

Advanced Manufacturing Training Centre of Excellence

Training Catalogue 2021



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Course Deliver Modes

ATMOE courses are delivered using the following delivery methods. Classes can be delivered using one or more methods to support flexible learning requirements and to support employer needs.

Classroom

Course delivery in a physical classroom /training room in AMTOE or other location.

Virtual Classroom + Workshop

Course content delivery using video conference facilities. Hands-on training in AMTOE or other location.

Virtual Classroom

Course content delivery using video conference facilities only.

Online Self-Directed

Learners on their own initiative engage and complete course content at their own pace withing a defined time window.

Introduction



We are delighted to launch our first training catalogue of Industry 4.0 related courses for employers and employees. Industry 4.0 is driving an accelerated convergence of the physical and cyber worlds in order to digitise manufacturing operations in sectors such as engineering, biomedical engineering, (bio)pharmaceuticals, food & drink etc. Secondly there is also a convergence of business and manufacturing systems which will transform how businesses operate and how they interact and respond to their customers. These changes are creating a need for new skills to support the adoption of Industry 4.0 technologies and to successfully operationalise these new capabilities within businesses.

The AMTCE was established to address the growing mismatch between the capability needs of employers and the existing skills competencies within the manufacturing workforce. Rapid technological innovation within the manufacturing sector will only exacerbate the situation in the future.

In responding to this challenge, the AMTCE has engaged with key stakeholders over the last year to identify both current and future needs and to understand how manufacturing workforces will need to grow their skills capabilities. Upskilling and reskilling play a key role in providing an effective response to challenges such as Brexit, accelerating global competition and customer dynamics.

Manufacturing Technology IQ

Grow the manufacturing technology “IQ,” of your workforce to deliver improved productive and increased business innovation.

AMTCE training course offerings under the SOLAS Skills to Advance (STA) (www.solas.ie/programmes/skills-to-advance) programme represents a significant and tangible response to the identified needs of industry. The STA programme offers up to 100% funding to employers and employees.

Our course offerings span across the breadth of the technology landscape relevant to both current manufacturing operations and those required in industry 4.0 driven operations. Our courses are delivered by leading industry training practitioners to ensure the highest quality learning experience and outcomes. We provide our learners with access to the latest in manufacturing technologies and small classes to size ensure that our learners have extensive hands-on exposure to training equipment to provide an enhance experiential learning experience.

As we navigate through the current coronavirus pandemic and governmental guidelines and restrictions, we are pleased to offer training options online to be followed by blended learning and instructor lead training as COVID restrictions allow later in the year. For the latest details on available classes and schedules please check out our website (www.amtce.ie)

On behalf of myself and the AMTCE team we look forward to engaging with you to deliver our exciting training offering through the course of 2021. Please feel free to reach out to the AMTCE team to discuss your training needs with us. We would be delighted to hear from you.



Dr. Michael J McGnath
Director AMTCE



About AMTCE

The AMTCE which launched in 2020 is a leading national facility located in the Xerox Technology Park, Dundalk, Co Louth featuring over 55,000 ft of training rooms, classrooms, workshops, labs, event space and business centre facilities. Our ambition is to become the leading provider of advanced manufacturing training in Ireland.

The Centre's strategic alliance with the Irish Manufacturing Research Centre and with the Portview Trade Centre, Belfast, Northern Ireland will ensure that we develop, and deliver training programmes that address both current and future needs. Our strategic partnerships will also provide employers throughout the Island of Ireland with direct access to the innovation and solutions driven services of these and other key organisations.

This Centre is the missing part of the Irish manufacturing ecosystem comprising IMR, Higher Education, and now, Further Education and Training. The project will enable the Further Education and Training Sector to play its part in fulfilling the training element that has been under-represented up to now. The AMTCE is also part of an International network of USA, All-Ireland and European stakeholders. This All-Ireland project with links to 3rd level institutions in Belfast, DKIT, Portview Trade Centre, FIT and ERNACT (European Regions Network for the Application of Communications Technology) promises to be one of Ireland's most innovative projects of this decade.

The key focus for the AMTCE is to provide training on state-of-art equipment and processes which will underpinning the transition of companies to industry 4.0 based operations. The AMTCE provides training across a wide range of technologies relevant to both current manufacturing operations and those required in industry 4.0 driven operations. Our training is very much practically orientated with hands-on experience with the latest equipment and laboratory facilities to ensure a great learning experience.

The AMTCE features a wide range of training programmes including:

- Robotics and Cobotics
- Precision Engineering and Advanced Metrology
- Additive Manufacturing and 3D Printing
- Virtual Reality Applications
- Industrial Systems and Control
- Welding Processes and Technologies
- Workshop Fabrication and Machining Processes
- Optimisation of Manufacturing of Processes and Operations for Industry 4.0
- Exploiting Data Practices, Analytics and AI in Advanced Manufacturing
- Pharmaceutical and Biopharmaceutical Process Technologies

Each programme comprises of a mix of classes which are classroom based, blended learning, online instructor led using a virtual classroom or self-directed.

All training rooms in the AMTCE feature the latest in large touch screens to provide a multimedia learning centre allowing more interaction with the educational content. The centre has also adopted the latest in online eLearning supports with our learning management system, immersive learning to augment hands-on equipment training and our academy learning platform to support knowledge sharing and personal development activities. Our goal is to utilise e-learning technologies in manner which enhances the quality and enjoyment of the learning experience with AMTCE.

Laboratory Facilities

The ATMCE has over 7000 square feet of commercial grade laboratory facilities comprising of two large primary labs and a number ancillary facilities including dedicated instrumentation rooms. The primary labs provide significant benchspace and 21 high specification gas serviced fumehoods.



Pharma/Chemistry/Food
Laboratories

Equipment

The AMTCE has made a significant capital investment in state-of-the-art equipment to provide our learners with an excellent hands-on learning experience. Our equipment includes the following:

In addition to the equipment list below, the centre also has access to a wide variety of trainer supplied equipment such as cobots from different vendors etc.



Robotics
& Cobotics



Industrial Systems
& Control



Precision
Engineering



Engineering
Workshop



Virtual



Welding



Industry 4.0



Additive
Manufacturing



A background image of industrial machinery, likely a robotic arm or assembly line, with various cables and mechanical components. The image is slightly blurred and has a blue and green color palette.

Systems Technologies and Processes for Industry 4.0

- » Pneumatic System Maintenance
- » Mechanical Maintenance
- » Preventive Maintenance
- » Maintenance Planning
- » Pneumatic Technologies
- » Introduction to Pneumatics

Classroom, Blended learning, and Instructor lead online courses will be scheduled throughout the year. For details on course schedules and dates please go to amtce.ie/courses

Pneumatics Systems

AMC21008 | 4 Days | Classroom

Overview

The course is designed to enable learners to maintain and carry out fault-finding activities in pneumatic systems in a safe manner.

Modules

1. Recognise the function and relationship of pneumatic systems
2. Preparations for pneumatic system maintenance
3. Perform inspections and maintenance tasks
4. Systematic approaches to troubleshooting pneumatic systems
5. Identifying pneumatic components and their symbol representations
6. Understanding pneumatic circuit drawings and documentation
7. Methods for safe isolation of pneumatic systems
8. Installation or rebuilding circuits using an information brief
9. Removing, dismantling, and replacing pneumatic components
10. Identify underlying causes of common faults in pneumatic systems
11. Analysis of preventative, & predictive maintenance approaches
12. Reinstatement of pneumatic systems, returning system to online mode
13. Regulations, Standards & Safety in pneumatic systems

Learning Outcomes

1. Maintain the efficient operation of pneumatic systems
2. Interpret circuit diagrams
3. Identify standard pneumatic components and understand their functions and maintenance requirements
4. Use pneumatic circuits to predict the behaviour of machines
5. Locate, diagnose and replace faulty components
6. Explain the Health & Safety legislative requirements for air-powered machinery
7. Take suitable precautions when working with pneumatic equipment

Learner Profile

Employed Maintenance Technicians

Certification

SMC Award

Mechanical Maintenance

AMC21013 | 5 Days | Classroom

Overview

The purpose of this course is to equip the learner with the knowledge, skills, and competencies to perform fault finding and repair tasks during mechanical maintenance activities and to enable learners to work independently or supervise the work of others.

Modules

1. Workplace Safety
2. Maintenance Systems
3. Maintenance Planning
4. Engineering Materials
5. Mechanical Power Transmission
6. Engineering Drawings
7. Mechanical Fault Diagnosis

Learning Outcomes

1. Identify standard hazard warning signs for dangerous substances
2. Specify the steps required to ensure safety during work on a system component
3. List the common methods of condition based monitoring
4. Describe the main maintenance systems to include the role and use of maintenance records
5. Suggest planned maintenance checks
6. Outline the operation of a computerised maintenance programme
7. Describe common engineering materials and their properties as they relate to wear and maintenance requirements
8. Explain the principles of mechanical power transmission between rotating shafts

Learner Profile

Technicians that will be undertaking work on Mechanical systems

Certification

Vendor Certificate of Completion

Preventive Maintenance

AMC21014 | 5 Days | Classroom + Online – Self Directed

Overview

The purpose of this course is to provide the learner with the knowledge, skills, and competencies to develop a practical preventive maintenance schedule for plant and equipment and to enable the learner to work independently or in a supervisory capacity.

Modules

1. Maintenance Systems
2. Maintenance Planning
3. Monitoring Systems
4. Energy Efficiency
5. Maintenance - corrective, preventive and predictive
6. Remote connection & Cyber Security
7. OEE, MTF, Equipment Availability
8. Computerised Maintenance Management Systems

Learning Outcomes

1. Understand how maintenance theory and practice has responded to the changing demands brought about by increased customer expectations, lower unit costs and increasingly sophisticated technology
2. Explain how condition-based monitoring is an essential part of a preventive maintenance philosophy
3. Recognise the links between quality management and maintenance performance
4. Ability to construct fault finding charts to enable operators to repair faults in a safe and competent manner
5. Understand how various maintenance strategies interrelate and the central role played by preventive maintenance in reducing the costs and frequency of breakdown maintenance
6. Research how a Preventive Maintenance System works
7. Describe change, the types of change and how change impacts on the maintenance function

Learner Profile

Engineers and technicians working in manufacturing environments

Certification

Vendor Certificate of Completion

Maintenance Planning

AMC21015 | 1 Day | Classroom

Overview

This course aims to equip the learner with the fundamental theory of maintenance organisation by examining and understanding current maintenance Industry metrics. The course will also cover maintenance risk assessments.

Modules

1. Maintenance Performance Indicators
2. Maintenance Systems
3. Reliability
4. Job Hazard Analysis

Learning Outcomes

1. Outline the development of Key Performance Indicators (KPIs), OEE, Availability metrics
2. Complete Availability calculations using Industry standard metrics
3. List and explain the differences and applications for corrective, preventive and improvement maintenance
4. Outline, giving examples, the classifications of condition-based maintenance techniques
5. Calculate overall reliability using Reliability Block Diagrams
6. Conduct a JHA risk assessment of a maintenance procedure

Learner Profile

Maintenance technicians and engineers

Certification

Vendor Certificate of Completion

Pneumatic Technologies

AMC21053 | 2 Days | Classroom

Overview

The course is designed to enable learners to recognise the standard symbols for pneumatic systems and to understand how to design and build pneumatic logic circuits.

Modules

1. Pneumatic Valves
2. Circuit Schematics
3. System Sizing
4. Pneumatic Systems

Learning Outcomes

1. Be able to recognise the standard symbols for pneumatic system components
2. Understand the function and maintenance needs of common pneumatic elements
3. Diagnose pneumatic circuit and component faults
4. Understand, design, and build pneumatic logic circuits

Learner Profile

Mechanical Engineers/Technicians

Certification

SMC Award

Introduction to Pneumatics

AMC21054 | 3 Days | Classroom/Online - Self Directed

Overview

The course is designed to introduce learners to the basic principles, properties and components used in pneumatic and electro-pneumatic systems.

Modules

1. Introduction to pneumatics
2. Pneumatics Systems
3. The properties of gasses
4. Air compression and distribution
5. Compressed air treatment
6. Pneumatic actuators
7. Directional control valves
8. Vacuum technology
9. Measuring pneumatic variables
10. Pneumatic applications

Learning Outcomes

1. Understand the applications of pneumatics
2. Understand the various principles of pneumatics
3. Understand the functions of pneumatics

Learner Profile

Engineers and Technicians who manage or operate pneumatic systems and pneumatically actuated equipment

Certification

SMC Award

Robotics and Collaborative Robotics

- » Robotics Welding
- » Introduction to Robotics - Intermediate Level
- » Introduction to Robotics - Advance Level
- » Cobotics (3 Days)
- » Cobotics (5 Days)
- » Introduction to Robotics - Entry Level
- » Introduction to Robotic Operations
- » Cobotics (2 Days)
- » Cobotics, Programming and Vision Training
- » Introduction to Robotics – Intermediate
- » Off-Line Programming and Simulation Approaches for Robotic Operations
- » Cobotics Control using High Level Programming Approaches
- » Graphical Block Based Programming for Cobotics

Robotic Welding

AMC21024 | 5 Days | Classroom

Overview

The course is designed to introduce learners to robotic welding and to provide the skills to perform welding tasks with an industrial robot.

Modules

1. Safety when working with an industrial robotic
2. Basic knowledge of the structure of a robot system
3. Moving the robot manually, axes and cartesian jogging
4. Starting and executing robot programs manually and in automatic mode
5. Human-machine communication, robot states (I/O signals, timers, cyclical flags, counters)
6. Reading and interpreting robot controller messages
7. Introduction to robotic welding and overview of the applications and industries where robotic welding is used
8. Robot Control with ArcTech application software – introduce technology package needed to plan, configure and carry out welding tasks
9. Configuring welding parameters via the robot and weld source interfaces
10. Generate the program structure of a welding routine and understand robot positioning while welding – setting angle of attack and working angle
11. Execute a series of different welds – flat weld, butt weld and welding around a pipe
12. Learn about the different weave patterns that can be utilised when welding

Learning Outcomes

1. Be able to perform a variety of welding operations with a KUKA robot
2. Understand the key principles of robotic welding
3. Operate a Robotic Welding station through a HMI

Learner Profile

Learners do not need prior knowledge of robot programming however they should have basic PC literacy and significant welding experience

Certification

KUKA Certificate of Completion

Introduction to Robotics - Intermediate

AMC21025 | 3 Days | Classroom

Overview

The aim of this course is to provide the learner with the necessary knowledge of how to operate a robot cell in manner that is compliant with robot safety regulations and to perform operating tasks on the robot.

Modules

1. Safety when working with an industrial robot. Basic structures of a robot system
2. Moving a robot manually, axes and cartesian jogging
3. Starting and executing robot programs manually and in automatic mode.
4. Human-machine communication, robot states (I/O signals, timers, cyclical flags, counters). Reading and interpreting robot controller messages.
5. Using robot gripper technology packages
6. Working with existing program files to make small modifications such as adding and adjusting robot moves
7. Reading and understanding logic commands in existing programs
8. Principle of mastering and checking the mastering

Learning Outcomes

1. Ability to perform operating tasks on the robot such as moving the robot manually
2. Add and editing robot positions and restarting a robot production after a program stop
3. Understand and modify a robot control program

Learner Profile

Learners do not require any prior robotic knowledge and can come from non-technical backgrounds. Business owners, managers, employees

Certification

KUKA Certificate of Completion

Introduction to Robotics – Advanced Level

AMC21026 | 5 Days | Classroom

Overview

The aim of this course is to provide the learner with the knowledge of how to operate and program an industrial robot. Learners will perform commissioning procedures and create, modify and execute their own robot control program.

Modules

1. Structure and function of a KUKA robot system
2. Moving a robot manually, axes and cartesian jogging
3. Commissioning procedures-Robot Mastering, Tool Calibration and Base Calibration
4. Executing robot control programs
5. Working with program files - creating and modifying programmed motions
6. Using logic functions in a robot program
7. Using technology packages for gripper operation and pick place applications
8. Variables and declarations and working with simple Data types
9. Successful programming in KRL (Kuka robot language)
10. Using program execution control functions – input and output signal, local and global variables, conditional checks, loops and sub program call in KRL
11. Introduction to operating a robot in conjunction with a higher-level controller i.e. PLC

Learning Outcomes

1. Ability to operate a robot cell in a manner compliant with robot safety regulations
2. Carry out the commissioning procedures mastering, and tool/base calibration
3. Create robot programs with movements and logic functions
4. Declare and use simple variables, loops and global sub-programs in KRL

Learner Profile

Learners do not require prior robot knowledge but should be PC literate. The course is aimed at people seeking a strong grounding in the principles of robot operation and programming

Certification

KUKA Certificate of Completion

Cobotics

AMC21027 | 3 Days – Virtual Classroom (2) | Workshop (1)

Overview

This course will allow the learner to become familiarised and understand the limitations of using cobots in industrial applications.

Modules

1. Introduction
2. Basic Safety Requirements
3. Program Operation
4. Analysis
5. Types of Data
6. How to use Data in application
7. How to create Program modules
8. How to create inputs and outputs
9. How to complete a backup and restore

Learning Outcomes

1. Identify possible applications for cobots
2. Understanding the standards and restrictions for applications

Learner Profile

Trade / Diploma however a good aptitude for automation systems would be sufficient

Certification

Vendor Certificate of Completion

Cobotics

AMC21028 | 5 Days – Virtual Classroom (2) | Workshop (3)

Overview

This course allows the learner to familiarise themselves and to understand the limitations of cobots and to provide an introduction to cobot control software code and vision.

Modules

1. Introduction to cobots
2. Basic Safety Requirements
3. Program Operation
4. Analysis
5. Types of Data
6. How to use Data in application
7. How to create Program modules
8. How to create inputs and outputs
9. How to complete a backup and restore

Learning Outcomes

1. Identify possible applications for cobots
2. Understand the standards and restrictions for cobotic applications
3. Have the ability to set up some simple tasks with Yumi and TM cobots

Learner Profile

A good aptitude for automation systems would be sufficient and/or relevant technical experience

Certification

Vendor Certificate of Completion

Introduction to Robotics – Entry Level

AMC21029 | 1 Day | Classroom

Overview

This course introduces learners to robotics and their application in manufacturing.

Modules

1. What is a robot? Overview of an industrial robot and their evolution through to the present day
2. What are robots used for? Introduction to the different applications robotics are used in - how to identify new robotic applications within a manufacturing process
3. Who uses robots? Highlight the different industries using robotics.
4. Why use a robot? Illustrate the benefits of robotics and how they can help a company
5. How to calculate the Return on Investment (ROI) for a robot cell
6. Introduction to robotic cell and the supplementary equipment that accompany a robotic arm in a functioning cell
7. Starting up a robot - Introduction to a robot HMI
8. How to jog the robot - Introduce Jogging co-ordinate systems
9. Top level overview of how the robot is programmed – with some limited hands-on time with a robot

Learning Outcomes

1. Understand the function of a robot
2. Understand how robots can be applied in the manufacturing industry
3. Understand how to calculate the ROI for a robot equipment investment
4. Understand the components of a robot cell

Learner Profile

Business owners, employees in the manufacturing sector

Certification

KUKA Certificate of Completion

Introduction to Robotic Operations

AMC21031 | 2 Days | Classroom

Overview

The course provides an introduction for learners to the application and use of robotics in industrial operations.

Modules

1. Overview of an industrial robotics and their evolution through to the present day
2. What are robots used for
3. Introduction to robotic application areas
4. Examine industry sectors using robotics
5. Illustrate the benefits of robotics and how they can help a company
6. Introduction to a the robotic cell and the supplementary equipment that accompany a robotic arm in a functioning cell
7. Starting up the Robot - Introduce to robotic human machine interfaces (HMIs)
8. Introduction to the jogging co-ordinate systems
9. Calibrate Tools and Workpieces
10. Motion programming – optimising robotic motions
11. Programming a pick and place routine from start to finish

Learning Outcomes

1. Understand how to operate a robot in an industrial environment
2. Understanding how to program robotic movements
3. Understand how robots are used appropriately in an industrial environment
4. Understand the components of a functioning robot cell

Learner Profile

Business owners, employees in the manufacturing sector

Certification

KUKA Certificate of Completion

Cobotics

AMC21032 | 2 Days | Classroom

Overview

This course is designed introduce learners to cobots and their operation.

Modules

1. Introduction, course overview, housekeeping and objectives of the training - History of robotics and cobotics and examples of cobotics installations
2. Health and Safety robotics and compare with cobotics
3. Organisation needs analysis and discussion
4. Introduction of YuMi robot and basics of programming (FlexPendant)
5. Cobotics technologies capabilities and benefits for the society
6. Introduction of Techman Robots and basics of programming (Software)
7. Create a “tool” and a “wobj” (Techman)
8. Grippers and 3D printers
9. Robotics programming using grippers (ABB and Techman)

Learning Outcomes

1. Operate a cobot
2. Program a Techman and ABB cobot
3. Understand cobot selection for an organisation
4. Understand how to program a cobot using the FlexPendant environment

Learner Profile

Employees in the manufacturing sector

Certification

Vendor Certificate of Completion

Cobotics, Programming and Vision Training

AMC21033 | 5 Days | Classroom

Overview

This course is designed to introduce learners to cobots, programming environments and the use of vision systems with cobots for pick and place actions.

Modules

1. Introduction to a YUMI robot and basics of programming (FlexPendant)
2. Introduction of Techman Robots and basics of programming (Software) - Create a "tool" and a "wobj" (Techman)
3. Introduction to programming with Robotstudio (ABB simulation and programming environment)
4. Pick and place using Inputs and Outputs (YuMi ABB)
5. Programming with Techman software
6. Pick and place using Inputs and Outputs (Techman Robot)
7. Robotics programming using grippers (ABB and Techman)
8. Integrated vision in Techman Robots. Calibrating Techman vision systems for pick and place actions
9. History of robotics and cobotics and examples of cobotics installations
10. Cobotics technologies capabilities and benefits for the society
11. Health and Safety in robotic and comparison with cobotics
12. Organisation needs analysis and discussion
13. Types of Data, Inputs and Outputs
14. Introduction to vision systems 2D and 3D cameras
15. Integrated vision in ABB Robots
16. Calibration of vision systems for pick and place actions with Robotstudio
17. Pick and place using integrated vision (YuMi ABB)

Learning Outcomes

1. Understand how to operate and program a cobot
2. Know how to operate a vision system for cobots
3. Understanding robotic programming environments
4. Understand vision systems for robot cells
5. Perform pick and place operations using vision

Learner Profile

Employees in the manufacturing sector

Certification

Vendor Certificate of Completion

Introduction to Robotics – Intermediate Level

AMC21052 | 2 Days | Classroom

Overview

The course will provide the learner with the necessary knowledge required to operate a robot cell in a manner that is compliant with robotic safety regulations and to carry out operational tasks with a robot.

Modules

1. Safety when working with an industrial robot
2. Basic overview of robot system structures
3. Moving the robot manually, axes and cartesian jogging
4. Starting & executing robot programs manually and in automatic mode
5. Human-machine communication, robot states (I/O signals, timers, cyclical flags, counters). Reading and interpreting robot controller messages
6. Using robot gripper technology packages
7. Working with existing program files to make minor modifications such as adding and modifying robot moves
8. Reading and understanding logic commands in existing programs
9. Principle of mastering and checking

Learning Outcomes

1. Perform operating tasks on the robot such as moving the robot manually
2. Be capable of adding and editing robot positions
3. Understand how to restart robotic based operations after a program stop
4. Understand the modes of interaction with a robot and how to modify them

Learner Profile

A good aptitude for automation systems would be sufficient and/or relevant technical experience

Certification

KUKA Certificate of Completion

Off-Line Programming and Simulation Approaches for Robotic Operations

AMC21083 | 5 Day | Virtual Classroom

Overview

This course will provide the learner with the fundamental knowledge of how to use and apply Off-line Programming and Simulation in robotic application development.

Modules

1. Off-Line Programming and Simulation tools
2. Creating a basic robotic cell
3. Using a graphical programming tools for rapid application development
4. Modelling robotic operations and states
5. Configuring a robotic system and mechanism for conveyor tracking
6. Generate paths for coordinating motion between robots
7. Monitoring a robot's performance and associated signals
8. Understand how to simulating operational events

Learning Outcomes

1. Understand how to generate and test a basic off-line program
2. Be able to create a robotic operations simulation including use of a physics engine
3. Be able to create a basic robot model
4. Understand how to transfer application code to a robot controller
5. Know how to monitor robot operational performance using telemetry
6. Comprehend how to implement and test a simulated event
7. Application of track motion programming and use of an external axis positioner
8. Understand how to program a multi-move simulation
9. Setup and program with conveyor tracking

Learner Profile

Programmers / integrators who require the fundamental knowledge of working with a high-level programming environment such as RobotStudio or equivalent

Certification

ABB Certificate of Completion

Cobotics Control using High Level Programming Approaches

AMC21084 | 4.5 Days | Virtual Classroom

Overview

This course will provide the learner with an understanding of how to use a high-level Integrated Development Environment (IDE) for developing cobotic control applications.

Modules

1. Design and develop applications for safe robotic control and operations
2. Generating collaborative robotics
3. Understanding cobotic system operations
4. Manual manipulation of positions using peripherals
5. Introduction and use of IDE and Toolchain for robotic application development
6. Coding and processing for work objectives
7. Logical instructions
8. Understanding Decision Making in Cobotic control

Learning Outcomes

1. Understand safe program operations
2. Understand how to program a Human Machine Interface (HMI) for management and control of cobotic operations
3. Understand standard system operations e.g., start up, shut down and error state recovery
4. Understand how to use an IDE / SDK environment for program code development, editing and testing
5. Understand basic program structures and flows
6. Cobotic cell failure recovery procedures including system backup and restore processes

Learner Profile

Programmers, operators, and maintenance staff

Certification

ABB Certificate of Completion

Graphical Block Based Programming for Cobotics

AMC21085 | 4.5 Days | Virtual Classroom

Overview

This course will provide the learner with an understanding of graphical Block Based Programming and how to apply it to the design of cobot action sequences.

Modules

1. How to program cobots for safe operations
2. Generating system descriptions
3. Understanding cobotic system operations
4. Manual manipulation of positions using peripherals
5. Programming tools and processes
6. Defining and executing work objectives
7. Logical instructions
8. Decision making in cobotic controls

Learning Outcomes

1. Safe operation of equipment
2. Calibrate arms and Grippers
3. Manipulate using the peripherals
4. Understand how to operate cobotics
5. Program multi-move instructions and data
6. How to use integrated visionary tools
7. Understand how to program cobotic manipulation actions
8. Understand how to back up cobotic controller software

Learner Profile

Integrators and Programmers

Certification

ABB Certificate of Completion



Industrial Systems and Control

- » Programmable Logic Controllers
- » Introduction to PLCs
- » Industrial Electrical Systems
- » Electrical Principles
- » Digital Sensors
- » Electrical Systems Troubleshooting
- » Electronics
- » Systematic Troubleshooting
- » Industry 4.0 Automation Pyramid Technologies

Classroom, Blended learning, and Instructor lead online courses will be scheduled throughout the year. For details on course schedules and dates please go to amtce.ie/courses

Programmable Logic Controllers

AMC21009 | 4 Days | Classroom

Overview

This course will enable a learner to interrogate a PLC system to determine the cause of equipment faults.

Modules

1. PLC Architectures, I/O devices, Scan Cycle, Troubleshooting with a PLC, Ladder Logic
2. Learn how to write short programs to control pneumatic actuators and value circuits
3. Troubleshoot a pre-wired and programmed automation sequence by navigating and monitoring PLC code
4. Skills Assessment

Learning Outcomes

1. Understand how a PLC controls automated equipment
2. Have the ability to wire field devices to a PLC
3. Appreciate how fault messages are generated.
4. Have the ability to use a PLC I/O interface to narrow a fault down to a specific control loop
5. Be capable of backing up programs
6. Know how to replace backup batteries
7. Navigate an I/O list to find related control loops

Learner Profile

Employed Maintenance Personnel

Certification

Vendor Certificate of Completion

Introduction to PLC's

AMC21010 | 5 Days | Classroom

Overview

The aim of this course is to give engineers and technicians an introduction to Programmable Logic Controllers (PLC's).

Modules

1. What is a PLC?
2. The function of a PLC in an automated system
3. PLC Inputs and Input wiring
4. PLC Outputs and Output wiring
5. Sensor types
6. Basic PLC Programming
7. Automation System troubleshooting using PLC software

Learning Outcomes

1. Understand the architecture of a PLC
2. Understand PLC wiring
3. Understand PLC Data types
4. Ability to create short PLC Programs
5. Troubleshoot PLC systems using software

Learner Profile

Engineers and Technicians new to PLC's. Learner should have some knowledge of electrical circuits

Certification

Vendor Certificate of Completion

Industrial Electrical Systems

AMC21011 | 5 Days | Classroom (4) + Virtual Classroom (1)

Overview

This training course develops the skills required by industrial maintenance technicians to safely diagnose and repair faults in electrically controlled equipment.

Modules

1. Electrical Safety Awareness
2. Electrical Concepts
3. Electrical Protection
4. 3-Phase and Motor Control circuits
5. AC systems
6. 3-Phase and Motor Control circuits
7. Reading Electrical Schematics

Learning Outcomes

1. Understand how to test electrical systems to narrow down a problem area
2. Be capable of listing electrical hazards when testing live systems and identifying ways to minimise hazards
3. Appreciate how to use electrical schematics to navigate a system effectively
4. Set-up and troubleshoot a range of sensors used in automation systems
5. Be capable of carrying out LOTO procedures correctly
6. Understand the operating principles of fuses, MCBs and RCDs
7. Be capable of using multi-meters and grip-ons to test systems in a competent manner

Learner Profile

Individuals who want to upskill and develop electrical knowledge in order to pursue a career in a production environment or industrial maintenance

Certification

QQI Level 6 Minor Award in Industrial Electrical Systems

Electrical Principles

AMC21012 | 5 Days | Classroom (4) + Virtual Classroom (1)

Overview

The purpose of this course is to equip the learner with the knowledge, skills and competencies in the principles underpinning the functioning of electrical circuits and to provide the learner with an understanding of how to work safely with electrical circuits.

Modules

1. Theory of Electricity
2. Resistor Circuits
3. DC Circuits
4. DC Power
5. AC Circuits
6. AC Power
7. Electrical Drawings

Learning Outcomes

1. Understand how to describe the characteristics of conductors and insulators and the underlying atomic structure that govern these characteristics
2. Understand the units and characteristics of electrical circuits and the laws that govern their relationship to each other
3. Understand the behaviour of various electrical components including capacitor, inductors, transformers, and the laws that govern their behaviour
4. Outline the functioning of electrical circuits under direct current and alternating current conditions
5. Understand the consumption of power in electrical circuits, and the factors that affect it

Learner Profile

Level 4, Leaving Certificate or equivalent qualifications and/ or relevant industrial experience

Certification

Vendor Certificate of Completion

Digital Sensors

AMC21017 | 1 Day | Classroom

Overview

This course enables learners to install, set up and fault find a comprehensive range of digital sensors wired to PLC input cards.

Modules

1. Operating principles of sensors
2. Wire, setup, adjust sensitively and fault find with all listed sensors
3. Survey application
4. Smart Devices
5. Identification Systems
6. Augmented Reality

Learning Outcomes

1. Be capable of wiring NPN, PNP and 2 wire-sensors to PLC input cards
2. Understand sensing principles including : inductive, capacitive, thru beam, fibre optic, diffuse, retro reflective sensors
3. Follow a logical procedure for adjusting the sensitively for robust stable sensing for the listed sensors
4. Be capable of interpreting the meaning of the two indicating LED's when fault finding
5. Understand how to setup optical sensors for LO or DO operation
6. Appreciate the setup required for digital pressure/vacuum switches for window and switching

Learner Profile

Employed Maintenance and Process Technicians

Certification

Vendor Certificate of Completion

Electrical Systems Troubleshooting

AMC21018 | 1 Day | Classroom

Overview

This course enables learners to apply troubleshooting and problem solving skills while in a maintenance environment.

Modules

1. Troubleshooting method, logical thinking and testing skills
2. Practice Troubleshooting method on panels
3. Practice Troubleshooting with simulations

Learning Outcomes

1. Be capable of utilising a logical fault-finding approach to narrow down a problem area to a specific circuit
2. Appreciate how to appropriately read and navigate electrical schematics to enable fault finding
3. Visually know what to look for to verify equipment functionality
4. Know how to select the best testing methods to narrow to the fault area
5. Understand how to find the causes of faults from open circuits, faulty components, short circuits (AC and DC), earth faults

Learner Profile

Employed Maintenance and Process Technicians

Certification

Vendor Certificate of Completion

Electronics

AMC21019 | 5 Days | Classroom

Overview

The aim of this course is to provide the learner with an understanding of semiconductor components, amplifiers and power supplies used in electronics. The learner will also gain knowledge in the use of equipment such as digital multi-meters, function generators and oscilloscopes.

Modules

1. Semi-conductor materials
2. Diodes
3. Bi-polar Junction and Field Effect Transistors (FETs)
4. Operational Amplifiers
5. Power supplies
6. Use of test and measure equipment

Learning Outcomes

1. Be capable of building electronic circuits
2. Appreciate the functional behaviour electronic components
3. Know how to perform a variety of calculations for circuits and components
4. Be capable of utilising a wide range of test equipment
5. Be capable of designing and building complex circuits
6. Understand how to develop and evolve safe working practices

Learner Profile

Level 5 Certificate in Electronics, Leaving Certificate or equivalent qualifications and/or relevant life and work experiences

Certification

QQI Level 6 Minor Award 6N5374 in Electronics

Systematic Troubleshooting

AMC21020 | 2 Days | Classroom

Overview

This course provides the learner with a robust set of strategies for effective troubleshooting.

Modules

1. Troubleshooting skills and tools, with engaging exercises to re-enforce the benefits of learners
2. Practicing the process from start to finish
3. Learning how to work in teams on problems and communicate handovers effectively to an in-coming shift

Learning Outcomes

1. Acquire the skills to fully describe and explain problems
2. Understand how to gather all the required evidence for troubleshooting activities
3. Know how to refine a problem statement
4. Appreciate the challenges of technical communications
5. Be capable of solving and documenting problems

Learner Profile

Employed Maintenance and Process Technicians

Certification

Vendor Certificate of Completion

Industry 4.0 Automation Pyramid Technologies

AMC21082 | 30+ Hours | Online - Self Directed

Overview

This course will provide the learner with an understanding of the technologies and systems that form the industrial automation pyramid.

Modules

1. Introduction to industrial automation
2. Principles of pneumatics
3. Introduction to electricity
4. DC electricity
5. AC electricity
6. Solid state
7. Introduction to wiring
8. Introduction to electric motors
9. Sensor technology
10. Programmable controllers
11. Process controls
12. Hydraulics / electrohydraulics
13. Robotics

Learning Outcomes

1. Understand the relationship between the components in an industrial automation pyramid
2. Understand the system principles and functions in an industrial automation system
3. Understand the physical principles and properties of component technologies such as actuation and sensing in industrial automation systems

Learner Profile

Individuals in a technical role looking to develop themselves into different areas of engineering

Certification

SMC Certificate of Completion

A woman and a man are leaning over a table in a laboratory or industrial setting. They are looking at a robotic arm that is positioned over a workpiece. The woman is on the left, and the man is on the right, wearing safety glasses and a lanyard. The background shows other industrial equipment and a clean, professional environment.

Advanced Metrology and Systems

» Geometric Dimensioning and Tolerance

Classroom, Blended learning, and Instructor lead online courses will be scheduled throughout the year. For details on course schedules and dates please go to amtce.ie/courses

Geometric Dimensions and Tolerance (GD&T)

AMC21036 | 4 Days | Virtual Classroom

Overview

This course aims to provide a comprehensive introduction into the application, interpretation and understanding of Geometric Dimension and Tolerance. The course covers the symbols, concepts, and basic use of these techniques for dimensioning and tolerance as applied in standard industry practice.

Modules

1. Standards in Context
2. What is GD&T
3. Datums and Datum Systems
4. Six Degrees of Freedom
5. Feature Control Frames
6. Basic Dimensions
7. Tolerance Characteristics
8. Inner and Outer Boundaries
9. Applying Tolerances

Learning Outcomes

1. Be capable of reading and understanding basic GD&T symbols on a drawing
2. Understand the basic concepts of GD&T and its application in engineering
3. Identify minimum and maximum tolerances
4. Understand the key GD&T standards

Learner Profile

Managers, Project Leaders, Automation Engineers

Certification

National Physical Laboratory Certification



Techniques, Operations and Processes (Pharma/Food)

- » Introduction to Bioprocessing
- » Introduction to Cleanroom Operations
- » Introduction to Technical Writing for the Manufacturing Sector
- » Introduction to cGMP for the (Bio)Pharmaceutical Industry
- » Medical Devices
- » Process Analytical Technology
- » Pharma Utilities, Facilities, HVAC and Cleanroom
- » Bioprocessing
- » Tablet and Capsule Manufacturing and Packing Processing
- » Module Validation
- » Quality Assurance and GMP

Introduction to Bioprocessing

AMC21096 | 1 Day | Virtual Classroom

Overview

The aim of this course is to provide learners with key insights into biotechnology and its application within a bioprocessing manufacturing environment. Learners will develop core knowledge of how biotechnology and bioprocessing are utilised in the manufacture of pharmaceutical products.

Modules

1. Biopharmaceuticals Overview
2. Bioreactors
3. Fundamentals of Upstream / Downstream Cleanrooms / Contamination Control and Gowning
4. Aseptic Processing Overview

Learning Outcomes

On completion of this course the learner should be able to demonstrate:

1. A solid understanding of how biotechnology has evolved and its applications within a bioprocessing manufacturing environment
2. An understanding of the general principles of how microorganisms can be utilised within a (bio) pharmaceutical context
3. How to identify the key steps within upstream and downstream manufacturing, from cell cultures, batch feed, scale up, separation, purifying and filling finish

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Introduction to Cleanroom Operations

AMC21097 | 1 Day | Virtual Classroom

Overview

The aim of this course is to provide learners with key knowledge required to work within regulated cleanroom environments. The course is tailored to suit the training needs of employees within the medical technology, pharmaceutical and biopharmaceutical sectors and is also suitable for individuals who wish to upskill in order to work in a compliant manner within these manufacturing areas.

Modules

1. Cleanroom technology and its use in contamination control
2. Identifying the requirement for cleanrooms within a manufacturing environment and the sources of contamination
3. Cleanroom design, classification, configuration, regulations
4. Cleanroom gowning, protocol, and etiquette
5. Air supply, room pressurisation, HEPA, room temperature and humidity, surface finish, room shape, personnel, access, colour coded layout, air filtration

Learning Outcomes

On completion of this course the learner should be able to:

1. Describe the fundamental aspects of cleanroom design and operations.
2. Demonstrate knowledge of cleanroom classification, configuration, and the key features of cleanrooms
3. Demonstrate correct gowning practices for operating in a cleanroom environment

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Introduction to Technical Writing for the Manufacturing Sector

AMC21098 | 1 Day | Virtual Classroom

Overview

The aim of this course is to provide learners with the tools to write better technical documents, focusing on the skills required to produce accurate, precise, succinct documentation within a manufacturing setting.

Modules

1. Principles and techniques for technical writing
2. Identify regulatory expectation for technical writing
3. Document design techniques / templates
4. Writing methods, writing with focus, presenting information concisely

Learning Outcomes

On completion of this course the learner should be able to:

1. Demonstrate the required skills to ensure documents are structured, compliant, and presented in a consistent manner
2. Recognise and apply the common features of all standard report structures
3. Demonstrate the ability to communicate complex and technical information in a succinct, effective, and professional manner

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Introduction to cGMP for the (Bio) Pharmaceutical Industry

AMC21099 | 1 Day | Virtual Classroom

Overview

The aim of this course is to provide learners with fundamental knowledge related to the requirements of working in a cGMP (Good Manufacturing Practice), regulated (bio) pharmaceutical manufacturing environment. On completion of the course learners will be able to demonstrate core knowledge of quality systems, industry regulatory requirements, validation, documentation, and manufacturing technologies.

Modules

1. cGMP regulatory requirements
2. The fundamentals of validation in a cGMP environment
3. Quality Systems Management
4. Organisation and Personnel Equipment
5. Control of Materials
6. Production Controls
7. Packaging and Labelling
8. Laboratory Controls
9. Documentation

Learning Outcomes

On completion of this course the learner is expected to have a good level of knowledge of:

1. The terminology associated with cGMP and the regulatory requirements of working in this environment
2. The essential facts related to relevant legal, quality, and regulatory frameworks governing the manufacture of (bio)pharmaceutical products
3. The basic principles associated with validation within a (bio)pharmaceutical context
4. The technologies associated with the production of (bio) pharmaceutical and chemical synthesis product

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Medical Devices

AMC21100 | 3 Hours | Online - Self Directed

Overview

The aim of this course is to provide learners a comprehensive overview of the manufacture of medical devices, focussing on manufacturing processes, cGMP, and the regulatory landscape of medical device manufacture. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. Medical Device Classes
2. Cell Manufacturing Processes
3. Medical Device Regulations
4. Sterilisation and Packaging

Learning Outcomes

On completion of this course the learner should possess a good level of knowledge of:

1. The various types of medical devices, the classes and application
2. The regulatory landscape of medical device
3. The manufacturing processes, packaging and sterilisation

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Process Analytical Technology

AMC21101 | 3 Hours | Online – Self Directed

Overview

This course will provide learners with an understanding of Process Analytical Technologies (PAT) and its application in the pharmaceutical industry. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. PAT Regulations
2. PAT Technologies and Applications
3. Quality by Design concepts
4. Release criteria and PAT

Learning Outcomes

On completion of this course the learner is expected to have a good level of knowledge of:

1. Quality by Design within the pharmaceutical industry
2. Process Analytical Technology
3. PAT Regulations
4. Rational, implementation and benefits of PAT
5. PAT Technologies
6. Real-Time release and Impact to Quality Systems

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Pharma Utilities, Facilities, HVAC and Cleanroom AMC21102 | 3 Hours | Online - Self Directed

Overview

The aim of this course is to provide learners with an understanding of the importance of maintaining a safe and fully operational environment within manufacturing areas: Pharma Utilities, Facilities, HVACs and Cleanrooms. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. HVAC Systems
2. Cleanrooms
3. HEPA Filtration
4. Facilities Management

Learning Outcomes

On completion of this course the learner is expected to have a good level of knowledge of:

1. The factors that affect facilities management, equipment and processes as applied in the pharmaceutical industry
2. Understand the layout of a typical pharmaceutical site
3. Roles and disciplines within facilities management
4. HVAC systems and standards
5. Design and functionality of Cleanrooms

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification Innopharma Education Certificate of Completion

Bioprocessing

AMC21103 | 3 Hours | Online – Self Directed

Overview

The aim of this course will provide learners with the core knowledge related to bioprocessing processes for the production of pharmaceutical products. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. Bioprocessing in the pharmaceutical industry
2. Bioprocessing environment and technology
3. Cleanrooms
4. Overview of the production of antibiotics, insulin and recombinant proteins)

Learning Outcomes

On completion of this course the learner is expected to have a good level of knowledge of:

1. How bioprocessing is applied in the pharmaceutical industry
2. An overview of a typical bioprocessing environment
3. How to work effectively in a cleanroom without causing a risk to the product
4. Understanding the technologies in the biopharmaceutical industry, including the creation and manufacture of products that help in the diagnosis and treatment of disease (e.g., the production of antibiotics, insulin, and recombinant proteins)

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Tablet and Capsule Manufacturing and Packing Processing

AMC21104 | 3 Hours | Online - Self Directed

Overview

The aim of this course is to provide learners with the fundamental knowledge related to Tablet and Capsule manufacturing and packaging processes. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. Drug Discovery
2. Pharmaceutical Dosage Forms
3. Pharmaceutical Manufacturing processes (Solid Dose)
4. Process Mapping

Learning Outcomes

On completion of this course the learner should be able to demonstrate a good level of knowledge of:

1. The basic steps and activities in drug discovery, development, and clinical trials
2. The different pharmaceutical dosage forms
3. The different manufacturing processes for solid dose drug manufacturing
4. Process Mapping and identifying the inputs, outputs and measures used to control drug quality

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Module Validation

AMC21105 | 3 Hours | Online – Self Directed

Overview

The aim of this course is to provide learners with the fundamental knowledge related to validation within a regulated (bio)pharmaceutical manufacturing environment, focussing on Validation Master Planning and the Validation of systems and processes. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. Validation master planning and documentation
2. GMP facility, equipment, and utility qualification
3. Validation design, verification, and qualification
4. Process validation
5. Cleaning Validation
6. Pharma GMPs for the 21st century
7. Post validation activities and maintaining the validation status

Learning Outcomes

On completion of this course the learner is expected to have a good level of knowledge of:

1. Validation master planning and documentation
2. GMP facility, equipment, and utility qualification
3. Validation design, verification, and qualification
4. Process validation
5. Cleaning Validation
6. Pharma GMPs for the 21st century
7. Post validation activities and maintaining the validation status

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Quality Assurance and GMP

AMC21106 | 3 Hours | Online - Self Directed

Overview

The aim of this course is to provide learners with the fundamental knowledge related to the requirements of working in a cGMP (Good Manufacturing Practice), regulated (bio)pharmaceutical manufacturing environment. Learners will develop a solid understanding of cGMP and quality regulations. The course consists of approximately 2 to 3 hours of learning time with in-built assessments.

Modules

1. cGMP regulatory requirements
2. The fundamentals of validation in a cGMP environment
3. Quality Systems Management Organisation and Personnel Equipment
4. Control of Materials
5. Production Controls
6. Packaging and Labelling
7. Laboratory Controls
8. Documentation

Learning Outcomes

On completion of this course the learner should be able to demonstrate knowledge of:

1. The terminology associated with cGMP and the regulatory requirements of working in this environment.
2. The essential facts related to relevant legal, quality, and regulatory frameworks governing the manufacture of (bio)pharmaceutical products.
3. The elements of a quality management system in a cGMP environment

Learner Profile

Candidates should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).

Certification

Innopharma Education Certificate of Completion

Industrial 3D Printing and Additive Manufacturing

- » 3D Certified User Training
- » 3D Application Training
- » 3D Advanced Material Training
- » Reverse Engineering Scan to Print
- » Introduction to 3D Printing
- » 3D Printing in Industry
- » SolidWorks Essentials – Entry Level
- » Design for Additive Manufacturing / 3D Printing
- » Advanced Introduction to Additive Manufacturing
- » A Guide to Additive Manufacturing for Engineers – Part 1
- » A Guide to Additive Manufacturing for Engineers – Part 2
- » Best Practice in Process Selection – Intermediate Level
- » Essential Requirements Capture for Additive Manufacturing
- » Essential Requirements Capture for Additive Manufacturing
- » Technical Insight into Design for Additive Manufacturing
- » Additive Manufacturing Health & Safety, Risks and Mitigation
- » Implementing Powder Management - Introduction
- » Design for Metal Powder Bed Fusion (1 Day)
- » Design for Metal Powder Bed Fusion (2 Day)
- » Design for Metal Powder Bed Fusion – 3 Hours
- » Design Rules for Electron Beam Powder Bed Fusion
- » Technical Insight into Additive Manufacturing
- » Developing the Business Case for Additive Manufacturing Adoption
- » Design Rules for Laser Powder Bed Fusion

3D Certified User Training

AMC21021 | 2 Days | Classroom

Overview

This course takes individuals from beginner level knowledge through to being competent users of an Ultimaker 3D printer. The course provides the learner with a strong grounding in how to configurate and operate a printer on a day-to-day basis.

Modules

1. Installation
2. Hardware Overview
3. Software and Machine Operation
4. Ultimaker Essentials Overview
5. Sample Part Printed Project
6. Review of Part Printed Project
7. Optimisation of parts for 3D printing
8. Materials for 3D printing
9. Troubleshooting

Learning Outcomes

1. Understand the process from taking a design through slicing, setting the slicing parameters and set up a print
2. Know how to use the Ultimaker material selector for selecting appropriate materials for their print
3. Understand how different materials need different slicing settings and processing parameters, and the different types of supports required when slicing a model
4. Understand the FDM process and how the Ultimaker has enhanced features to aid successful printing
5. Orientate a model in the slicing software for printing and set up the slicing parameters and advanced slicing settings
6. Be able to conduct basic troubleshooting on the printer and with unsuccessful prints
7. Be capable of identifying the different parts if a 3D printer
8. Be able to set up the printer for different materials
9. Be able to perform the monthly, 3 monthly and yearly maintenance tasks on the 3D printer

Learner Profile

New user / Inexperienced user/ someone wanting to further their knowledge of 3D printing (Not an advanced user course)

Certification

Ultimaker training accredited by 3DGBIRE in partnership with Inspire 3D

3D Application Training

AMC21022 | 1 Day | Classroom | Virtual Classroom

Overview

This course provides the learner with the practical knowledge which allows them to identify applications that are suitable and provide cost savings with Additive Manufacturing, and to provide the ability to reverse engineer parts for Additive Manufacturing.

Modules

1. Assess the value of an Additively manufactured part
2. Design Parts for AM by applications requirements
3. Learn how to select a material for a specific application
4. Identify how, when and where AM can create value across the entire product life cycle

Learning Outcomes

1. Understand the applications identification and testing process
2. Understand the stages of identification and reverse engineering, and the different types of reverse engineering
3. Understand how 3D printing provides an opportunity to Reproduce, Recreate, Redesign and Rethink an application and what is involved in each of these stages
4. Be capable of identifying application opportunities, identify which of the 4R's are applicable for the application and select potential materials for testing

Learner Profile

Possess a good understanding of FDM 3D printing with a desire to enhance your knowledge to the next level (3+ months experience) of operational and technical understanding. A working knowledge of CAD is desirable

Certification

Autodesk Certification

3D Advanced Materials Training

AMC21023 | 1 Day | Classroom | Virtual Classroom

Overview

This course is designed to provide learners with the skills and knowledge to select and work confidently with a wide range of advanced FDM materials.

Modules

1. Introduction to metal and composite materials
2. Optimising the printing method for specific materials
3. Material application
4. Key considerations for material selection
5. Optimising the printing process for different materials
6. Part post processing and finishing

Learning Outcomes

1. Understand the different types of advanced materials available for FDM printing, including GF, CF and 316L
2. Understand the advantages and considerations that need to be taken when designing and setting up a print for the various types of materials and why
3. Understand the debinding and sintering process associated with 316L
4. Set up a printer for advanced materials and have the ability to recognise the advantages and disadvantages of materials

Learner Profile

Individuals should possess a good understanding of FDM 3D printing and want to take their knowledge to the next level (3+ months experience) of technical and operational knowledge. Be an active user of 3D printing

Certification

Autodesk Certification

Reverse Engineering – Scan to Print

AMC21035 | 2 Days | Classroom

Overview

The course is designed to enable learners to 3D scan parts into a virtual environment and to manipulate the virtual parts for 3D printing compatibility.

Modules

1. Overview of fused filament fabrication (FDM) 3D printing in Industry with case study examples
2. Overview of Metal 3D Printing in Industry with case study examples
3. Overview of Composite 3D Printing in Industry with case study examples
4. Overview of Selective Laser Sintering in Industry with case study examples
5. Overview of Color 3D Printing in Industry with case study examples
6. Overview of Resin 3D Printing in Industry with case study examples
7. Overview of Stereolithography 3D Printing in Industry with case study examples

Learning Outcomes

1. Understand the 3D printing process
2. Be capable of critiquing the need and opportunities for designing with this technology
3. Understand how to develop a graphical representation of a 3D object using design software
4. Be capable of safely printing an object using a 3D printer

Learner Profile

Engineers and Engineering Managers

Certification

Certified by Solidworks

Introduction to 3D Printing

AMC21055 | 4 Days | Classroom

Overview

This course is designed to give learners an in-depth view of how 3D printing is currently applied in Industry.

Modules

1. Overview of Fused filament fabrication (FDM) 3D printing in Industry
2. Overview of Metal 3D Printing in Industry
3. Overview of Composite 3D Printing in Industry
4. Overview of Selective Laser Sintering in Industry
5. Overview of Colour 3D Printing in Industry
6. Overview of Resin 3D Printing in Industry
7. Overview of Stereolithography 3D Printing in Industry

Learning Outcomes

1. Understand the process of 3D printing
2. Be capable of critiquing the need and opportunities for designing with this technology
3. Know how to develop a graphical representation of a 3D object using design software
4. Be capable of safely printing an object using a 3D printer

Learner Profile

Engineers and Engineering Managers interested in industrial 3D printing

Certification

Certified by Solidworks

3D Printing in Industry (Case Studies)

AMC21056 | 4 Days | Classroom

Overview

This course is designed to provide learners with an in-depth overview of how 3D printing is currently applied in industry through case studies.

Modules

1. Overview of Fused filament fabrication (FDM) 3D printing in Industry with case study examples
2. Overview of Metal 3D Printing in Industry with case study examples
3. Overview of Composite 3D Printing in Industry with case study examples
4. Overview of Selective Laser Sintering in Industry with case study examples
5. Overview of Color 3D Printing in Industry with case study examples
6. Overview of Resin 3D Printing in Industry with case study examples
7. Overview of Stereolithography 3D Printing in Industry with case study examples

Learning Outcomes

1. Understand the process of 3D printing through representative case studies
2. Understand through industry use cases the need and opportunities for designing with this technology
3. Know how to develop a graphical representation of a 3D object using design software based on a case study
4. Understand safe printing of objects using a 3D printer through case study examples

Learner Profile

Engineers and Engineering Managers interested in industrial 3D printing

Certification

Certified by Solidworks

SolidWorks Essentials – Entry Level

AMC21030 | 4 Days | Classroom

Overview

This course teaches the learner how to use SolidWorks mechanical design automation software to build parametric models of parts and associated drawings.

Modules

1. Introduction
2. SolidWorks Basics and the User Interface
3. Introduction to Sketching
4. Basis Part Parametric Modelling
5. Symmetry and Draft
6. Patterning
7. Revolved Features
8. Shelling and Ribs
9. Editing: Repairs
10. Editing Design Changes
11. Configuration
12. Using Drawings
13. Global Variables and Equations
14. Bottom-Up Assembly Modelling
15. Using Assemblies

Learning Outcomes

1. Demonstrate competency with multiple drawing and modification commands in SolidWorks
2. Have the ability to create three-dimensional solid models
3. Be capable of creating three-dimensional assemblies incorporating multiple solid models
4. Understand how to apply industry standards in the preparation of technical mechanical drawings
5. Know how to create simulations of the assemblies incorporating multiple solid models

Learner Profile

Learners do not require prior knowledge, but should be PC literate. The course is aimed at people seeking a strong grounding in the principles of SolidWorks

Certification

Certified by Solidworks

Design for Additive Manufacturing / 3D Printing

AMC21034 | 3 Days | Classroom

Overview

This course is designed to enable learners to change how they approach designing parts in order to make them suitable for additive manufacturing.

Modules

1. Drivers – Learn how to identify parts that can benefit from AM. Understand the various value drivers of your AM projects. Illustrate these lessons with industry case studies
2. Technology overview framework – understand available AM technologies and materials. Recognise the strengths and challenges of each technology. Discover suitable application fields for prototyping and certified manufacturing
3. Overcoming limitations with smart design – Review real cases where design freedom was used to overcome limitations. Understand new design possibilities with AM, such as integrated functionality and lattice structures
4. Technology-specific lessons: FDM, MJP – Discover how to design for these technologies. Compare course lessons to industry case studies. Learn about technology limitations. Receive design guidelines on how to overcome limitations and maximise freedom of design

Learning Outcomes

1. Learn to develop, implement, and optimise designs to make the most from your investment
2. Understand the range of DfAM guidelines and provide guidance for your next AM project
3. Understand the strengths and challenges of each AM technology
4. Understand the common causes of build failure and how you can navigate your design through this potentially complex landscape
5. Identify the challenges involved in deploying an IIoT project

Learner Profile

CAD Designers

Certification

Vendor Certificate of Completion

Advanced Introduction to Additive Manufacturing

AMC21041 | 1 Day | Virtual Classroom

Overview

This course enables the learner to engage in expert discussions regarding the associated processes, software/hardware and materials for Additive Manufacturing.

Modules

1. An outline of the principles of Additive Manufacturing (AM)
2. Compare the entire range of AM processes and their characteristics
3. Recognise the various approaches to design for AM, including design for performance and manufacture
4. Identify relevant post-processing and inspection techniques
5. Compare the relevant materials and material properties used in AM

Learning Outcomes

1. Know how to make appropriate choices in a set of given scenarios
2. Understand the principle of AM
3. Be capable of correctly identifying when, and if, AM processes should be used
4. Understand how to identify the appropriate material for a given product

Learner Profile

Business leaders, decision makers and anyone interested in discussing AM with experts

Certification

Vendor Certificate of Completion

A Guide to Additive Manufacturing for Engineers – Part 1

AMC21042 | 0.5 Hours | Online - Self Directed

Overview

The course informs the learner how to quantify and value the growth of the Additive Manufacturing (AM) industry.

Modules

1. Explain the difference in the AM process when compared to subtractive
2. Accurately identify the benefits and limitation of AM
3. Explain the factors which determine when AM is a suitable method for manufacturing

Learning Outcomes

1. Know how to explain the difference in the AM process when compared to subtractive
2. Be capable of accurately identify the benefits and limitation of AM
3. Understand the factors which determine when AM is a suitable method for manufacture

Learner Profile

Business leaders, decision makers and anyone with an interest in learning more about AM

Certification

Vendor Certificate of Completion

A Guide to Additive Manufacturing (AM) for Engineers – Part 2

AMC21043 | 2 Hours | Online - Self Directed

Overview

This course provides the learner with the skills to explain the material, post-processing, and inspection requirements for AM.

Modules

1. Vat photopolymerisation
2. Material extrusion
3. Material jetting
4. Binder jetting
5. Powder bed fusion
6. Direct energy deposition
7. Sheet lamination

Learning Outcomes

1. Understand the Vat photopolymerisation process
2. Understand the Material extrusion process
3. Know how Material jetting is used in AM
4. Be familiar with Binder jetting
5. How Powder bed fusion is used in industry AM
6. Comprehend the direct energy deposition
7. Understand the sheet lamination process in AM

Learner Profile

Business leaders, decision makers and anyone with an interest in learning more about AM

Certification

Vendor Certificate of Completion

Best Practice in Process Selection – Intermediate Level

AMC21044 | 1 Hour | Online

Overview

The aim of this course is to teach learners the most appropriate technology for their business's requirements.

Modules

1. Compare the 7 ASTM defined processes in Additive Manufacturing
2. ASTM standardisation
3. How to select the most appropriate technology for a given requirements capture
4. Two-stage process selection tool to narrow down the available processes on a total of 18 criteria
5. Methodology for the selection of the most appropriate machine in a given technology

Learning Outcomes

1. Define the ASTM standardisation of the 7 processes in order to categorise the technologies.
2. Identify the methodology used to categorise the processes
3. Compare the 7 processes on their technology, applications and output
4. Examine the four-stage method of selecting the most suitable process for a particular requirement
5. Compare the 7 processes through a primary and secondary down selection process
6. Apply the process selection method to case studies using primary and secondary down selection outcomes

Learner Profile

Engineers and Decision Makers

Certification

Vendor Certificate of Completion

Essential Requirements Capture for Additive Manufacturing (AM)

AMC21045 | 0.5 Hours | Online - Self Directed

Overview

This course will provide the learner with an understanding of the process to ensure complete capture of the requirements for a particular AM part or assembly.

Modules

1. Why have a specific AM requirement capture in the AM design and build process?
2. The impact of effective requirements capture in the AM design and build process
3. Tools and documents to support AM-specific requirements capture, including case examples

Learning Outcomes

1. Recognise the purpose and benefit of capturing a complete set of AM requirements in a single step
2. Be able to identify AM-specific factors and questions that should be established during requirements capture process for a given application
3. Understand how to amend an existing process and documentation to include the relevant requirements for AM

Learner Profile

Design Engineer, Application Engineer

Certification

Vendor Certificate of Completion

Technical Insight into Design for Additive Manufacturing (AM)

AMC21046 | 1.5 Hours | Virtual Classroom

Overview

This course will allow the learner to appreciate and contextualise the unique design opportunities provided by Industrial 3D printing.

Modules

1. Understand the suitability of AM and reasons for its industrial use
2. Be able to recognise various design strategies for DfAM
3. Be capable of comparing design rules for different processes
4. Discuss issues pertaining to Design for Manufacturing (DfM), Design for Post Processing (DPP) and Design for Inspection (DfI)

Learning Outcomes

1. Discuss AM suitability and reasons for its use
2. Recognise various design strategies for DfAM
3. Compare design rules for different processes
4. Discuss issues pertaining to Design for Manufacturing (DfM), Design for Post Processing (DPP) and Design for Inspection (DfI)

Learner Profile

Design Engineers

Certification

Vendor Certificate of Completion

Additive Manufacturing (AM) Health & Safety Risks and Mitigation

AMC21047 | 1.5 Hours | Online - Self Directed

Overview

This course provides the learner with the necessary skills and knowledge to apply Health & Safety (H&S) best practice guidelines to AM equipment, material and post processing.

Modules

1. Explain the H&S best practice guidelines in AM from initial receipt through to final usage, recycling, and disposal
2. Review the consequences of unsafe practice
3. Explain the associated risks of AM and what prevention methods can be used to mitigate unsafe practices
4. Identify the PPE guidelines for each powder related task
5. Identify what to do in the event of an accident

Learning Outcomes

1. Understand how to apply best practice safety guidelines to AM equipment, materials and post processing
2. Know how to react to AM specific safety related situations with the appropriate response
3. Understand what equipment is required to operate AM safely

Learner Profile

Workshop users, Technicians and Material Technicians

Certification

Vendor Certificate of Completion

Implementing Powder Management - Introduction

AMC21048 | 1 Day | Virtual Classroom

Overview

This course provides the learner with the tools to develop a comprehensive powder management framework.

Modules

1. Introduction to Powder Management
2. Powder Manage Lifecycle
3. Process Development
4. Assessment – Action Plan

Learning Outcomes

1. Understand how to create an action plan for a business
2. Understand how to improve the powder management process in a business
3. Understand the application of Health & Safety procedures

Learner Profile

Engineers and graduates

Certification

Vendor Certificate of Completion

Design for Metal Powder Bed Fusion (1 Day)

AMC21049 | 1 Day | Virtual Classroom

Overview

This course will provide the learner with an understanding of the stages needed, from conception to the design of a component using best practice methods and appropriate software.

Modules

1. How to optimise the functional design of a component for additive manufacturing (AM) using metal powder bed fusion

Learning Outcomes

1. Understand how to design parts that are optimised for function
2. Understand how manufacture parts using metal powder bed fusion
3. Know how to apply the best practices in optimising a design for manufacture through simulation
4. Understand how to exploit the design freedom of AM using metal powder bed fusion
5. Be capable of describing best practice for down selection and finite element analysis

Learner Profile

Design Engineers, Product Designers, Mechanical Engineers

Certification

Vendor Certificate of Completion

Design for Metal Powder Bed Fusion (2 Day)

AMC21050 | 2 Days | Virtual Classroom

Overview

This course will provide the learner with the necessary skills and knowledge to exploit the design freedom associated with Additive Manufacturing (AM).

Modules

1. Workflows
2. When to use AM
3. DfAM Mindset: Design Thinking
4. Part Down-Selection
5. Cost of AM
6. Generative Design + Topology Optimising
7. Lattices
8. Design for Post Processing/Inspection
9. Material / Process Selection
10. Build Preparation
11. Design Process Documentation
12. AM Standards
13. Practical design task and evaluation

Learning Outcomes

1. Know how to define the design requirement in relation to AM suitability, material and process selection
2. Understand how to develop AM design using the unique opportunities it has to offer
3. Be capable of delivering a workable design which complies with the considerations and restrictions of DfAM
4. Understand best practice use of standard and digital file dissemination

Learner Profile

Design Engineers

Certification

Vendor Certificate of Completion

A Guide to Design for Metal Powder Bed Fusion – 3 Hours

AMC21051 | 3 Hours | Online - Self Directed

Overview

The aim of this course is to help learners appreciate and contextualise the unique design opportunities opened up by industrial 3D printing.

Modules

1. DfM/DfF rules and new DfAM philosophy
2. Business models and opportunities which DfAM supports
3. How DfAM can be used to add value including lightweighting, part consolidation and complex internal geometries
4. Defining the available materials and processes and determine the factors which influence their suitability for a given design
5. Opportunities for Reverse Engineering in AM
6. Applying AM design considerations to specific design features
7. Simulating Topology Optimisation for an AM part and explain the unique benefits of using this process with AM
8. Considering the design implications for later stages in the manufacturing process including post-processing and inspection
9. Identifying the uses of simulation in Design for Function and Design for Manufacturability in AM
10. Recognising the file types, Data workflow and possible upcoming changes to AM digital thread
11. Comparing the overall workflow of DfAM with conventional manufacturing

Learning Outcomes

1. Be capable of differentiating between the old DfM/DfF rules and the new DfAM philosophy
2. Develop the ability to consider the business models and opportunities which DfAM supports
3. Explain the ways of DfAM can be used to add value including lightweight, part consolidation and complex internal geometries
4. Define the available materials and processes and determine the factors which influence their suitability for a given design
5. Simulate Topology Optimisation for an AM part and explain the unique benefits of using this process with AM
6. Consider the design implications for later stages in the manufacturing process including post-processing and inspection
7. State the opportunities for Reverse Engineering in AM

Learner Profile

Design Engineers

Certification

Vendor Certificate of Completion

Design Rules for Electron Beam Powder Bed Fusion

AMC21089 | 1 Hour | Virtual Classroom

Overview

This course will provide the learner with the understanding of how to prepare a model appropriate for manufacturing using Electron Beam Powder Bed Fusion.

Modules

1. Introduction to Electron Beam Bed Fusion
2. How to design for an Electron Beam Bed Fusion
3. How to process specific design rules
4. How to apply designs most suited to Electron Beam Powder Bed Fusion

Learning Outcomes

1. Understand how to create an effective Electron Beam Powder Bed Fusion Design
2. Be capable of implementing adjustments to Electron Beam Powder Bed Fusion
3. Possess familiarity of process specific design rules for Electron Beam Powder Bed Fusion

Learner Profile

Engineers and Graduates

Certification

Vendor Certificate of Completion

Technical Insight into Additive Manufacturing

AMC21090 | 2 Hours | Virtual Classroom

Overview

This course will provide the learner with an insight into the benefits of Additive Manufacturing (AM) and associated design possibilities.

Modules

1. The principles of AM
2. The skills required for each step of the process
3. The different processes and their characteristics
4. The approaches to design for AM

Learning Outcomes

1. Be capable of discussing the current state of AM
2. Know how to appropriately compare AM with conventional manufacturing
3. Understand how to identify the unique opportunities that AM allows

Learner Profile

Business Leaders and Decision Makers

Certification

Vendor Certificate of Completion

Developing the Business Case for Additive Manufacturing Adoption

AMC21092 | 1 Day | Virtual Classroom

Overview

This course will provide the learner with the skills necessary to develop a business case for use of Additive Manufacturing (AM).

Modules

1. Define the costs for each production step
2. Consider the opportunities that AM brings
3. What are the benefits of AM
4. How to develop a recommendation using quantified value

Learning Outcomes

1. Be capable of using the appropriate tools and templates
2. Understand how to develop a suitable business case
3. Know how to formulate and make realistic recommendations using the business case

Learner Profile

Application / Manufacturing Engineers and Decision Makers

Certification

Vendor Certificate of Completion

Design Rules for Laser Powder Bed Fusion

AMC21093 | 1 Hour | Online - Self Directed

Overview

This course will provide the learner with an understanding of how to prepare a model appropriate for manufacturing using Laser Powder Bed Fusion.

Modules

1. Introduction to Laser Powder Bed Fusion
2. How to design for a Laser Powder Bed Fusion
3. How to process specific design rules
4. How to apply designs most suited to Laser Powder Bed Fusion

Learning Outcomes


1. Understand how to create an effective Laser Powder Bed Fusion Design
2. Familiar of how to implement adjustments to a Laser Powder Bed Fusion
3. Know how to process specific design rules for Laser Powder Bed Fusion

Learner Profile

Engineers and Graduates

Certification

Vendor Certificate of Completion



Laser Processing

» Laser Processing - Introduction

Classroom, Blended learning, and Instructor lead online courses will be scheduled throughout the year. For details on course schedules and dates please go to amtce.ie/courses

Laser Processing

AMC21086 | 1 Day | Virtual Classroom

Overview

This course will provide the learner with an understanding of laser processing technologies, their capabilities, limitations, and what applications are currently available.

Modules

1. Introduction to Lasers
2. Laser Safety
3. Laser Materials Processing
4. Metrology and Metallurgy for Laser Processing

Learning Outcomes

1. Understand how to undertake safe laser operations
2. Understand how to process a variety of materials using a laser
3. Understand laser safety and how to implement it correctly

Learner Profile

Engineers and Graduates

Certification

Vendor Certificate of Completion



Industry 4.0 Technology Foundations

- » Introduction to Industry 4.0
- » Introduction to IIoT
- » Introduction to Machine Learning
- » Introduction to Innovation in Robotics
- » Introduction to Digital Manufacturing

Classroom, Blended learning, and Instructor lead online courses will be scheduled throughout the year. For details on course schedules and dates please go to amtce.ie/courses

Introduction to Industry 4.0

AMC21016 | 2 Days | Classroom

Overview

This course will introduce the learner to a procedural model that supports both the understanding and scope definition of Industry 4.0

Modules

1. Context of Industry 4.0
2. Elements of Industry 4.0
3. Implications of Industry 4.0
4. The Business Perspective on Industry 4.0

Learning Outcomes

1. Understand how to identify and create approaches to the introduction of business models in context of Industry 4.0
2. Understand the business implications of industry 4.0
3. Be capable of identifying the key element of industry 4.0 and potential business impacts

Learner Profile

Managers, Project Leaders, Automation Engineers

Certification

Vendor Certificate of Completion

Introduction to IIoT

AMC21037 | 1 Day | Classroom

Overview

This course provides the learner with an introduction to IIoT and how it delivers value in a manufacturing environment.

Modules

1. Understand what IIoT is
2. Understand the value of IIoT
3. Identify the key vendors within the space
4. Understand the types of suitable and problematic environments

Learning Outcomes

1. Understand Industrial Internet of Things and how to identify the elements of hype
2. Understand the acronyms
3. Understand IIoT application areas
4. Understand and potentially deploy IIoT technologies
5. Be capable of identifying the challenges

Learner Profile

Manufacturing Process Engineers, Project Managers interested in sensor technology deployment

Certification

7 Hours Engineers Ireland Accredited CPD

Introduction to Machine Learning

AMC21038 | 1 Day | Virtual Classroom

Overview

This course introduces the learner to the implementation concepts and important steps for machine learning projects.

Modules

1. Introduction to practical implementation of machine learning algorithms
2. Case examples based on learning machine implementations using Python

Learning Outcomes

1. Understand the basics of Machine Learning and Data Science
2. Understand the important Machine Learning methods and tools in the Data Science environment
3. Understand the core concepts of machine learning and state-of-the-art approaches
4. Know how to evaluate a machine learning project, plus outlining the pitfalls involved

Learner Profile

Managers who want to learn the language and tools of machine learning

Certification

5.5 Hours Engineers Ireland Accredited CPD

Innovation Through Robotics

AMC21039 | 4 Weeks | Workshop + Virtual Classroom + Online - Self Directed

Overview

The aim of this course is for learners to identify and evaluate deployment opportunities for robotics and automation within their organisation.

Modules

1. Overview of the role and possibilities for automation in the workplace. eLearning will consist of robotics and automation asynchronous tasks and knowledge transfer with an Introduction to innovation and industrial automation paradigms and applications
2. Introduction to some of the technology options for robotics. Self-directed eLearning will consist of an introduction to cobots, cobot safety, machine vision and mobile robots. with a virtual classroom session about building safety into an automation project.
3. Technicians, Engineering Managers and Engineers, the programme will help students identify and evaluate suitable and high value deployment opportunities for robotics in their organisation
4. Practical knowledge of a robot and its applications

Learning Outcomes

1. Identify and evaluate deployment opportunities for Robotics in their organisation
2. Relate one robot type to another
3. Be able to identify where the greatest impact can be achieved with a robotic installation

Learner Profile

Technicians, Engineering Managers and Engineers, the programme will help learners identify and evaluate suitable and high value deployment opportunities for robotics in their organisation

Certification

37 Hours Engineers Ireland Accredited CPD

Introduction to Digital Manufacturing

AMC21091 | 0.5 Hours | Online - Self Directed

Overview

This course will provide the learner with the skills and knowledge to make informed decisions on the implementation of digital tools for their manufacturing processes.

Modules

1. The principles of Digital Manufacturing
2. How to monitor the barriers to implementation

Learning Outcomes

1. Correctly articulate what Digital Manufacturing is, what is possible and what tools and technologies are available
2. Identify the advantages and benefits of Digital Manufacturing
3. Identify the factors to consider when selecting technologies and implementing Digital Manufacturing
4. Identify the barriers to implementation and how to mitigate them

Learner Profile

Engineers and Graduates

Certification

Vendor Certificate of Completion

Optimisation of Manufacturing of Processes and Operations for Industry 4.0

- » Six Sigma Yellow Belt
- » Yellow Belt Construction
- » Six Sigma Green Belt
- » Six Sigma Black Belt
- » People/Human side of Lean
- » Lean in Service
- » Lean Pass for Construction
- » Lean Laboratory Training
- » GMP
- » Lean Executive Leadership
- » Lean Mentoring & Coaching
- » Production Planning and Control
- » Introduction to Lean Manufacturing

Six Sigma Yellow Belt

AMC21057 | 2 Days | Classroom

Overview

This course provides the learner with an understanding of Lean Yellow Belt practices and will enable them to become effective team members faster which will result in improved performance and reduced time scales for Lean Six Sigma projects.

Modules

Topic 1: Define and Measure

- Six Sigma, DMAIC methodology, Lean Systems, Cost of Poor Quality (COPQ)
- Identify waste and understand the 8 Lean Waste Streams
- Define a problem statement, use a Project Charter and Project Schedule
- Introduction to SIPOC and VOC
- Stakeholder Communication Plan
- Introduction to Process Mapping
- Collecting and Measuring Data, Control and Pareto Charts

Topic 2: Analyse and Improve

- Team techniques
- Cause-Effect Diagrams
- Brainstorming
- Prioritise potential causes
- Decision making tools

Topic 3: Control

- Visual Management
- Review and Action on a continuous basis PDCA

Learning Outcomes

1. Understand the history and reasons for Lean Six Sigma
2. Understand the concepts, tools and principles of Lean
3. Understand the Six Sigma philosophy, the DMAIC methodology and the tools and techniques used in Six Sigma
4. Have an understanding of the similarities, differences and practical applications of both Six Sigma and Lean approaches
5. Take part in small projects using the basic understanding of the tools
6. Have an understanding of how Lean Six Sigma can be integrated into the company's management systems

Learner Profile

Learners will be working in or moving into a Lean Environment and involved in continuous improvement and workplace projects at a junior level

Certification

Belt

Yellow Belt Construction

AMC21058 | 2 Days | Classroom

Overview

This course provides learners with an understanding of Lean Yellow Belt practices, enabling them to become effective team members resulting in improved performance and reduced time scales for Lean Six Sigma construction related projects.

Modules (Note: This is not the full range of modules)

Topic 1: Lean for Construction

- Understanding Lean in a Construction environment
- Process Improvement vs Health & Safety

Topic 2: Define and Measure

- Six Sigma, DMAIC methodology, Lean Systems, Cost of Poor Quality (COPQ)
- Identify waste and understand the 8 Lean Waste Streams
- Define a problem statement, use a Project Charter and Project Schedule
- Introduction to SIPOC and VOC
- Stakeholder Communication Plan
- Introduction to Process Mapping
- Collecting and Measuring Data, Control and Pareto Charts

Topic 3: Analyse and Improve

- Team techniques
- Cause-Effect Diagrams
- Brainstorming
- Prioritise potential causes

Topic 4: Control

- Visual Management
- Review and Action on a continuous basis PDCA

Learning Outcomes

1. Understand the concepts, tools and principles of Lean that align with H&S regulations
2. Understand the Six Sigma philosophy, the DMAIC methodology, tools and techniques used in Six Sigma
3. Have an understanding of the similarities, differences and practical applications of both Six Sigma and Lean approaches
4. Take part in small projects using the basic understanding of tools
5. Identify some initial criteria and guidelines for selecting, reviewing and evaluating Lean Six Sigma projects

Learner Profile

Learners should be in a supervisory, foreman or operations role within the Construction Industry who want to understand where improvements can be made and having the authority to oversee and participate in Yellow Belt Projects

Certification

DCM Learning Lean Six Sigma Yellow Belt

Six Sigma Green Belt

AMC21059 | 5 Days | Classroom

Overview

This course provides learners with an understanding of Green Belt, Six Sigma and Lean principles. The course also covers the practical application of these tools and techniques.

Modules (Note: This is not the full range of modules)

Topic 1: Define

- Project Charter
- Business Case
- Key Customers

Topic 2: Measure

- Understanding Variability
- Measurement Basics
- Measurement Process and Plan

Topic 3: Analyse

- Data Analysis
- Scatter Diagrams
- Run Charts and Pareto Analysis

Topic 4: Improve

- Brainstorming
- Process Vision
- Lean Principles

Topic 5: Control

- Simple and necessary documentation (SOP's)
- Mistake Proofing/Poka-Yoke
- Statistical Process Control

Learning Outcomes

1. Understand the concepts, tools, and principles of Lean Six Sigma from a practical perspective
2. Be familiar with the key tools needed to solve practical business problems
3. Understand how Lean Six Sigma can be integrated into a company's management systems
4. Identify some initial criteria and guidelines for selecting, reviewing and evaluating Lean Six Sigma Green Belt projects
5. Understand how these programmes can be applied to deliver an effective continuous improvement program to reduce waste and variation in business

Learner Profile

The 5-day Green Belt training course is recommended for anyone working in or hoping to move into a lean environment. Green Belts typically manage larger projects and delegate project work to Yellow Belts within the project team

Certification

QQI Level 5

Six Sigma Black Belt

AMC21060 | 2 Days | Classroom

Overview

This course provides learners with an understanding of the role of a Lean Black Belt and how they lead teams to deliver results and improved performance and reduced time scales for Lean Six Sigma projects within construction.

Modules (Note: This is not the full range of modules)

Topic 1: Define Phase

- Voice of the customer
- Project tracking
- Project Stakeholder Analysis
- SIPOC

Topic 2: Measure Phase

- Process Characteristics
- Data Collection
- Probability
- Process Capabilities

Topic 3: Analysis Phase

- Overview of Data analysis
- Pareto analysis
- Root cause analysis
- Multi-variant analysis

Topic 4: Improvement Phase

- Generating Creative Solutions
- Decision Matrix
- Continuous Flow layouts
- Eliminate, Combine, Redesign, Simplify

Topic 5: Control Phase

- Control Plan Elements
- Statistical Process Control and Objectives
- Control chart selection and analysis

Learning Outcomes

1. Clearly understand the concepts of Lean Six Sigma and the DMAIC approach to process improvement
2. Understand the tools involved and where to best apply them
3. Understand the use of the tools in characterising processes, analysing process data, solving problems and controlling processes
4. Know how to use the key tools to solve practical business problems
5. Be capable of leading Lean Six Sigma project teams to deliver tangible business results on larger projects
6. Understand how to train and mentor Yellow and Green Belts

Learner Profile

Learners should already hold a Green Belt qualification and have 2+ years' experience in managing and overseeing Lean Six Sigma Projects

Certification

DCM Learning Lean Six Sigma Black Belt Awarded by IASSC Master Black Belt

People / Human Side of Lean

AMC21063 | 1 Day | Classroom

Overview

This course provides learners with an understanding of the steps in creating and sustaining a Lean culture within your organisation. Focusing specifically on the human side of a Lean mindset.

Modules

1. Lean thinking
2. Principles of Lean
3. Voice of the Customer
4. Creating a culture of change
5. 5 Whys
6. Mistake Proofing/Poka-Yoke
7. Industry examples

Learning Outcomes

1. Know how to adopt a Lean Mind-set
2. Understand Lean Culture
3. Be familiar with the process of ongoing change
4. Understand how to apply and use the 5-Whys in root cause analysis

Learner Profile

This course is suitable for anyone working on Lean projects or hoping to understand the Lean way of working and company culture

Certification

DCM Learning Certificate of Completion

Lean in Service

AMC21066 | 2 Days | Classroom

Overview

This course guides the learner on how to develop Lean techniques, specifically for Service/Office staff and office related projects.

Modules

Topic 1: Lean in Service

- Understanding Lean in a Service Industry
- Process Improvement in admin, IT processes and SOPs

Topic 2: Define and Measure

- Six Sigma, DMAIC methodology, Lean Systems, Cost of Poor Quality (COPQ)
- Identify waste and understand the 8 Lean Waste Streams
- Define a problem statement, use a Project Charter and Project Schedule
- Introduction to SIPOC and VOC
- Stakeholder Communication Plan
- Introduction to Process Mapping
- Collecting and Measuring Data, Control and Pareto Charts

Topic 3: Analyse and Improve

- Team techniques
- Cause-Effect Diagrams
- Brainstorming
- Prioritise potential causes
- Decision making tools

Topic 4: Control

- Visual Management Review and Action on a continuous basis PDCA

Learning Outcomes

1. Understand Change Management and Lean in the Service Industry
2. Understand the concepts, tools and principles of Lean that align with office, retail, professional services and other service sectors
3. Understand the Six Sigma philosophy, the DMAIC methodology and the tools and techniques used in Six Sigma

Learner Profile

Staff working in the Service Industry or within a service role in the Manufacturing Industry

Certification

DCM Learning Certificate of Completion

Lean Pass for Construction

AMC21067 | 1 Day | Classroom

Overview

This course provides learners within the Construction industry with a foundation in Lean Six Sigma.

Modules

Topic 1: Understanding Lean

- History of Lean Six Sigma
- Understanding DMAIC (Define Measure Analysis Improve & Control)
- Developing and understanding a story board
- Understanding the tools and techniques

Topic 2: Defining, Measuring and Analysing Projects

- Introduction to Moving Range Charts
- Understanding TQM and Lean Six Sigma
- Understanding FMEA (Failure Mode & Effect Analysis)
- Identifying project opportunities
- Understanding and producing a Process Map
- Understanding Metrics and Fishbone diagrams

Topic 3: Implementing Change

- The Nature of Change and overcoming resistance
- Tools and techniques for effective change and business transformation

Learning Outcomes

1. An overall understanding of the concepts, tools and principles of Lean
2. An overall understanding of the Six Sigma philosophy, the DMAIC methodology and the tools and techniques used in Six Sigma
3. Understand some of the initial criteria and guidelines for selecting, reviewing and evaluating Lean Six Sigma projects
4. Have a fundamental understanding of how these programmes can be applied to deliver an effective continuous improvement programmes to reduce waste and variation in a construction setting

Learner Profile

All construction staff

Certification

DCM Learning Certificate of Completion

Lean Laboratory Training

AMC21068 | 2 Days | Classroom

Overview

This course will allow learners to develop Lean techniques, specifically for Laboratory staff and projects.

Modules

Topic 1: Lean Laboratories

- Understanding Lean in a Lab Setting
- Case Studies

Topics 2: Define and Measure

- Six Sigma, DMAIC methodology, Lean Systems, Cost of Poor Quality (COPQ)
- Identify waste and understand the 8 Lean Waste Streams
- Define a problem statement, use a Project Charter and Project Schedule
- Introduction to SIPOC and VOC
- Stakeholder Communication Plan
- Introduction to Process Mapping
- Collecting and Measuring Data, Control and Pareto Charts

Topic 3: Analyse and Improve

- Team techniques
- Cause-Effect Diagrams
- Brainstorming
- Prioritise potential causes
- Decision making tools

Topic 4: Control

- Visual Management Review and Action on a continuous basis PDCA

Learning Outcomes

1. Understand the 5S's in a laboratory setting
2. Understand the concepts, tools and principles of Lean that align with office, retail, professional services and other service sectors
3. Understand the Six Sigma philosophy, the DMAIC methodology, tools and techniques used in Six Sigma

Learner Profile

This course is suitable for anyone working in a Laboratory

Certification

DCM Learning Certificate of Completion

Good Manufacturing Practices

AMC21069 | 1 Day | Classroom

Overview

This course is designed to offer the learner a view of best practice examples in Good Manufacturing Practices (GMP) with specific guidance and examples.

Modules

Topic 1: Understand GMPs

- Definition and history
- Location and structure of the GMPs

Topic 2: Standardisation

- Documentation
- Premises and equipment

Topic 3: QA Procedures

- Production
- Quality Control
- Personnel

Learning Outcomes

1. Understand the principle of GMP
2. Compare existing practices with best practice
3. Create and improve SOPs

Learner Profile

Suitable for anyone in a manufacturing environment / role on a Lean Six Sigma environment

Certification

DCM Learning Certificate of Completion

Lean Executive Leadership

AMC21070 | 2 Days | Classroom

Overview

This course will allow learners to develop the skills and demonstrates how these skills apply to a Data-driven approach to eliminating waste and building continuous improvement into business processes.

Modules

Topic 1: Introduction to Lean Management

- Origins of Six Sigma
- Key Concepts of Lean Management

Topic 2: Introduction to Lean

- Origins of Lean
- The 5 Principles of Lean
- Lean Six Sigma
- Measures and Goals
- The DMAIC Methodology and Key Tools

Topic 3: Lean Six Sigma Implementation

- The keys to Lean Six Sigma success
- Key Lean Six Sigma Roles & Responsibilities
- Obstacles and Barriers to successful implementation

Topic 4: Lean Six Sigma Project Selection

- The Voice of the Customer (VOC)
- Financial considerations
- Project Scoping & Project Charters

Topic 5: Lean Six Sigma Project Management

- Project Phase Reviews
- Project Deliverables
- Lean Six Sigma Project Case Studies
- Question and Answer Session

Learning Outcomes

1. Understand the concepts, tools, and principles of Lean
2. Understand to the Six Sigma philosophy, the DMAIC methodology tools and techniques used in Six Sigma
3. Know how to apply initial criteria and guidelines for selecting, reviewing and evaluating Lean Six Sigma projects
4. Demonstrate a fundamental understanding of how these projects can be applied to deliver an effective continuous improvement program to reduce waste a variation in the business
5. Understand how Lean Six Sigma can benefit the company and the return on investment

Learner Profile

Suitable for Team Leads, Managers and Supervisors, wanting to lead/oversee Lean Teams

Certification

DCM Learning Certificate of Completion

Lean Mentoring and Coaching

AMC21071 | 1 Day | Classroom

Overview

This course will allow learners to develop ongoing coaching and mentoring skills to guide Lean trainees while they are implementing projects within the workplace.

Modules

1. Setting up Coaching sessions
2. Mentoring agreements
3. Ongoing support/project reviews

Learning Outcomes

1. Be capable of drawing on additional support and experience of qualified Lean instructors
2. Understand the progression path to further Lean qualifications
3. Understand how to successfully complete Lean projects

Learner Profile

Suitable primarily for Lean Green Belts looking to progress to Black Belt level

Certification

DCM Learning Certificate of Completion

Production Planning and Control

AMC21072 | 1 Day | Classroom

Overview

This course will allow learners to focus on production line planning, controlling and sustaining implemented improvements.

Modules

Topic 1: Why Do We Plan?

- Assessing the benefits and risks of production planning
- SWOT analysis

Topic 2: Setting Objectives

- Listing priority areas for action and developing objectives
- Applying SMART strategic thinking skills

Topic 3: Implementation and Control

- Implementing the Plan
- Controlling overtime

Learning Outcomes

1. Understand the importance of planning
2. Understand how to create a production plan
3. Be capable of managing a plan longer term
4. Understand how to implement controls

Learner Profile

Suitable for Team Leads, Managers and Supervisors

Certification

DCM Learning Certificate of Completion

Introduction to Lean

AMC21040 | 1 Day | Virtual Classroom

Overview

This course provides the learner with a balance of theoretical learning and practical know how through an introduction to Lean and the fundamentals of Six Sigma

Modules

1. Background and History
2. Lean Fundamentals
3. Six Sigma Fundamentals
4. Problem Solving Approaches
5. General Information

Learning Outcomes


1. Understand the depth and breadth of Six Sigma
2. Develop an awareness of variations
3. Understand the infrastructure to support Lean and Six Sigma
4. Become familiar with project models

Learner Profile

Project Managers, core team members of project teams, direct reports starting to work in a lean environment, or any member of the workforce who wishes to introduce the theory of Lean into their workplace

Certification

Vendor Certificate of Completion



Management/Organisational Behaviours and Processes for Industry 4.0

- » Value Stream Mapping
- » Systematic Problem Solving
- » Cashflow Management
- » Human Error Reduction
- » Executive Wellness & Leadership
- » Enterprise Excellence & Strategy Deployment
- » Agile Work
- » An Introduction to Finance
- » Influencing Virtual Teams
- » Solving Problems by Making Effective Decisions
- » Leading Innovation and Change

Value Stream Mapping

AMC21061 | 1 Day | Classroom

Overview

This course allows the learner to seek out fresh perspectives and explore innovative solutions so they can overcome obstacles and reach their goals.

Modules

1. What is a Value Stream and Value Stream Mapping?
2. Determining customer value
3. Value and Non-Value Adding Activities
4. Seven Wastes
5. Basic Value Stream Mapping Icons
6. Push vs Pull Systems
7. Value Stream Data
8. Take Time
9. Creating a Future State Map

Learning Outcomes

1. Understand, document and improve business processes with value to the customer in mind
2. Understand and apply the value stream mapping process
3. Know how to create a future state map

Learner Profile

Suitable for anyone in a customer experience role or a Lean Six Sigma environment

Certification

DCM Learning Certificate of Completion

Systematic Problem Solving

AMC21062 | 1 Day | Classroom

Overview

This course will allow the learner to seek out fresh perspectives and explore innovative solutions in order to overcome obstacles and achieve required solutions.

Modules

1. A3 Thinking as a System
2. Basic formats of A3s
3. Three roles of the A3 process (Author/Owner, Responder, Coach)
4. Problem statements
5. Defining targets
6. Analysing root causes
7. Selecting countermeasures and follow-ups
8. Identifying common out-of-sequence patterns
9. Introducing A3 thinking to teams/organisations

Learning Outcomes

1. Be able to identify one or more problems to solve
2. Understand how to create a structured problem statement
3. Know how to develop criteria to evaluate a solution to the problem
4. Be capable of identifying potential solutions
5. Understand how to select the best solution
6. Be capable of implementing solutions and ex-post evaluation of chosen solution
7. Be familiar with using problem solving tools and know how to apply them

Learner Profile

Learners can range from Project Managers to operators, anyone looking to identify and solve common problems in the workplace

Certification

DCM Learning Certificate of Completion

Cashflow Management

AMC21064 | 1 Day | Virtual Classroom

Overview

This course will introduce the learner to the structures and terminology surrounding cashflow management and how to use financial information as a tool to make management decisions.

Modules

1. Cashflow Management overview
2. Double Entry Transaction
3. Trial Balance
4. Profit & Loss Account
5. Balance Sheet
6. Accruals and Prepayments
7. Bank Reconciliation
8. Cashflow Budget
9. Accounting Concepts

Learning Outcomes

1. Understand basic bookkeeping and accounting principles
2. Know how to record receipts and payments
3. Be capable of preparing and process bookkeeping documents
4. Understand record credit transactions
5. Know how to maintain petty cash records

Learner Profile

Learners should be in a management or accounting role

Certification

DCM Learning Certificate of Completion

Human Error Reduction

AMC21065 | 1 Day | Classroom

Overview

This course is designed to equip learners with an understanding of Poka-Yoke as a Lean tool for error proofing processes and services.

Modules

1. Understanding Human Error
2. Understand Poka-Yoke and its techniques
3. How to implement Poka-Yoke

Learning Outcomes

1. Understand Poka-Yoke and its main purpose
2. Know the three types of Poka-Yoke
3. Understand common Poka-Yoke techniques
4. Understand how to implement Poka-Yoke
5. Explain the benefits of implementing Poka-Yoke

Learner Profile

This course is suitable for anyone working on Lean projects and who need to error proof a process

Certification

DCM Learning Certificate of Completion

Executive Wellness and Leadership

MC21073 | 1 Day | Classroom

Overview

This course will introduce the learner to a proactive approach to ensure the health and wellbeing of staff/workforce.

Modules

Topic 1: Positive Communications

- Skills for Positive Communication
- Advanced Communications Skills: Levels of listening, reflective listening, reframing and use of positive language
- Role Plays

Topic 2: Staff Engagement

- Tools and techniques, you can use to excel at engagements
- How to ensure engagement during busy periods
- How to create an environment where wellness thrives

Topic 3: Effective Communication

- What are the essential communication skills?
- How to develop these skills
- How to set goals and get the best out of staff
- How to have meaningful conversations and measure impact

Topic 4: Sharing Content

- Creating a successful health campaign for maximum engagement
- Best practice examples of wellness campaigns that work

Learning Outcomes

1. Understand the roles and responsibilities of promoting wellness in the workplace
2. Know how to act as a positive role model for staff
3. Understand how to help colleagues to develop an understanding of the importance of wellness
4. Be capable of having meaningful conversations with colleagues
5. Promote company events and new initiatives

Learner Profile

This course is suitable for anyone wanting to lead a culture of Wellness in the Workplace

Certification

DCM Learning Certificate of Completion

Enterprise Excellence and Strategy Deployment

AMC21078 | 1 Day | Classroom

Overview

This course will allow the learner to understand the practical elements of strategic planning and service excellence.

Modules

Topic 1: Strategic Planning

- Creating a Strategic Plan that works
- Enterprise Excellence

Topic 2: Maintaining Excellence

- Strategy Implementation
- Control

Learning Outcomes

1. Know how to adopt a culture of Excellence
2. Have the necessary know-how to create a company strategy
3. Understand how to implement, adapt, and sustain this strategy over time

Learner Profile

Senior Management and Directors who want to learn the language and tools of Enterprise Excellence

Certification

Vendor Certificate of Completion

Agile Work

AMC21079 | 2 Days | Classroom

Overview

This course will provide the learner with an understanding of Agile and its key principles.

Modules

Topic 1: Introduction to Agile

- Agile values, principles, and practices
- Plan driven versus Agile - how Scrum is different from traditional Project Management
- The Agile Manifesto
- Business benefits of Agile and common Agile practices

Topic 2: The Scrum Framework

- Scrum Roles - Characteristics & Demands of the Scrum Roles and self-organising teams
- Scrum Events - The Sprint / Sprint Planning / Daily Scrum / Sprint Review & Retrospective
- The Purpose / Format / Facilitation of the Scrum Events
- Scrum Artefacts - Product Backlog / Sprint Backlog / The Increment

Topic 3: Requirements Management in Agile

- User Stories to Manage Requirements
- Rightsizing Work - Delivering Product Increments
- Breaking up Work and Defining Spikes

Topics 4: Release and Sprint Planning

- Effectively managing change with Scrum
- Prioritisation for Maximising Value and Minimising Risk
- Minimum Viable Features, Releases, Costing and Planning Scrum Projects
- Working with Scrum at Scale and across Distributed Organisations

Learning Outcomes

1. Understand the rationale behind Agile
2. Understand the fundamental shift in thought processes
3. Know how to utilise the Scrum Framework
4. Understand the vocabulary of Scrum and Agile terms

Learner Profile

Suitable for Project Managers, Product Owner and Lean Leaders

Certification

DCM Learning Certificate of Completion

An Introduction to Finance

AMC21080 | 1 Day | Classroom

Overview

This course will provide the learner with the skills to understand and manage Financial accounts, even from a non-Financial background.

Modules

Accounting Concepts and Principles

- Profit & Loss, Balance Sheet
- Income Statement
- Cashflow Statement
- Depreciation and asset valuation
- Capitalisation of costs
- How to identify deficiencies in accounts

Financial Analysis

- Gross margin, operating margin, net margin
- Return on Capital Employed, Return on Equity

Asset Turnover Ratios

- Liquidity and Working Capital Management
- Current Ratio, Quick Asset Ratio
- Collection Period, Inventory Period, Payments Period
- Financial Risk Ratios
- Leverage Ratios
- Profit Cover for Interest
- Cashflow Cover for Debt

Learning Outcomes

1. Understand key accounting concepts
2. Be capable of balancing budgets and understand cashflow
3. Know how to identify margins and analyse financial data

Learner Profile

Anyone looking to improve their understanding of financial and company accounts

Certification

DCM Learning Certificate of Completion

Influencing Virtual Teams

AMC21081 | 1 Day | Online - Self Directed

Overview

This course will provide the learner with an understanding of 17 techniques to influence virtual teams and demonstrate how these can be implemented within a virtual meeting environment to enhance remote workplace productivity.

Modules

1. Define and outline the 17 Techniques
2. How the techniques are implemented in remote working
3. How to monitor the impact of the 17 Techniques

Learning Outcomes

1. Gain experience of the 17 techniques that get things done with remote employees
2. Understand the role of 'attention' in remote working
3. Understand the loss of power in body language
4. Appreciate the impacts of 'shock' on psychological well-being

Learner Profile

Managers leading a functional team who find themselves working remotely for the first time and leaders of virtual teams who want increased performance and team effectiveness

Certification

Vendor Certificate of Completion

Solving Problems by Making Effective Decisions

AMC21087 | 1 Hour | Virtual Classroom

Overview

The aim of the course is to allow the learner to understand established problem-solving tools and techniques that can be used to evaluate courses of action, helping them to improve their leadership by making sound decisions based on practical considerations.

Modules

1. Introduction to the topic including how the subject of problem solving pertains to leadership
2. Identifying the root causes of a problem
3. A look at different models that can help narrow down options and choose a course of action
4. Best practice approaches to implementing decisions and monitoring their efficacy
5. A role play in which you get to make the decisions and implement changes

Learning Outcomes

1. Use problem solving tools effectively
2. Understand how to root cause problems in a systematic manner
3. Understand how to evaluate the impact of a solution to a problem

Learner Profile

Engineers and Graduates

Certification

Vendor Certificate of Completion

Leading Innovation and Change

AMC21088 | 1 Hour | Online - Self Directed

Overview

This course will provide the learner with an understanding of how to lead innovation and change within the workplace using the tools to implement.

Modules

1. Considering why innovation and change management have become crucial for modern organisations
2. Determining possibilities for innovation within your own organisation
3. A look at the process of implementing an innovation or change, bringing together what you've learned

Learning Outcomes

1. Use tools effectively to implement change within the workplace
2. Understand the change management process
3. Understand how to identify opportunities for innovation within an organisation

Learner Profile

Engineers and Graduates

Certification

Vendor Certificate of Completion



Exploiting Data Practices, Analytics and AI in Advanced Manufacturing

- » AI/Machine Learning
- » Information/Application of Data Capture, Analysis, Use
- » Using/Application of Data to make Business Decisions
- » Data Visualisation

Classroom, Blended learning, and Instructor lead online courses will be scheduled throughout the year. For details on course schedules and dates please go to amtce.ie/courses

Artificial Intelligence / Machine Learning

AMC21074 | 1 Day | Classroom

Overview

This course will enable the learner to understand how Artificial Intelligence (AI) is being incorporated into Manufacturing, Production and Lean.

Modules

Topic 1: Artificial Intelligence

- What is AI?
- Case Studies

Topic 2: Practical Implementation

- Initial implementation
- Scaling Up

Learning Outcomes

1. Understand AI and Machine Learning
2. Consider areas where AI could work within their organisation
3. Know how to apply Data science to test functionality

Learner Profile

Individuals who want to learn the language and tools of AI / Machine Learning

Certification

DCM Learning Certificate of Completion

Application of Data Capture, Analysis and Use

AMC21075 | 1 Day | Classroom

Overview

This course will expose the learner to a variety of Data subjects and analytical techniques utilised within industry and how they can be used to improve processes and attract customers.

Modules

Topic 1: Capturing Datasets

- Understanding Datasets needed for Lean
- Gaining permission to capture Data

Topic 2: Understanding Data

- Knowing what Data to capture and where to find it
- Capturing specific and relevant information

Topic 3: Evaluation and Review

- Reporting and Analysing

Learning Outcomes

1. Know how to review key Data subjects
2. Understand analytics within the industry
3. Be capable of improving processes through the use of Data
4. Understand how to use Data to attract customers

Learner Profile

Yellow, Green Belts and Managers who want to learn the language and tools of Data Capture

Certification

DCM Learning Certificate of Completion

Using/Application of Data to make Business Decisions

AMC21076 | 1 Day | Classroom

Overview

This course will allow the learner to understand the key Data subjects and analytics used in industry and to examine how these can be used to improve processes and attract customers.

Modules

Topic 1: Understanding Data

- Knowing what Data to capture and where to find it
- Capturing specific and relevant information

Topic 2: Using Data Effectively

- Data Analytics
- Data Reporting
- Making decisions based on Data

Topic 3: Evaluation and Review

- Reporting and Analysing

Learning Outcomes

1. Know how to review key Data subjects
2. Understand the application analytics in an industrial context
3. Understand how to improve processes through the use of Data
4. Apply high level analytics to presentations

Learner Profile

Yellow, Green Belts and those who want to learn the language and tools of Data Capture

Certification

DCM Learning Certificate of Completion

Data Visualisation

AMC21077 | 1 Day | Classroom

Overview

This course will allow the learner to understand the practical and visual application of key Data.

Modules

Topic 1: Stats That Make an Impact

- Reporting and statistics
- Framing positively

Topic 2: Presenting Your Message

- Highlighting Key Data
- Presenting with impact

Learning Outcomes

1. Appreciate the practical application of Data Visualisation
2. Understand how to effectively use visuals to convey key message
3. Know how to use charts and graphs that make an impact

Learner Profile

Staff who want to learn the language and tools of Data Visualisation

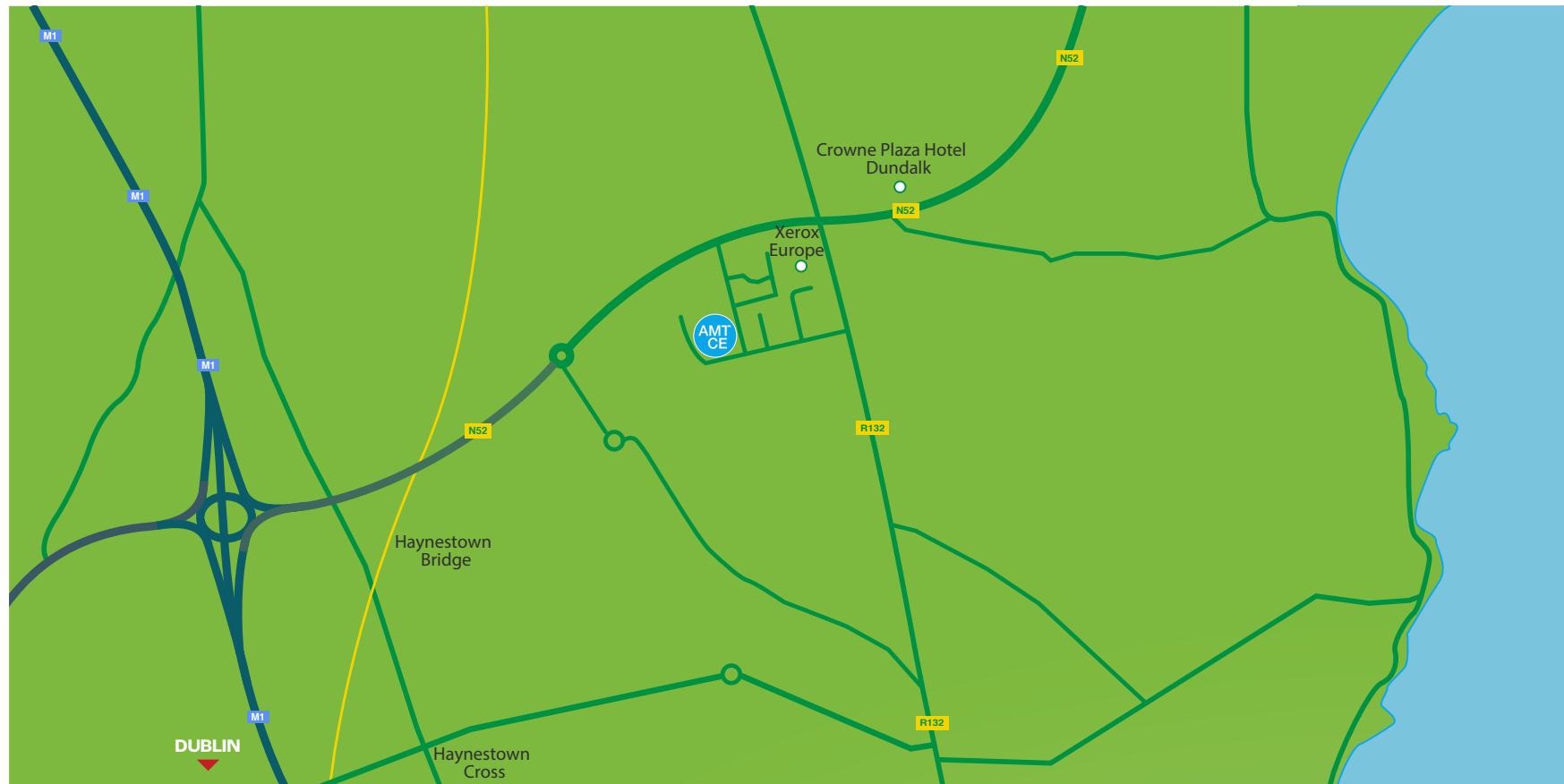
Certification

DCM Learning Certificate of Completion

AMTCE Location

53°58'34.3"N 6°23'54.9"W

<https://goo.gl/maps/VhKYu3My1zz5ppiR9>





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