigma programme progress in the organisation Practical Project examples
Full day of project presentation and feedback		
Lean and six sigma Black Belt examination to be taken on completion of training & black belt project		
Mid and post- training clinics to troubleshoot project issues, air views, and share experiences		

5S Workplace Organisation

Course Overview

5S is considered the starting point on a company's Lean Journey as it centres on employees and their work areas. The improvements made are immediate and are visible very quickly. 5S is Visual communication and is designed to develop a team member's awareness and responsibility of normal and abnormal conditions in their direct work area. It enables people to see problems and waste as soon as they surface and to act on small things that can make it a better, safer, more ergonomic and easier place to work.

Course Objectives

- **Sort** - Remove all items and general clutter from the area
- **Set-in-order** – Arrange items so they are easily found within 20 seconds
- **Shine** – Clean and inspect the work area to uncover any issues and prevent further problems
- **Standardise** – Make an organised work place the norm and have a set of standards across all areas, making any problems arising noticeable and dealt with immediately.
- **Sustain** – Conduct regular audits to ensure continuous improvements and prevention of back sliding into bad habits.

Course Duration

- 2 days

Course Content
<ul style="list-style-type: none">▪ Introduction to 5S▪ The five 'S' elements▪ How to release one hour per employee per day through 5S▪ 5S Visual Management System▪ 5S Cleaning Schedule Template▪ 5S Red Tag Log Sheet
<ul style="list-style-type: none">▪ 5S Shine Template▪ 5S How to Audit▪ 5S Metrics▪ Before and After Photos Template▪ Waste Walk Template and Exercise▪ 5S Idea Capture System

Course Pre-requisites

None

Value Stream Mapping

Course Objectives

- Participants will receive detailed instructions on the theory and practice of Value Stream Mapping.
- To identify and map improvement projects and produce a charter for each selected candidate project, clearly defining what the project is and the benefit that will be achieved by completing it.
- After completing the course the businesses fulfilment system will be documented and analysed with a view to identifying potential areas for improvement.
- Process and collect data which is used to construct your Value Stream Map.
- Key deliverable from the programme include the current, ideal and future state value stream maps, identification of projects, project roadmap and completion of specific charters for the first project planned for implementation.

Course Duration

- 5 days

Course Content
<ul style="list-style-type: none">▪ Introduction to Value Stream Mapping▪ Process definition▪ Process walk/Data collection▪ Map Material flow▪ Review and define actions
<ul style="list-style-type: none">▪ Data collection- Supplier flow, Information Flow▪ Definition of timeline▪ Define critical objectives for the organisation▪ Create the Current State Map
<ul style="list-style-type: none">▪ Lean Simulation
<ul style="list-style-type: none">▪ Complete the Ideal State Map▪ Complete a gap analysis▪ Review the improvement plans for critical metrics▪ Select projects
<ul style="list-style-type: none">▪ Close open actions▪ Complete projects charters▪ Define the roadmap for projects▪ Create the Future State Map

Course Pre-requisites

None

Course Overview

This course is designed to practically demonstrate what a problem solving process is using the A3 report, which is used by industry leaders such as Toyota Motor Company. It provides trainees with the confidence, knowledge and skills to “*Find a problem, solve a problem and prevent a problem from reoccurring*”.

Course Objectives

- Confidently use the A3 problem solving approach to improve process performance.
- Understand the value of cross-functional teamwork.
- Feel confident and eager to use the skills learnt and apply them in their workplace.

Course Duration

- 2 days

Course Content

Introduction to Problem Solving

- **What is A3 problem solving, why it's different and what are the benefits**
- **Overview of the A3 report as a Thinking Process**

Practical Application of the A3 Problem Solving Process

- **Define the problem**
- **Define the current state – flowchart, data, graphical presentation**
- **Define the Goal –SMART Goal**
- **Root Cause Analysis – 5 Why's, Analysis, Cause and Effect, Prioritisation**
- **Action Plan 5S, Error Proofing**
- **Monitor Results – Graphical Analysis**
- **Lessons Learnt**

Course Pre-requisites

None

Leadership

This programme is designed to develop the management skills of participants.

Course Objectives

Leading People and Teams programme aims to develop the capability and confidence of managers, supervisors and team leaders in the basic skills required to manage effectively. It provides a structure and supportive framework for increasing self-awareness, building and maintaining positive workplace relationships, identifying everyday challenges and developing strategies and techniques for managing effectively.

The key objective on Leading People and Teams is to develop the management skills of participants. This programme offers the skills for career advancement along with those necessary to manage people.

Course Duration

- 3 days

Course Content

- Introduction to Management
- Managing Self
- Management Styles
- Management Responsibilities
- Building and Leading Effective Teams
- Decision-Making in Management
- Coaching to Improve Performance
- Performance Management
- Delegation
- Managing Effective Meetings

Course Pre-requisites

None

Course Objectives

The objective of this programme is to provide management with a detailed understanding of the strategy/policy deployment concept, also referred to as Vision driven Leadership for Breakthrough Improvement. It answers the question “How does senior management communicate the direction in a way that all staff can engage with and implement?”

It's objective is to clearly lay out how management can ensure that the staff know what activities align with company goals and are able to successfully introduce positive change to the business.

Course Duration

2 days

Course Content

- To explain 'Hoshin Planning' Model'
- To explain its purpose and benefits to the organisation
- To clarify the benefits of implementing Strategic Deployment
- Creating the plan - a worked example
- How to apply Hoshin Planning - practical application

Course Pre-requisites

None

Benchmarking

This course will provide an understanding of competitiveness benchmarking, why do it / the benefits, and what you get. The trainee will become familiar with benchmarking tools, specifically the quantitative / hard data **Winning Measures** tool & qualitative / opinion based **Probe Tool**. An Action Plan for developing competitiveness will be created at the start and at the end of the Transform process.

Course Objectives

- The trainee will be capable of understanding the value and importance of the benchmarking concept and process.
- The trainee will understand quantitative & qualitative Key Performance Indicators (KPI's), the purpose and methodology of benchmarking in an organisational performance context.
- The trainee will be capable of interpreting the benchmarking results, identifying and prioritising issues and gaps and developing recommendations for improvement.

Course Duration

- 2 days

Course Content
<ul style="list-style-type: none">▪ Benchmarking – What is it?▪ Benchmarking – Why do it/ the benefits, what you get?▪ Brief background on the tools & their development.▪ Mechanisms for gathering the quantitative data.▪ Training on how to conduct a facilitated workshop for the collection for the opinion based data.
<ul style="list-style-type: none">▪ Provide understanding & need for consistent application/data integrity▪ Benefits of a facilitated approach when gathering the company scores/ data <p>Case Study</p> <ul style="list-style-type: none">▪ Role play on data collection (specifically a facilitated workshop)▪ Drawing the benchmark/selecting the appropriate comparison group/data integrity▪ Analysing the output reports/identifying gaps & issue areas, prioritising areas for improvements with recommendations to do so.

Environmental Awareness at Work

Course Overview

The key to effective environmental management is employee involvement at each stage of the process.

This course provides an understanding of the main environmental issues facing Irish companies and identifies areas where employees own awareness and performance can improve the overall environmental performance of the company.

This course will provide the foundations of environmental awareness and give delegates an understanding of pollution, impact assessments and emergencies.

Course Objectives

- Identify the meaning of: the environment, weather, climate, habitats, ecosystems, biodiversity, pollution, sustainability
- Identify the importance and benefits of sustainable development
- Identify an environmental management system's main components and the certification process
- Outline the principles and practice of impact (risk) assessments
- Identify the main sources, types, controls and impacts of air pollution
- Identify the main sources, controls and impacts of water pollution
- Identify the main sources, controls and impacts of environmental noise
- Identify waste types
- Identify the waste hierarchy and ways to effectively manage waste
- Outline the measures that need to be in place when dealing with emergencies

Course Duration

One-day training programme

Course Content

- **Element 1 – Foundations of environmental awareness**
 - Meaning of key environmental terms
 - Sustainability
 - Components and certification of an environmental management system

- **Element 2 – Pollution, impact assessment and emergencies**
 - Principles and practice of risk assessments
 - Air, water and land pollution
 - Environmental noise
 - Waste management
 - Environmental emergencies
 - Exam: Multiple Choice

Who should attend?

This course will be of interest to all personnel who need to understand the interaction between their company, its environmental management system and the environment.

Course Overview

This course is designed to provide a step-by-step guide to the requirements of ISO 14001:2015. It is structured to give participants an understanding of how to design and implement an EMS within their own organisation.

The course addresses the requirements of ISO 14001:2015 and will incorporate examples of documentation required for ISO 14001 and will be practical in nature.

Course Objectives

- Understand the elements of an environmental management system such as ISO 14001:2015
- Understand the requirements of ISO 14001:2015
- Provide an understanding of environmental aspects and impacts
- Provide an understanding of environmental objectives and how to achieve them
- Understand environmental planning and control
- Understand performance evaluation and corrective action and environmental management review
- Appreciate the importance of EU and Irish environmental legislation

Course Duration

One day training programme

Course Content

- **Overview and introduction to environmental management.**
 - **Requirements of ISO 14001:2015 and the EMAS Regulation.**
 - **Initial environmental review (IER).**
 - **Scope of EMS.**
-
- **Environmental policy.**
 - **Significant environmental aspects/issues.**
 - **Developing objectives and targets and planning to achieve them.**
 - **Operational control.**

- **Competence and communication.**
- **EMS audit and review.**
- **Environmental legislation and compliance evaluation.**
- **Comparison and requirements of standards.**
- **Role of third-party auditors/certification bodies.**

Who should attend?

This course will be of interest to anyone in the company who is involved in the design, development and implementation of an EMS and those in the organisation who wish to reduce their impact on the environment. The course will also be of interest to companies who do not necessarily wish to move towards formal certification of their EMS but who wish to reduce their impact on the environment and incorporate best environmental practices.

Course Overview

This course provides an introduction to ISO 50001. The course will incorporate examples and case studies of companies who have successfully achieved energy savings and will be practical in nature.

Course Objectives

- Understand the internal and external benefits of having an energy management system
- Appreciate the differences between ISO 50001, ISO 14001 and ISO 9001
- Appreciate the management system elements of ISO 50001
- Have an overview of what is involved in introducing ISO 50001 in your organisation

Course Duration

Half- day training programme

Course Content

- Introduction to the course and course objectives
- Difference between ISO 50001, ISO 14001 & ISO 9001
- Analysis of ISO 50001 Energy Management standard clauses including the following:
 - *Understanding the organization and its context*
 - Understanding the needs and expectations of interested parties
 - Determining the scope of the energy management system
 - *Leadership and commitment*
 - Energy policy
 - Organizational roles, responsibilities and authorities
 - *Planning*
 - Actions to address risks and opportunities
 - Objectives, energy targets and planning to achieve them
 - Energy review
 - Energy performance indicators
 - Energy baseline
 - Planning for collection of Energy data
 - *Support*
 - *Operation*
 - Operational planning and control
 - Design

- **Procurement**
- ***Performance evaluation***
- **Monitoring, measurement, analysis and evaluation of energy performance and the EnMS**
- **Evaluation of compliance with legal and other requirement**
- **Internal audit**
- **Management review**
- ***Improvement***
- **Non-conformity and corrective action**
- **Continual improvement**

- **Sample documentation from different aspects of the standard will be reviewed as the ISO 50001 standard is analysed.**

Who should attend?

This course will be of interest to anyone in the company who is involved in the design, development and implementation of an Energy Management System and those in the organisation who wish to reduce the cost of their energy requirements and to reduce the impact of energy on the environment. The course will also be of interest to companies who do not necessarily wish to move towards formal certification of their Energy Management System but who wish to reduce their impact on the environment in terms of greenhouse gas emissions reductions and incorporate best energy practices.

Course Overview

This course is designed to provide a step-by-step guide to the implementation of an Energy Management System. It is structured to give participants the knowledge and confidence to design and implement an Energy Management System within their own organisation.

The two-day course will incorporate examples and case studies of companies who have successfully achieved energy savings, and will be practical in nature.

Course Objectives

- Understand the internal and external benefits of having an energy management system
- Appreciate the differences between ISO 50001, ISO 14001 and ISO 9001
- Understand the management system elements of ISO 50001
- Implement ISO 50001 in your organisation

Course Duration

Two day training programme

Course Content

DAY 1

- **Introduction to the course and course objectives**
- **Difference between ISO 50001, ISO 14001 & ISO 9001**
- **Detailed analysis of ISO 50001 Energy Management standard clauses including the following:**
 - **Context of the organization**
 - **Needs and expectations of interested parties including legal obligations and other requirements**
 - **EnMS policy**
 - **Energy review**
 - **Risks and opportunities**
 - **Energy data collection plan**
 - **Energy objectives, targets and programme**
 - **Operational control**
 - **Performance evaluation**
 - **Review of the EnMS by top management**

- Exercises will be carried out and sample documentation from different aspects of the standard will be reviewed as the ISO 50001 standard is analysed.

DAY 2

- Exercises will be carried out and sample documentation from different aspects of the standard will be reviewed as the ISO 50001 standard is analysed (contd.).
- ISO 50001 implementation check list
- Questions or areas that require clarification will be discussed

Who should attend?

This course will be of interest to anyone in the company who is involved in the design, development and implementation of an Energy Management System and those in the organisation who wish to reduce the cost of their energy requirements and to reduce the impact of energy on the environment. The course will also be of interest to companies who do not necessarily wish to move towards formal certification of their Energy Management System but who wish to reduce their impact on the environment in terms of greenhouse gas emissions reductions and incorporate best energy practices.

Course Overview

The course is ideal for professionals who seek a thorough program that covers the technical, economic and regulatory aspects of effective energy management.

Course Objectives

- Assess the energy consumption of an organisation and identify the areas of significant energy use.
- Understand the principles behind energy purchasing and tariff mechanisms and to analyse energy bills within an organisation.
- Understand the common terminology and units used in energy engineering
- Properly understand the issues related to operation and maintenance of key electrical and mechanical plant and properly understand the principles of operation of this equipment.
- Identify the relevant instruments and tools required to carry out an energy audit within an organisation
- Plan an energy audit of an organisation to ensure the areas of significant energy use are addressed and ordered to identify end use in advance of supply.
- Apply the principles of benchmarking the organisation against other similar organisations and utilise key metrics to assess energy performance in area of significant energy use.
- Identify the key requirements for a monitoring, targeting and reporting system within an organisation.
- Identify the key opportunities for energy improvements related to the areas of significant energy use within an organisation using sound audit principles.
- Assess the potential energy savings related to the energy savings identified in terms of energy and monetary values.
- Apply sound financial principles to energy management projects including life cycle costing and savings to investment analysis to allow rational prioritisation of energy projects towards implementation.
- Apply the appropriate approach towards the verification of savings from energy savings projects including the international performance measurement & verification protocol (IPMVP).
- Identify the key issues related to energy in a range of related activities such as building management and control systems, commissioning and maintenance and how to ensure that energy management becomes integrated into the activities
- Engage and interact in a structured energy management environment with a full understanding of the ISO 50001 energy management standard approach.

Course Duration

Six day training programme

Course Content

- Need for Energy management
 - Conducting an energy audit
 - Energy audit instrumentation
 - Energy accounting & benchmarking
- Boilers & Thermal systems
 - Motors & drive applications and compressed air systems
 - Maintenance
 - Commissioning
- Alternative Energy
 - Energy Efficient Buildings
 - Energy Codes & Standards
 - Energy Purchasing
- Thermal energy storage
 - Electrical systems
 - Energy management systems and effective planning
 - Industrial systems, co-operation and CHP
- HVAC systems and improvements
 - Economical analysis and life cycle costing
 - Energy rate structures
 - Building Automation systems
 - Lighting Systems and system improvements

Who should attend?

Engineering Managers, Energy Managers, Design Engineers, Facility Managers, Energy Team Leaders, Commissioning Personnel, Energy Team members and Senior Technicians.

Course Overview

Most companies are unaware of the true cost of waste to their business, typically 4-5% of turnover. Growing environmental legislation and consumer pressure has increased the need for organisations to improve their environmental performance. Undertaking a structured waste minimisation programme will not only save money, but will also improve the environment, the organisation's profile and competitiveness.

This one-day introductory course is designed for all organisations that produce waste and wish to understand and develop skills in waste minimisation.

Course Objectives

- Understand the necessity for undertaking a waste minimisation programme.
- Be competent in planning and implementing an internal waste minimisation programme.

Course Duration One-day training programme

Course Content

- **Waste Management in Ireland**
 - **What is waste minimisation?**
 - **Legal obligations in relation to Waste Management**
 - **Benefits of waste minimisation**
-
- **Waste minimisation process – The 8-Step Waste Reduction Programme**
 - **Waste Management Hierarchy**
 - **Developing an Action Plan – Implementing Waste Management in your company**
 - **Case Studies**

Who should attend?

Personnel without previous knowledge or experience of waste issues, who:

- Wish to gain an understanding of the elements of waste minimisation
- Need to undertake a waste minimisation programme

Course Overview

The programme is designed to give participants a foundation level understanding of Water Stewardship principles and standards, the business case for action and the steps involved in better corporate water stewardship.

Course Objectives

- Understand Water Stewardship principles and standards
- Establish the Business Case for Water Stewardship
- Support sustainability and environmental commitments e.g. Origin Green

Course Duration

1 day

Course Content

- Introduction to Water Stewardship Principles and Standards
- Review water stewardship activities and practices at the facility
- Establish targets for a water stewardship programme
- Selling the benefits of water stewardship
- Understanding your site and catchment

Course Pre-requisites

None

Course Overview

The programme is designed to give participants the knowledge and skills to deliver water stewardship programmes at their facility and verify the impacts. It focusses on achieving environmental, operational, financial and reputational impacts at your facility along with related resource efficiency savings. It will assist water stewards to understand and implement data driven controls and real time monitoring to optimise water use on site

Course Objectives

- Develop a water charter for your facility
- Visualise Water Lifecycle - Better understand water demands onsite and water use trends
- Identify water optimization/reduction opportunities across the facility e.g. leaks
- Support sustainability and environmental commitments e.g. Origin Green

Course Duration

5 to 8 days

Course Content

- Review water stewardship activities and practices at the site
- Identify risks (financial, reputational, regulatory or physical) and how to mitigate them
- Define project, preparation of a Water Stewardship Charter, Targets and Action Plan
- Establish a baseline assessment to identify possible savings and KPIs
- Fundamentals of Metering and Data Technologies
- Introduction to Data Analytical Tools
- Developing a Control and Monitoring Regime
- Creating an A3 Report

Course Pre-requisites

None

Course Overview

This one-day programme will provide guidelines for organisations wanting to integrate sustainability into their procurement processes. The training is intended for stakeholders involved in or impacted by procurement decision processes.

Course Objectives

- A sound knowledge of sustainability principles.
- The reasons and drivers for sustainable procurement.
- An understanding of how to incorporate sustainability into procurement policies and procedures.
- To promote sustainability strategies within your organisation and with your supply base.

Course Duration

1 day

Course Content

- Introduction to General EMS Schemes: ISO 14001, Eco Label, PEFC
- Introduction to Sustainable Procurement and ISO 26000
- Understanding the Fundamentals of Sustainable Procurement
- Integrating sustainability into the organisation's procurement policy and strategy
- Organizing the procurement function towards sustainability
- Integrating sustainability into the procurement process

Course Pre-requisites

None

Course Overview

This one-day course has been designed to provide staff members with a practical introduction to corporate sustainability, so they are equipped with the awareness, knowledge and skills required to underpin long-term sustainable corporate behaviours in relation to core sustainability areas including: energy, water, waste, biodiversity, sourcing, and responsible citizenship

Course Objectives

- Develop sustainability awareness, knowledge and best practices across the workforce
- Ensure all site personnel undergo appropriate training enabling them to make positive contributions to more sustainable resource usage and reduction of resource waste
- Provide enhanced communication of sustainability credentials to the firms supply chain
- To provide all participants with a portable Sustainability certification, which will indicate that the holder successfully completed a comprehensive programme on sustainability

Course Duration

1 day

Course Content

- Introduction to: sustainability, UN SDGs, circular economy, national landscape and key stakeholders
- Global and national energy, water, and waste challenges, impacts, opportunities and benefits
- Practical advice on acting more sustainability as a citizen
- Biodiversity challenges and opportunities
- Supply chain sustainability and sourcing
- Bespoke and aligned corporate content can also be included in the programme as required

Course Pre-requisites

None

Simple Organisation Carbon Footprint

Course Overview

An Organisation Carbon Footprint is the starting point of company's journey to reduce their CO₂ impact. A carbon footprint benchmark is established for CO₂ impacts from energies, resources and consumables used, as well as business travel and commuting. Specific datasets are collected to establish the benchmark. The organisation is trained to understand the data to be collected, and the CO₂ impacts of the energies, resources and materials used. The course enables companies to understand the global warming impacts of their operations, identify hotspots and take action to reduce the impacts. As part of the course, a carbon calculator tool is provided to the company, tailored to their specific activities.

Course Objectives

- Understand what type of data to collect to measure the CO₂ footprint.
- How to collect and organise the data.
- Use of a simple excel carbon calculator tool.
- How to interpret the data – what are the specific CO₂ impacts of the energies and resources used.
- Understand the principles of organisational and product environmental Footprinting.
- Upskill and enable organisations to benchmark, monitor and reduce their carbon footprints, using monthly and annual CO₂ footprint results.

Course Duration

- 2-3 days. Training incorporates classroom coaching, mentoring, data collection, and interpretation.

Course Content

- **Introduction to Carbon Footprinting**
- **Carbon impacts in the context of other environmental impacts**
- **Relevant standards: ISOs 14064; 14040; 14044; 14025**
- **The carbon footprints of energies, resources and consumables used**
- **The data collection process**
- **Using the data in the carbon calculator tool**
- **Discussion on the results from the carbon calculations**
- **What are scopes 1, 2 and 3 carbon footprints, and what a company can do to address them**
- **Principle of carbon footprinting at the product level**
- **Principles of a full Life Cycle Assessment, including organisation and product footprinting**
- **The incoming EU Organisation and Product Environmental Footprint programs**
- **Training will include classroom collection, analysis and reporting of the company's data**

Course Pre-requisites

None

Course Overview

An Environmental Product Declaration (EPD) is a declaration by a manufacturer of the environmental footprint of its product(s). It is used in the construction sector, conforming to I.S. EN 15804. It is a formal document that is the output of a Life Cycle Assessment (LCA) carried out on the products and the organisation. The course explains the basic principles of the LCA, how and what data is to be collected for the LCA. Staff are trained on the use of a proprietary LCA tool to generate the LCA results. The LCA results are the basis of the EPD document (issued by the Irish Green Building Council). Training also covers the requirements of the standards governing the EPD and how the EPD is used in the market to gain competitive advantage. The course is for staff with environmental/sustainability responsibility.

Course Objectives

- Understand the principles of an Environmental Product Declaration and Life Cycle Assessment.
- Overview of the Irish EPD programme.
- How to collect and organise the data for the LCA (and EPD).
- Understand the environmental impacts of energies, resources and materials used.
- Use of the LCA tool and how to interpret and use the results of the LCA.
- How to use the EPD to promote the company's product in the market.
- Enable organisations to benchmark, and continually monitor and improve their organisational and product environmental footprints, based on outputs of the LCA.

Course Duration

4 to 6 days (simple manufacturing, small product range), 7 to 10 days (complex manufacturing, large product range). Training involves classroom and on-line learning, mentoring in data collection and data organisation, use of an LCA tool, interpretation of LCA results, interpretation of the EPD, use of the EPD in the market, and managing environmental impacts at an organisational and product level.

Course Content

- **Introduction to Environmental Product Declarations (EPD) and Life Cycle Assessment (LCA)**
- **Overview of the Irish EPD programme**
- **How an EPD is used in the construction industry**
- **Scenarios in the LCA analysis: cradle-to-gate; the use phase; the end-of-life phase; wastes**
- **How environmental impacts are allocated to the products and across the organisation**
- **The data collection process - classroom sessions on collection of the company's data**
- **Understanding the data and its relevance in the analysis**
- **Explanation of the environmental footprints of energies, resource uses and materials**
- **Training on the use of the LCA environmental footprinting tool**
- **Environmental reporting**
- **The scopes 1, 2 and 3 environmental footprints, and what a company can do to reduce them**
- **Environmental labelling and the three types of environmental labels, Types I, II and III**

Course Pre-requisites

None

Course Overview

A Life Cycle Assessment (LCA) is a measurement of the environmental impacts of a product, over the various stages of its life, covering: raw material processing, manufacturing, distribution, use, disposal or recycling. LCAs are mostly carried out for the manufacturing phase (cradle to factory gate); but more stages can be added at a client's discretion. The course describes the main elements of the Life Cycle Assessment: (i) the scopes to be analysed, (ii) the data inventory, (iii) calculation and interpretation of the results. The coursework trains on the collecting, organising and inputting relevant data into a customised LCA tool. In the course, the LCA tool provides an environmental footprint at both the organisation level (OEF) and product level (PEF) for the company and its products. Staff are trained in the use of the tool for the company's ongoing environmental footprinting needs. The outputs of the LCA enables companies to understand all the environmental impacts (including CO₂) of their entire operations, to identify environmental hotspots, and to take action to reduce these impacts. The course is mainly targeted at staff with environmental and/or sustainability responsibility.

Course Objectives

- Understand the principles of a Life Cycle Assessment (LCA).
- How an LCA is used to measure both the organisation and product environmental footprints.
- Collecting the right data.
- Understand the full range of environmental impacts of energies, resources and materials used.
- How to interpret and use the results of the LCA – the organisation and product footprints.
- Delivery of Life Cycle Assessment reports for the company's operation and products.
- Enable companies to benchmark, monitor and improve their organisation and product environmental footprints.
- Staff are trained in the use of the LCA tool for their ongoing environmental footprinting requirements.

Course Duration 7 to 10 days. Training involves classroom and on-line learning, mentoring in data collection and data organisation, use of an LCA tool, interpretation of results, and reporting on environmental impacts at an organisational and product level.

Course Content

- **Introduction to Life Cycle Assessment**
- **Scenarios in the analysis: cradle-to-gate; distribution; use; recycling or disposal**
- **How environmental impacts are allocated to the products and across the organisation**
- **The data collection process - classroom sessions on collection of the company's data**
- **Understanding the data and its relevance in the analysis**
- **Explanation of the environmental footprints of energies, resource uses and materials**
- **The different types of environmental impacts: global warming CO₂, ozone depletion, acidification, eutrophication, smog formation, resource depletion and economic costs.**
- **Training on the use of the LCA environmental footprinting tool**
- **Direct and indirect (scopes 1, 2 and 3) environmental impacts, and how to reduce them**
- **Principle of environmental footprinting at the product level – allocation of impacts to products**
- **An overview of the EU Product and Operational Environmental Footprint program**

Course Pre-requisites

None

Course Overview

The Circular Economy – The linear growth model favoured for the past 250 years was based on the availability of plentiful and inexpensive natural resources and is living on borrowed time. An economy built on the principles of ‘take, make, waste’ is no longer viable. Unless current trends are reversed over the coming decades, resource supply disruptions coupled with rising and increasingly volatile prices will translate into significant challenges for companies and countries where growth remains tied to the use of scarce natural resources. In a circular economy, growth is decoupled from the use of scarce resources through disruptive technology and business models based on longevity, renewability, reuse, repair, upgrade, refurbishment, capacity sharing, and dematerialization. The circular economy brings about a total re-alignment of customer and business incentives.

Course Objectives

- Understanding the Circular Economy opportunity and journey
- Transitioning to more circular business models
- Designing for the Circular Economy
- Measures and Tools to assist the transition
- Circular Process understanding - from waste to reuse.
- Best practice and case studies in circularity
- Changing buyer and supplier behaviours in a Circular Economy

Course Duration

2 days

Course Content

- **Topic 1: Understanding the circular economy**
The circular economy provides many solutions to the challenges of our current linear economy including climate change. The latest teaching in circular economy from EMF, Cradle to Cradle and biomimicry.
- **Topic 2: Business value in a circular economy**
Through closed loop supply chains and reverse logistics, many new opportunities for business emerge. This topic explores value creation and new business models in a circular economy.
- **Topic 3: Products lifecycle – Designing for the Circular Economy**
The smaller the loop, the greater the profitability of the system and the environmental impact. Addressing product design and life extension.
- **Topic 4: Returns and Remanufacturing**
Remanufacturing enables companies to recapture and harvest value on a product or component level presenting new business opportunities.
- **Topic 5: Waste – Avoiding waste and Maximising its value**
Taking inspiration from nature, when redesigning our approach to waste. Symbiosis and other alternatives.
- **Topic 6: Circular Business Systems**
The shift from linear to circular business models. Managing the transition key challenges and opportunities; Paas, Pay-per-Use, Rental models.
- **Topic 7: Measuring the impact of the Circular Economy**

Tools for measuring the environmental and financial benefits of the Circular Economy including LCA and product carbon accounting

- **Topic 8: Changing Buyer and Supplier Behaviours**

How our procurement and sales processes need to adapt in a circular economy.

- **Topic 9: Technology fuelling the Circular economy.**

How technologies such as IOT, Blockchain, Mobility, Track 'Trace etc can accelerate the Circular Economy.

Who should attend

Executives responsible for company ESG, Non-Financial and Sustainability issues, Supply Chain and Procurement executives, Business Development, Sales & Marketing executives, Corporate Communications, Finance, Facilities and Operations.

Course Pre-requisites

None