

Training Catalogue 2022

# Advanced Manufacturing Training Centre of Excellence



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## Course Deliver Modes

To meet the diverse needs of companies and learners the AMTCE supports a variety of delivery modes supported by the latest in equipment, software, tools, and eLearning technologies.

### Classroom

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

### Virtual Classroom + Workshop

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Part course content delivery using eLearning and virtual classroom technologies. Part course content in AMTCE or other locations.

### Virtual Classroom

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Course content delivery using eLearning and virtual classroom technologies.

### Online Self-Directed

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

# Introduction

**The AMTCE was established in 2021 through funding from Enterprise Ireland and SOLAS to address the skills and training needs of the Irish manufacturing sector. The centre located in the Xerox Technology Park features over 55,000 sq. feet of training rooms, classrooms, workshops, labs and event space. Our ambition is to become the leading provider of advanced manufacturing training in Ireland. AMTCE training is practically orientated with hands on experience with state-of-the-art equipment, delivered by leading industry trainers using flexible delivery modes in response to identified industry needs.**

Despite a challenging year due to Covid restrictions the centre launched it's training offering to companies and employees in June 2021 and delivered its first training course in August. The training on offer has immediately resonated with employers. We've also been listening to you!! As a result we will be expanding our course offerings through 2022 with many new and exciting courses.

If you are interested in accelerating in your career or want to invest in the skills of your workforce please reach out to us, my team and I would be delighted to hear from you and to support you on your journey of learning through the AMTCE.

*Michael J McGrath*

**Michael J McGrath**  
**Technical Director AMTCE**

## Manufacturing Technology IQ

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



# Introduction

## Employers

Our courses cover the skills and practices which will allow you to enhance your existing operations and to provide your business with a skills-based platform to adopt and successfully utilise Industry 4.0 technologies and practices. The AMTCE provides:

- Training that suits your organisations requirements
- Bespoke design and delivery of courses to address the latest industry technology trends
- Enablement of employee mindset change empowering them to embrace, drive, plan and execute the technology changes required to maintain business competitiveness

“  
Training which evolves in response  
to technology advancement to  
empower companies and their  
employees to successfully navigate  
the digital transformation of  
advanced manufacturing”

“  
Embrace the opportunities  
of life-long learning to  
accelerate your career”

## Learners

AMTCE courses provide learners with the essential skills and knowledge required to deliver impact and value to companies wishing to utilise the latest technologies and practices in their operations. Course delivery by the AMTCE courses deliver:

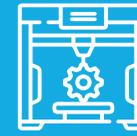
- Quality assured training delivered by leading industry practitioners and experts
- Funding supports under SOLAS Skills to Advance program which can provide funding of up to 100% for eligible employees
- Hands-on experiential learning supported by 1:1 access to state-of-the-art equipment

# Laboratory Facilities

AMTCE training courses which are offered under the SOLAS Skills to Advance programme represents a significant and tangible response to the identified needs of industry. Our course offerings span the breadth of the technology landscape relevant to current manufacturing operations and those required in industry 4.0 driven operations. Course offerings include:



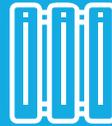
Advance Metrology and Practices



Additive Manufacturing



Industrial IoT



Industrial Systems and Control



Optimisation of Manufacturing Operations



Data/ML/AI in Manufacturing



Robotics, Collaborative Robotics and Robotic Processes



Techniques, Operations and Processes for Food and Pharma



Management/Organisational Behaviours/Processes for Industry 4.0



# Skills to Advance

The AMTCE run trainings funded under the SOLAS **Skills to Advance** policy. This is an education and training funding policy framework that supports people in current employment to develop and enhance their skills. Skills to Advance supports employees with upskilling and reskilling training opportunities, that enables progression in their current roles and the ability to adapt to the changing dynamics of the job market, whilst also offering support to employers with upskilling opportunities to develop their workforce.



## Information for Employers

Skills to Advance supports employers to identify skills needs in their business and to respond to the changing nature of jobs and skills. With heavily subsidised upskilling and reskilling opportunities, businesses are supported to thrive and grow, enhancing company competitiveness in a fast-changing business sector, and driving effective regional and sectoral development.

We work closely with enterprises of all sizes to identify the regional and sectoral, current and future skills required to target emerging opportunities, to move with the changing industrial landscape and to invest and futureproof their workforce, by providing heavily subsidised upskilling and reskilling training programmes for their employees.

We also work with SMEs to help identify skill gaps, and to develop and deliver training tailored to the specific needs of a business.

## Information for Employees

Employees can directly access training under this policy. The Skills to Advance initiative is designed to support employees in all parts of the workforce to access training with up to 100% funding, prioritising participation from employees that are currently in lower skilled jobs, and those at risk of economic displacement having a job that may become obsolete due to changes in technology, automation, digitalisation, outsourcing, changes in work practices, or as a result of structural change.



# Manufacturing Engineering Processes and Practices

- » Introduction to Pneumatics
- » Pneumatic Technologies
- » Pneumatics Systems Maintenance

**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](http://amtce.ie/courses)**

Code	Course Name	Delivery Mode	Duration
<b>AMC21054</b>	<b>Introduction to Pneumatics</b>	<b>Classroom/Online – Self Directed</b>	<b>2 Days</b>
Overview	The course is designed to introduce learners to the basic principles, properties and components used in pneumatic and electro-pneumatic systems.		
Learner Profile	Engineers and Technicians who manage or operate pneumatic systems and pneumatically actuated equipment.		
<b>AMC21053</b>	<b>Pneumatic Technologies</b>	<b>Classroom</b>	<b>2 Days</b>
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.		
Learner Profile	Mechanical Engineers/Technicians		
<b>AMC21008</b>	<b>Pneumatics Systems Maintenance</b>	<b>Classroom</b>	<b>4 Days</b>
Overview	This course is designed to enable the learners to maintain and carry out fault finding activities in pneumatic systems in a safe manner.		
Learner Profile	Maintenance Technicians		



# Industrial Systems, Processes and Control

- » Mechanical Maintenance
- » Preventive Maintenance
- » Maintenance Planning
- » Introduction to PLC's
- » Programmable Logic Controllers
- » Digital Sensors
- » Electrical Principles
- » Electrical Safety Awareness
- » Industrial Electrical Systems
- » Electrical Systems Troubleshooting
- » Systematic Troubleshooting
- » Electronics
- » Industry 4.0 Automation Pyramid Technologies

Code	Course Name	Delivery Mode	Duration
<b>AMC21013</b>	<b>Mechanical Maintenance</b>	<b>Classroom</b>	<b>5 Days</b>
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.		
Learner Profile	Technicians undertaking work on mechanical systems.		
<b>AMC21014</b>	<b>Preventive Maintenance</b>	<b>Classroom/Online</b>	<b>5 Days</b>
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.		
Learner Profile	Engineers and technicians working in manufacturing environments.		
<b>AMC21015</b>	<b>Maintenance Planning</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	The purpose of this course is 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.		
Learner Profile	Maintenance technicians and engineers		
<b>AMC21010</b>	<b>Introduction to PLC's</b>	<b>Classroom</b>	<b>3 Days</b>
Overview	This course will provide learners with a clear understanding of how PLCs act as the control hub in a modern automation system. The course is 70% hands on using process simulation software. This provides a realistic and gamified environment within which to solve automation challenges. Learners can progress to PLC training.		
Learner Profile	Engineers and Technicians new to PLC'S. Learners should have some knowledge of electrical circuits.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21009</b>	<b>Programmable Logic Controllers</b>	<b>Classroom</b>	<b>4 Days</b>
Overview	The purpose of this course is to enable the learner to interrogate a PLC system to determine the root cause of equipment faults and hang-ups. This intensive four-day course is 80% hands-on and involves the use of Factory I/O plc training simulation software. Learners will learn how to implement good coding structures that makes programs and Data Blocks easy to follow. Learners can progress to Industrial Electrical Systems.		
Learner Profile	Maintenance personnel		
<b>AMC21017</b>	<b>Digital Sensors</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	<p>Learners working in an automated environment will benefit greatly from an in-depth knowledge of the operating principle, setup and troubleshooting of sensor control loops. This Digital Sensors training course enables learners to install, set up and fault find a comprehensive range of digital sensors wired to a PLC through digital input interfaces. Sensors by their nature are susceptible to small environmental changes. An understanding of sensors enables effective troubleshooting.</p> <p>Participants will learn that the first step of troubleshooting is to never blame the sensor but rather investigate the environment around the sensor as this is a much more likely fault cause. All fault messages are triggered by sensors, so they frequently form part of the troubleshooting investigative process. With the advances in Industry 4 technology, sensors perform an enhanced monitoring role in predictive maintenance strategies.</p>		
Learner Profile	<p>Learners set up and calibrate a range of inductive, capacitive, ultra-sonic and photo-electric sensors. We utilise Factory I/O production scenes with embedded faults to enable learners to build experience of the important role sensors play in an automated environment.</p> <p>Maintenance and Process technicians</p>		
<b>AMC21012</b>	<b>Electrical Principles</b>	<b>Classroom</b>	<b>4 Days</b>
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.		
Learner Profile	This course is ideally suited to individuals who want to develop their knowledge of the basic concepts of electrical engineering principles to understand and predict how electromagnetic devices and electrical circuits will operate within their workplace and have the ability to communicate effectively with colleagues regarding electrical issues.		

Code	Course Name	Delivery Mode	Duration
<b>AMC22039</b>	<b>Electrical Safety Awareness</b>	<b>Online</b>	<b>1 Day</b>
Overview	This comprehensive 1-day course enables non-electrical maintenance staff to perform electrical troubleshooting and repair duties in a safe manner. The objective is to heighten the awareness of electrical hazards and to provide a set of safe working practices and precautions that address risks for personnel when working around LV systems. This is part of the IES training programme. Learners can progress to Industrial Electrical Systems.		
Learner Profile	This is suitable for those engaged in production maintenance and anyone who is required to work on or near electricity as part of their job role. Roles may include building contractors, construction workers, maintenance technicians and engineers.		
<b>AMC21011</b>	<b>Industrial Electrical Systems</b>	<b>Classroom (4) + Virtual Classroom (1)</b>	<b>5 Days</b>
Overview	The purpose of this course is to develop the skills required by industrial maintenance technicians to safely diagnose and repair faults in electrically controlled equipment. This is a uniquely practical course focused on replicating real-life scenarios using specialist industrial equipment and troubleshooting simulation software.		
Learner Profile	Learners who want to upskill and develop electrical knowledge to pursue a career in a production environment, or industrial maintenance personnel who would like to increase their electrical troubleshooting skills. You do not need to be formally qualified as an electrician for this course.		
<b>AMC21018</b>	<b>Electrical Systems Troubleshooting</b>	<b>Classroom</b>	<b>2 Day</b>
Overview	The purpose of this course is to enable learners to apply troubleshooting and problem-solving skills in a maintenance environment, by practicing logical troubleshooting methods on panels with a large range of fault complexity and a range of computerised application simulations. This is a follow on course from Industrial Electrical Systems.		
Learner Profile	Maintenance and Process technicians.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21020</b>	<b>Systematic Troubleshooting</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	The purpose of this course is to provide the learner with a robust set of strategies for effective troubleshooting. It focuses on a systematic approach for thinking about technical faults, navigating a path to solution, and communicating progress within a team. Using sophisticated troubleshooting simulation software and engaging, innovative practical exercises this training course will greatly reduce mean time to repair and costly, unnecessary escalations.		
Learner Profile	Maintenance engineers, field service engineers, remote technical support teams. This course will suit anybody who wants to be able to lead a troubleshooting strategy on any technology.		
<b>AMC21019</b>	<b>Electronics</b>	<b>Classroom</b>	<b>5 Days</b>
Overview	The purpose 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 an understanding of how to use equipment such as digital multi-meters, function generators and oscilloscopes.		
Learner Profile	This course is ideally suited to those who have a Level 5 Certificate in Electronics, Leaving Certificate or equivalent qualifications and/or relevant life and work experiences.		
<b>AMC21082</b>	<b>Industry 4.0 Automation Pyramid Technologies</b>	<b>Online – Self Directed</b>	<b>30+ Hours</b>
Overview	This course focuses on layers 1-3 (sensing and actuation, control and monitoring and supervision of the automation pyramid). The course deals with topics such as pneumatics, sensors, process control and robotics. This online interactive course uses a mixture of text, images, and a wide range of animations to build the learner's knowledge of industrial automation.		
Learner Profile	Learners applying for this course should be Individuals in a technical role looking to develop a foundational understanding of the principles and technologies used in a modern automation system.		

“I have really enjoyed the Industry 4.0 Automation Pyramid Technologies training. The course was well presented, easy to follow, and as its online, I could do it anytime. It’s more than an introduction to automation, the course explains all the steps, from pneumatics, electrical, PLC to the robots. I recommend this course to anyone who wishes to learn more about automation or wants to improve their skills in the area.”

Vanessa Loiola, Valoy Automation Limited



# Robotics and Collaborative Robotics

- » Introduction Robotic Welding
- » Robotic Welding
- » Robotics – Entry Level
- » Robotics – Intermediate Level
- » Robotics – Advanced Level
- » Innovation through Robotics
- » Cobotics (2 Day)
- » Cobotics (3 Day)
- » Cobotics (5 Day)
- » Cobotics, Programming and Vision Training



Code	Course Name	Delivery Mode	Duration
<b>AMC21024A</b>	<b>Introduction Robotic Welding</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	<p>This 1-day introduction to Robotic Welding course is designed to introduce learners to robotics but within the specific setting of arc welding. The workshop introduces the components that make up an industrial robotic welding cell such as workpiece positioners, torch, welding power source and other welding supplies. Throughout the day participants will gain hands on experience with our in-house robotic welding cells and familiarise themselves with manually moving (“jogging”) the robot and creating and running basic motion programs such as torch cleaning and wire cutting routines. Furthermore, participants will be shown how welding parameters are set on the power source and by completion of the course the participants will be shown a series of welding demonstrations and they will have created their very own welding program.</p>		
Learner Profile	<p>No prerequisite knowledge is required but a background in manual welding and computer literacy would be very beneficial. This workshop is suitable for participants both from a technical and non-technical background however, prospective participants should have a particular interest in gaining exposure to and learning more about robotic arc welding. This 1-day workshop acts as an introduction to anyone interested in partaking in a more extensive 3 day or 5-day courses.</p>		
<b>AMC21024</b>	<b>Robotic Welding</b>	<b>Classroom</b>	<b>5 Days</b>
Overview	<p>The course is carried out on state-of-the-art robotic welding cells complete with KUKA robot, turntable positioner, Fronius TPSi power source and safety enclosure. Over the duration of the course learners will create a series of robotic welding programs of their own using KUKA's ArcTech software packages and features unique to robotic welding. Learners will become familiar with the “Fronius Weld Connect” application for setting baseline weld parameters on the robot and weld power source. During the practical exercises participants will then fine tune their parameters for a given weld seam to achieve the best results. This course is suitable for learners coming from a technical background that are interested in learning more about robotic welding operation.</p>		
Learner Profile	<p>Participants should already be experienced in welding; therefore, this course is best suited to people wishing to bridge the gap and apply their manual welding experience to program robot welding tasks. Learners should also be familiar with robotic operation and motion programming and be comfortable in moving the robot with the different coordinate systems. Learners are recommended to first take the Intermediate 3-day Robotics course to give them the necessary competency in motion programming.</p>		

Code	Course Name	Delivery Mode	Duration
<b>AMC21029</b>	<b>Robotics – Entry Level</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course introduces learners to industrial robots, the industries in which they are used, the applications that they carry out and their evolution through to the present day. In addition, this workshop provides an overview of the fundamental components of a robotic cell and important factors to consider when integrating them to automated processes. Throughout the day participants will gain hands on experience in operating our state-of-the-art education robot cells and carry out a series of introductory operational and motion programming tasks. Learners do not require any prior robotic knowledge and can come from non-technical backgrounds. Business owners, managers, employees.		
Learner Profile	Computer literacy would be beneficial.		
<b>AMC21025</b>	<b>Robotics – Intermediate Level</b>	<b>Classroom</b>	<b>3 Days</b>
Overview	This course provides learners with all essential information needed to operate a KUKA robot. Participants will learn the necessary start up and commissioning procedures such as mastering, calculating load data and calibrating tool and base coordinate systems. In addition, they will be shown how to operate a robot cell compliant with robot safety regulations. This course covers in depth the different motion types a robot can execute and participants will develop their motion programming skills through the creation of a series of robot tasks. Furthermore, participants will combine pick and place operations into their motion programs and incorporate more advanced topics such as triggers, control functions and sub program calls. These programs will then be tested and ran in both manual and automatic operating modes.		
Learner Profile	Intermediate Robotics is tailored for individuals looking to gain more comprehensive knowledge on industrial robots with a focus on practical operation of a KUKA robot. Participants should be practical minded and from a technical background. This course is suitable for people looking to upskill and gain hands on experience performing robot start-up procedures as well as gain insight into modifying existing routines and competency in creating motion programs from scratch. No pre-requisite knowledge is required but prospective participants with no prior robotic exposure are advised to first take the 1-day Introduction to Robotics or Robotic Welding Workshop. Basic computer literacy is expected.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21026</b>	<b>Robotics – Advanced Level</b>	<b>Classroom</b>	<b>5 Days</b>
Overview	This advanced 5-Day Robotics course builds on prior learnings from the Intermediate 3-day Robotics course. Participants will carry out more expert level tasks and program in long hand KUKA Robot Language (KRL). This will include utilising user defined variables, arrays, and structures, and incorporate the use of control functions such as loops, conditional statements, and switch statements. In the practical modules, participants will directly apply this knowledge to create more complex robot programs such as multi-dimensional palletizing and depalletizing routines. Furthermore, topics such as cycle time optimization, dialog messaging and interrupt programming will be covered.		
Learner Profile	Learners should have completed the Intermediate 3-day Robotics or have proven experience with robotics operation, as this course builds on what was previously taught in the Intermediate 3-day Robotics course. This course is particularly suited for individuals interested in working a KUKA robot at an expert level to create more advanced tasks that require more complex programming abilities. All participants should have sufficient general knowledge in the field of robotics, be able to perform basic start-up tasks, and be confident in their motion programming ability.		
<b>AMC21039</b>	<b>Innovation through Robotics</b>	<b>Workshop + Virtual Classroom + Online-Self-Directed</b>	<b>4 weeks</b>
Overview	This course is designed to provide the learner with the ability to recognise and evaluate deployment opportunities for robotics and automation within their organisation and identify where the greatest business impact can be achieved.		
Learner Profile	Technicians, Engineering Managers and Engineers, this programme will support to identify and evaluate suitable and high value deployment opportunities for robotics in their organisation.		
<b>AMC21032</b>	<b>Cobotics (2 Day)</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	This course is designed to introduce learners to cobots and their operations. It will inform the learner about the potential uses of cobotics and industrial robots in different applications and settings.		
Learner Profile	SME owners and management level staff.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21027</b>	<b>Cobotics (3 Day)</b>	<b>Virtual Classroom (2) &amp; Workshop (1)</b>	<b>3 Days</b>
Overview	This course is designed for the learner to become familiarised with basic cobot programming and understand the limitations of using cobots in industrial applications Trade / Diploma however a good aptitude for automation systems would be sufficient.		
Learner Profile	Technicians, Engineers and Engineer Managers working in a manufacturing environment who wish to understand the opportunities/applications for cobots in their organisation.		
<b>AMC21028</b>	<b>Cobotics (5 Day)</b>	<b>Virtual Classroom (2) &amp; Workshop (3)</b>	<b>5 Days</b>
Overview	This course is designed for the learners to familiarise themselves with more advanced cobot programming and to understand the limitations of cobots, in addition to providing an introduction to cobot control software code and vision.		
Learner Profile	A good aptitude for automation systems would be sufficient and/or relevant technical experience.		
<b>AMC21033</b>	<b>Cobotics, Programming and Vision Training</b>	<b>Classroom</b>	<b>5 Days</b>
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.		
Learner Profile	Employees in the manufacturing sector.		

“We are very excited about the establishment by LMETB of the Advanced Manufacturing Training Centre of Excellence in Dundalk and recently experienced an effective interaction with the Centre resulting in the development and running of a bespoke Geometric Dimensioning and Tolerance (GD&T) programme for a number of staff across all our business units. The Dromone Engineering participants enjoyed the course, its content and found the structure of the training and business tools extremely useful and are already applying these in practice. We have already booked further courses for our staff and look forward to collaborating with the AMTCE going forward.”

*William Egenton, Managing Director, Dromone Engineering*

**DROMONE**<sup>®</sup>  
intelligent:innovation

A woman and a man are leaning over a table in a factory or laboratory setting. They are looking at a robotic arm that is positioned over a table with technical drawings. The woman is on the left, wearing a grey jacket, and the man is on the right, wearing a blue sweater and safety glasses. The robotic arm is white and blue, and it is holding a small object. The background shows a modern industrial environment with various pieces of equipment and a clean, well-lit space.

# Advanced Metrology and Systems

- » On-boarding Geometric Dimensioning and Tolerance (GD&T) within an Engineering Organisation
- » Geometric Dimension and Tolerance (GD&T)

Code	Course Name	Delivery Mode	Duration
<b>AMC21107</b>	<b>On-boarding Geometric Dimensioning and Tolerance (GD&amp;T) within an Engineering Organisation</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	The aim of this course is to provide learners with an introduction to the key concepts of geometric tolerance and dimensioning. The course examines how the departments and the collective organisation in a manufacturing business will be affected by the adoption of GD&T within their processes. The course also explores how a company can develop an organisational roadmap for the successful adoption of GD&T.		
Learner Profile	Managers, Project Leaders, Design Engineers Manufacturing Engineers, QA Engineers, Fabricators.		
<b>AMC21036</b>	<b>Geometric Dimension and Tolerance (GD&amp;T)</b>	<b>Virtual Classroom</b>	<b>4 Days</b>
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.		
Learner Profile	Managers, Project Leaders, Design Engineers, Manufacturing Engineers, QA Engineers, Fabricators.		

# Techniques, Operations and Processes (Pharma/Food)

- » Introduction to cGMP for the (Bio) Pharmaceutical Industry
- » Introduction to Technical Writing for the Manufacturing Sector
- » Advanced Technical Writing for the Manufacturing Sector
- » Introduction to Bioprocessing
- » Introduction to Cleanroom Operatives
- » Introduction to Medical Device Quality Systems & Regulation
- » Introduction to Medical Device Technologies
- » Introduction to Clinical Trials in the Pharmaceutical Sector
- » Introduction to PAT (Process Analytical Technology) for the (Bio) Pharmaceutical Sector
- » Introduction to QC for (Bio) Pharmaceutical Manufacturing
- » Introduction to Validation for the Pharmaceutical Industry
- » Developing Essential Competencies for a Digital Age
- » Process Digitisation
- » Introduction to QC Analysis and Materials Testing for the Construction Sector
- » Assessment of Food Defence risk and development of TACCP (Threats Assessment and Critical Control Points) systems for the food industry
- » Medical Devices
- » Process Analytical Technology
- » Pharma Utilities, Facilities, HVAC and Cleanroom
- » Bioprocessing
- » Tablet and Capsule Manufacturing and Packing Processing
- » Module Validation
- » Pharmaceutical Product Development
- » Pharma Utilities, Facilities, HVAC and Cleanroom

Code	Course Name	Delivery Mode	Duration
<b>AMC21099</b>	<b>Introduction to cGMP for the (Bio) Pharmaceutical Industry</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21098</b>	<b>Introduction to Technical Writing for the Manufacturing Sector</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC22034</b>	<b>Advanced Technical Writing for the Manufacturing Sector</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
Overview	This course aims to establish a high-level baseline standard of technical writing within manufacturing organisations. The course will provide practical guidance on templates, layout, style, and language to develop a high standard of documentation which is factual, coherent, succinct, and readable for intended audience. The course will incorporate concepts such as CAPAs, Deviations and Root Cause Analysis.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21096</b>	<b>Introduction to Bioprocessing</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		

Code	Course Name	Delivery Mode	Duration
<b>AMC21097</b>	<b>Introduction to Cleanroom Operatives</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
Overview	The aim of this course is to provide learners with the 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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Math's and English).		
<b>AMC22011</b>	<b>Introduction to Medical Device Quality Systems &amp; Regulation</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	The aim of this course is to assist learners to understand the medical device regulatory framework and global medical device regulation harmonisation. The course will provide the foundational knowledge and understanding of the core principles, concepts and rules governing medical device regulation with reference to the statutory frameworks under which such decisions are made. The course will also discuss the concept of risk management in the design and development of medical device products and will outline the requirements and implementation of a quality management system, including reference to quality assurance, auditing and CAPA.		
Learner Profile	Learners must have Leaving Certificate Maths or equivalent.		
<b>AMC22012</b>	<b>Introduction to Medical Device Technologies</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course aims to equip learners with solid knowledge of the varied nature of medical device types, technologies, platforms, and classifications in existence today. The course outlines the physiology and anatomy of the main body systems and provides an insight into the role of various technologies in the diagnosis and management of patients. The course also describes the medical device design and life cycle process, with specific focus on medical device manufacturing, drug handling, assembly, sterilisation, packaging, labelling, verification, validation and testing of medical devices.		
Learner Profile	Learners must have Leaving Certificate Math's or equivalent.		

Code	Course Name	Delivery Mode	Duration
<b>AMC22014</b>	<b>Introduction to Clinical Trials in the Pharmaceutical Sector</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	The aim of this course is to equip learners with key knowledge related to field of clinical research co-ordination and the key processes and regulations related conducting clinical research. Learners are introduced to key topics such as drug development life cycle, phases of clinical trials, primary regulations, and directives, GCP auditing & pharmacovigilance, and clinical safety, monitoring.		
Learner Profile	Learners must have Leaving Certificate Math's on equivalent.		
<b>AMC22015</b>	<b>Introduction to PAT (Process Analytical Technology for the (Bio) Pharmaceutical Sector</b>	<b>Blended</b>	<b>3 Days</b>
Overview	The aim of this course is to provide learners with knowledge and understanding of the use of Process Analytical Technologies for the Biopharmaceutical Manufacturing Sector. The programme will focus on technologies and techniques for applying PAT to a process, regulatory background and the benefits and drivers for the use of PAT.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Math's and English).		
<b>AMC22016</b>	<b>Introduction to QC for (Bio) Pharmaceutical Manufacturing</b>	<b>Online or Classroom</b>	<b>1 Day</b>
Overview	The aim of this course is to provide learners a solid understanding of the role of quality control within an organisation and how it relates to the manufacture of pharmaceutical products. Participants will gain knowledge in key areas including QC regulatory obligations, cGMP, QC test methods and QC / laboratory information systems and typical QC SOP documentation.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		

Code	Course Name	Delivery Mode	Duration
<b>AMC22017</b>	<b>Introduction to Validation for the Pharmaceutical Industry</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	The aim of this course is to assist learners to understand the regulatory requirements related to validation practices and documentation to ensure consistent high-quality products. The module will provide the core foundational knowledge and understanding of the fundamental principles and concepts related to including key set protocols of IQ, OQ, PQ. Learners will also gain knowledge related to validation documentation.		
Learner Profile	Learners must have Leaving Certificate Maths or equivalent.		
<b>AMC22035</b>	<b>Developing Essential Competencies for a Digital Age</b>	<b>Blended</b>	<b>5 Days</b>
Overview	This course provides learners with the skills to recognise the changing environmental climate and identify the skills and competencies to act in such an environment. The advancement in new technologies and the availability of huge quantities of data in a virtual environment also demands new transversal skills and competencies including the ability to make sense of information and present it in a meaningful way to the appropriate audience; critical thinking; communications; the ability to work across global timelines in a virtual collaborative environment; the ability to demonstrate skills of transdisciplinary; and the ability to recognise ethical and corporate responsibilities.		
Learner Profile	Employed individuals seeking to upskill in the competences required for the modern working environments.		
	<b>Process Digitisation</b>	<b>Blended</b>	<b>6 Semesters</b>
Overview	<p>Process Digitisation is the first step in any organisation's digital transformation journey. It is the process of making information available in a digital format. Advanced manufacturing organisations require a workforce with skillsets that enable them to interact with information technology, monitor process performance, analyse data, and contribute to business improvement.</p> <p>On successful completion of the programme learners will have the knowledge and skills to keep pace with rapidly occurring changes in the areas of supply chain management, operations management, operational excellence, systems architecture, data analytics, mathematics, statistics, automation, and digital communications. The programme comprises of 15 modules, delivered in the evening and Saturdays over 6 semesters. Please contact the AMTCE for additional programme details.</p>		
Learner Profile	This programme is ideal for learners who are employment in a manufacturing environment or support services and wish to develop the knowledge, skills, and competencies to take up roles as 'Operators and Technicians of the Future'. The programme will produce learners who able to actively support the Industry 4.0 transition underway across Ireland's advanced manufacturing/support services sector.		

Code	Course Name	Delivery Mode	Duration
<b>AMC22001</b>	<b>Introduction to QC Analysis and Materials Testing for the Construction Sector</b>	<b>Laboratory and Online</b>	<b>3 Days</b>
Overview	<p>The aim of this course is to provide learners with fundamental knowledge and understanding regarding the necessity for quality control with respect to analysis of materials used within the construction sector.</p> <p>The course will focus on building participants capabilities and awareness relating to the standards and regulations which apply to this sector and provide insights into the type of laboratory and onsite testing that apply to various material types.</p>		
Learner Profile	Individuals who are involved or have oversight of the examination, characterisation and testing of structural materials used within the construction sector.		
<b>AMC22003</b>	<b>Assessment of Food Defence risk and development of TACCP (Threats Assessment and Critical Control Points) systems for the food industry</b>	<b>Online</b>	<b>1 Day</b>
Overview	The aim of this course is to provide learners with an understanding of Food Defence/Security risk assessment and the development of a TACCP plan for a food business.		
Learner Profile	Employed Operators, Supervisor or Managers in the Food and Beverage Industries. Learners should at minimum have completed an Introduction to HACCP Food Safety Management programme, have a strong understanding of Risk Assessment and have practical experience in the food and beverage industry.		
<b>AMC21100</b>	<b>Medical Devices</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
Overview	The aim of this course is to provide learners a comprehensive overview of the manufacture of medical devices, focusing 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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		

Code	Course Name	Delivery Mode	Duration
<b>AMC21101</b>	<b>Process Analytical Technology</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
Overview	The aim of this course is to 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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Math's and English).		
<b>AMC21102</b>	<b>Pharma Utilities, Facilities, HVAC and Cleanroom</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21103</b>	<b>Bioprocessing</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		

Code	Course Name	Delivery Mode	Duration
<b>AMC21104</b>	<b>Tablet and Capsule Manufacturing and Packing Processing</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21105</b>	<b>Module Validation</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
Overview	The aim of this course is to provide learners with the fundamental knowledge related to validation within a regulated (bio)pharmaceutical manufacturing environment, focusing 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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21106</b>	<b>Quality Assurance and GMP</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		

Code	Course Name	Delivery Mode	Duration
<b>AMC22018</b>	<b>Pharmaceutical Product Development</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
Overview	This eLearning course examines the process of clinical research and its importance to researchers, regulators, and patients.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC22036</b>	<b>Pharma Utilities, Facilities, HVAC and Cleanroom</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
Overview	This eLearning course will 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 module consists of approximately 2 to 3 hours of learning time with in-built assessments.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		



# Industrial 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
- » 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
- » Technical Insight Design for Additive Manufacturing
- » Additive Manufacturing Health & Safety, Risks and Mitigation
- » Implementing Powder Management - Introduction
- » A Guide to Design for Metal Powder Bed Fusion (3 Hours)
- » Design for Metal Powder Bed Fusion – (1 Day)
- » Design for Metal Powder Bed Fusion (2 Day)
- » 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
- » Laser Processing

Code	Course Name	Delivery Mode	Duration
<b>AMC21021</b>	<b>3D Certified User Training</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	This course takes individuals from beginner level knowledge through to being competent users of a 3D printer. The course provides the learner with a strong grounding in how to configure and operate a 3D printer on a day-to-day basis.		
Learner Profile	New user / Inexperienced user/ someone wanting to further their knowledge of 3D printing (Not an advanced user course).		
<b>AMC21022</b>	<b>3D Application Training</b>	<b>Classroom/Virtual Classroom</b>	<b>1 Day</b>
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. The course provides the learner with the required knowledge and ability to reverse engineer parts for Additive Manufacturing.		
Learner Profile	Learners should possess a good understanding of FDM 3D printing with a desire to enhance their knowledge to the next level (3+ months experience) of operational and technical understanding. A working knowledge of CAD is desirable.		
<b>AMC21023</b>	<b>3D Advanced Materials Training</b>	<b>Classroom/Virtual Classroom</b>	<b>1 Day</b>
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, taking into consideration the properties required for engineering applications. Leveraging the advanced properties of engineering materials for FDM processes such as composite, filled and metal filaments.		
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.		
<b>AMC21035</b>	<b>Reverse Engineering Scan to Print</b>	<b>Classroom</b>	<b>2 Day</b>
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.		
Learner Profile	Engineers and Engineering Managers interested in industrial 3D printing applications and prototyping.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21055</b>	<b>Introduction to 3D Printing</b>	<b>Classroom</b>	<b>4 Days</b>
Overview	This course is designed to give learners an in-depth view of how 3D printing is currently applied in Industry.		
Learner Profile	Technician, Engineers and Engineering Managers interested in industrial 3D printing.		
<b>AMC21056</b>	<b>3D Printing in Industry</b>	<b>Classroom</b>	<b>4 Days</b>
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.		
Learner Profile	Technician, Engineers and Engineering Managers interested in industrial 3D printing.		
<b>AMC21030</b>	<b>SolidWorks Essentials – Entry Level</b>	<b>Classroom</b>	<b>4 Days</b>
Overview	This course teaches the learner how to use SolidWorks mechanical design automation software to build parametric models of parts and associated drawings.		
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.		
<b>AMC21041</b>	<b>Advanced Introduction to Additive Manufacturing</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
Overview	This course enables the learner to engage in expert discussions regarding the associated processes, software/hardware, and materials for Additive Manufacturing. The course will outline the principles of AM, compare the entire range of AM processes and their characteristics, recognise the various approaches to design for AM, including design for performance and manufacture. It will also identify relevant post-processing and inspection techniques and compare the relevant materials and material properties used in AM.		
Learner Profile	Business leaders, decision makers and anyone interested in discussing AM with experts.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21042</b>	<b>A Guide to Additive Manufacturing for Engineers - Part 1</b>	<b>Online – Self Directed</b>	<b>0.5 Hours</b>
Overview	This highly interactive online learning course will provide you with insight into each of the seven Additive Manufacturing (AM) processes and their associated materials. The course will help you make an informed decision about whether Industrial 3D printing can be adopted by your business.		
Learner Profile	Business leaders, decision makers and anyone with an interest in learning more about AM.		
<b>AMC21043</b>	<b>A Guide to Additive Manufacturing for Engineers - Part 2</b>	<b>Online – Self Directed</b>	<b>2 Hours</b>
Overview	This course provides the learner with the skills to explain the material, post-processing, and inspection requirements for AM. It will provide further insight into Additive Manufacturing (AM), focusing on the seven AM processes and their associated materials.		
Learner Profile	Business leaders, decision makers and anyone with an interest in learning more about AM.		
<b>AMC21044</b>	<b>Best Practice in Process Selection – Intermediate Level</b>	<b>Online – Self Directed</b>	<b>1 Hour</b>
Overview	The aim of this course is to teach learners the most appropriate technology for their business's requirements. This includes a two-stage process selection tool which helps narrow down the available process on a total of 18 criteria.		
Learner Profile	Engineers and Decision Makers.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21045</b>	<b>Essential Requirements Capture for Additive Manufacturing</b>	<b>Online – Self Directed</b>	<b>0.5 Hours</b>
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.		
Learner Profile	Design Engineer, Application Engineer and Individuals in Technical Manufacturing Roles.		
<b>AMC21046</b>	<b>Technical Insight Design for Additive Manufacturing</b>	<b>Online – Self Directed</b>	<b>1.5 Hours</b>
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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21047</b>	<b>Additive Manufacturing Health &amp; Safety, Risks and Mitigation</b>	<b>Online – Self Directed</b>	<b>1.5 Hours</b>
Overview	This course provides the learner with the necessary skills and knowledge to apply Health & Safety (H&S) best practice guidelines when using loose powders, equipment, materials, and post processing. You will learn to recognise unsafe practices, the risks, and how to apply appropriate mitigation.		
Learner Profile	Workshop users, Technicians and Material Technicians.		
<b>AMC21048</b>	<b>Implementing Powder Management Introduction</b>	<b>Online – Self Directed</b>	<b>1 Day</b>
Overview	This course provides the learner with the tools to develop a comprehensive powder management framework.		
Learner Profile	Engineers and Individuals in Technical Manufacturing Roles.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21051</b>	<b>A Guide to Design for Metal Powder Bed Fusion (3 Hours)</b>	<b>Online – Self Directed</b>	<b>3 Hours</b>
Overview	This course will help learners appreciate and contextualise the unique design opportunities provided by industrial 3D printing, as well as considering the challenges which come when designing for this rapidly evolving technology.		
Learner Profile	Design Engineers		
<b>AMC21049</b>	<b>Design for Metal Powder Bed Fusion – (1 Day)</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Design Engineers, Product Designers, Mechanical Engineers.		
<b>AMC21050</b>	<b>Design for Metal Powder Bed Fusion (2 Day)</b>	<b>Virtual Classroom</b>	<b>2 Days</b>
Overview	The aim of this course is to provide learners with the fundamental knowledge related to validation within a regulated (bio)pharmaceutical manufacturing environment, focusing 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.		
Learner Profile	Learners should at minimum have completed the Junior Cert with pass grades in at least five ordinary level subjects (including Maths and English).		
<b>AMC21089</b>	<b>Design Rules for Electron Beam Powder Bed Fusion</b>	<b>Online – Self Directed</b>	<b>1 Hour</b>
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.		
Learner Profile	Engineers and Individuals in Technical Manufacturing Roles.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21090</b>	<b>Technical Insight into Additive Manufacturing</b>	<b>Online – Self Directed</b>	<b>1.5 Hours</b>
Overview	This course will provide the learner with an insight into the benefits of Additive Manufacturing (AM) and associated design possibilities. It will help the learner appreciate and contextualise the unique design opportunities opened by Industrial 3D Printing, as well as considering the challenges which come when designing for this rapidly evolving technology.		
Learner Profile	Engineers, Individuals in Technical Manufacturing Roles, Business Leaders and Decision Makers.		
<b>AMC21092</b>	<b>Developing the Business Case for Additive Manufacturing Adoption</b>	<b>Online – Self Directed</b>	<b>1 Day</b>
Overview	This course will provide the learner with the skills necessary to develop a business case for use of Additive Manufacturing (AM). The learner will gain skills in using a process-based approach to: define the costs for each production step; consider the opportunities and benefits of AM for the selected component; and develop a recommendation based on a quantified value of AM to the business and end user.		
Learner Profile	Application / Manufacturing Engineers and Decision Makers.		
<b>AMC21093</b>	<b>Design Rules for Laser Powder Bed Fusion</b>	<b>Online – Self Directed</b>	<b>1 Hours</b>
Overview	This course will provide the learner with an understanding of how to prepare a model appropriate for manufacturing using Laser Powder Bed Fusion.		
Learner Profile	Engineers and Individuals in Technical Manufacturing Roles.		
<b>AMC21086</b>	<b>Laser Processing</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
Overview	This course provides the learner with an understanding of laser processing technologies, their capabilities, limitations, and what applications are currently available.		
Learner Profile	Engineers and Individuals in Technical Manufacturing Roles.		

“I was delighted to attend the 3D Additive Manufacturing Workshop on 23rd September this year. In particular it was great to be able to view the very impressive AMTCE building and facilities in Dundalk Campus. This is a very valuable and welcome training resource for all companies like Abcon in the North East. From short courses on 3D Additive manufacturing through to Robotics/Cobotics we really look forward to sending some colleagues to AMTCE in the coming years. Congratulations to all who are making this a reality for the region.”

Barry Smith, Managing Director, Abcon Industrial Products Ltd





# Industry 4.0 Technology Foundations

- » Introduction to Industry 4.0
- » Introduction to IIoT
- » Introduction to Machine Learning
- » User Experience in Manufacturing
- » Introduction to Digital Manufacturing
- » Application of Data Capture, Analysis and 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](http://amtce.ie/courses)**

Code	Course Name	Delivery Mode	Duration
<b>AMC21016</b>	<b>Introduction to Industry 4.0</b>	<b>Online</b>	<b>1 Day</b>
Overview	This course provides learners with a foundational overview of the 4th Industrial Revolution, introducing the history, the key elements and design principles of Industry 4.0, and an in-depth discussion with case studies of key technologies for the smart factory.		
Learner Profile	Professionals working in a manufacturing environment who lead the production of goods and service, and who are keen to learn and implement Industry 4.0 concepts in their organisation.		
<b>AMC21037</b>	<b>Introduction to IIoT</b>	<b>Online</b>	<b>2.5 Days</b>
Overview	This course is designed to provide a broad, un-biased introductory overview of Industrial Internet of Things (IIoT). It covers the hype, acronyms, pitfalls, and challenges involved in deploying an IIoT project.		
Learner Profile	Manufacturing process engineers, production managers interested in understanding how technology can deliver valuable insights from existing production processes.		
<b>AMC21038</b>	<b>Introduction to Machine Learning</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
Overview	This course introduces the learner to the implementation concepts and important steps for machine learning projects. This course is designed to provide a general introduction for anyone interested in understanding and potentially using machine learning. It covers the core machine learning concepts plus more state-of-the-art approaches, planning and evaluating a machine learning project, plus outlining the pitfalls involved.		
Learner Profile	Manufacturing software engineers/developers, solution architects, Designer in Human-Centered Machine Learning; Data Scientist; Computational Linguist.		
<b>AMC21108</b>	<b>User Experience in Manufacturing</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
Overview	This course is designed to introduce participants to User Experience (UX) research and design, in general and specifically to manufacturing. The fundamentals of Design Thinking are also covered. All learnings will be applied in a practical workshop, wherein solutions to UX challenges in manufacturing will be explored.		
Learner Profile	Participants from a variety of backgrounds will benefit from taking this course, in particular; Management; Product Owners; Design/Industrial Design Teams; Engineering Teams (incl. Developers, QA); Coordinators (PMs); Operatives; Information Architects; Technical Writers; Trainers; Content Writers and Marketing/CX Designers.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21091</b>	<b>Introduction to Digital Manufacturing</b>	<b>Online – Self Directed</b>	<b>0.5 Hours</b>
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.		
Learner Profile	This course is for Design Engineers, Manufacturing Engineers, Product Designers, Research Engineers, or Technical Managers with an interest of integrating digital tools into manufacturing.		
<b>AMC21075</b>	<b>Application of Data Capture, Analysis and Use</b>	<b>Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Yellow, Green Belts and Managers who want to learn the language and tools of Data Capture.		
<b>AMC21076</b>	<b>Using/Application of Data to make Business Decisions</b>	<b>Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Yellow, Green Belts and those who want to learn the language and tools of Data Capture.		
<b>AMC21077</b>	<b>Data Visualisation</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course will provide the learner an understanding of the practical and visual application of key Data sets within operational environments.		
Learner Profile	Individuals in operational and engineering roles who want to learn the language and tools of Data Visualisation.		

“The trainer left absolutely no stone unturned – each topic and sub-topic was gone into in just enough detail for us to go off and carry out our own additional searches for further reading. We now know exactly the important things that we don’t know enough about but which we will need to get to grips with. And on the topic of IIOT, this alone will prove critical for success.”

Tom Griffith, Business Development Manager, Serchek Industrial Ireland Limited



# Optimisation of Manufacturing of Processes and Operations for Industry 4.0

- » Introduction to Lean
- » Six Sigma Yellow Belt
- » Lean Pass for Construction
- » Yellow Belt – Construction
- » Six Sigma Green Belt
- » People / Human Side of Lean
- » Lean Mentoring and Coaching
- » Lean Executive Leadership
- » Production Planning and Control
- » Lean in Service
- » Lean Laboratory Training
- » Good Manufacturing Practices

Code	Course Name	Delivery Mode	Duration
<b>AMC21040</b>	<b>Introduction to Lean</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
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.		
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.		
<b>AMC21057</b>	<b>Six Sigma Yellow Belt</b>	<b>Classroom</b>	<b>2 Days</b>
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.		
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.		
<b>AMC21067</b>	<b>Lean Pass for Construction</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course provides learners within the Construction industry with a foundation in Lean Six Sigma.		
Learner Profile	All construction staff.		
<b>AMC21058</b>	<b>Yellow Belt – Construction</b>	<b>Classroom</b>	<b>2 Days</b>
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.		
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.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21059</b>	<b>Six Sigma Green Belt</b>	<b>Classroom</b>	<b>5 Days</b>
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.		
Learner Profile	This course is ideal for anyone working in a manufacturing or service environment who wishes to lead improvement projects based on Lean and Six Sigma methodologies.		
<b>AMC21063</b>	<b>People / Human Side of Lean</b>	<b>Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	This course is suitable for anyone working on Lean projects or hoping to understand the Lean way of working and company culture.		
<b>AMC21071</b>	<b>Lean Mentoring and Coaching</b>	<b>Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Suitable primarily for Lean Green Belts looking to progress to Black Belt level.		
<b>AMC21070</b>	<b>Lean Executive Leadership</b>	<b>Classroom</b>	<b>2 Days</b>
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.		
Learner Profile	Suitable for Team Leads, Managers and Supervisors, wanting to lead/oversee Lean Teams.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21072</b>	<b>Production Planning and Control</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course will allow learners to focus on production line planning, controlling, and sustaining implemented improvements.		
Learner Profile	Suitable for Team Leads, Managers and Supervisors.		
<b>AMC21066</b>	<b>Lean in Service</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	This course guides the learner on how to develop Lean techniques, specifically for Service/Office staff and office related projects.		
Learner Profile	Staff working in the Service Industry or within a service role in the Manufacturing Industry.		
<b>AMC21068</b>	<b>Lean Laboratory Training</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	This course will allow learners to develop Lean techniques, specifically for Laboratory staff and projects.		
Learner Profile	This course is suitable for anyone working in a Laboratory.		
<b>AMC21069</b>	<b>Good Manufacturing Practices</b>	<b>Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Suitable for anyone in a manufacturing environment / role or a Lean Six Sigma environment.		

# 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

Code	Course Name	Delivery Mode	Duration
<b>AMC21061</b>	<b>Value Stream Mapping</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course allows the learner to seek out fresh perspectives and explore innovative solutions so they can overcome obstacles and reach their goals.		
Learner Profile	Suitable for anyone in a customer experience role or a Lean Six Sigma environment.		
<b>AMC21062</b>	<b>Systematic Problem Solving</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course will allow the learner to seek out fresh perspectives and explore innovative solutions to overcome obstacles and achieve required solutions. It will enable the learner to understand the use of brainstorming and affinity diagram, how to implement A3 problem solving for process improvements implement the 5 Why problem-solving tool.		
Learner Profile	Learners can range from Project Managers to operators, anyone looking to identify and solve common problems in the workplace.		
<b>AMC21064</b>	<b>Cashflow Management</b>	<b>Classroom</b>	<b>1 Day</b>
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.		
Learner Profile	Learners should be in a management or accounting role.		
<b>AMC21065</b>	<b>Human Error Reduction</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course is designed to equip learners with an understanding of Poka-Yoke as a Lean tool for error proofing processes and services.		
Learner Profile	This course is suitable for anyone working on Lean projects and who need to error proof a process.		

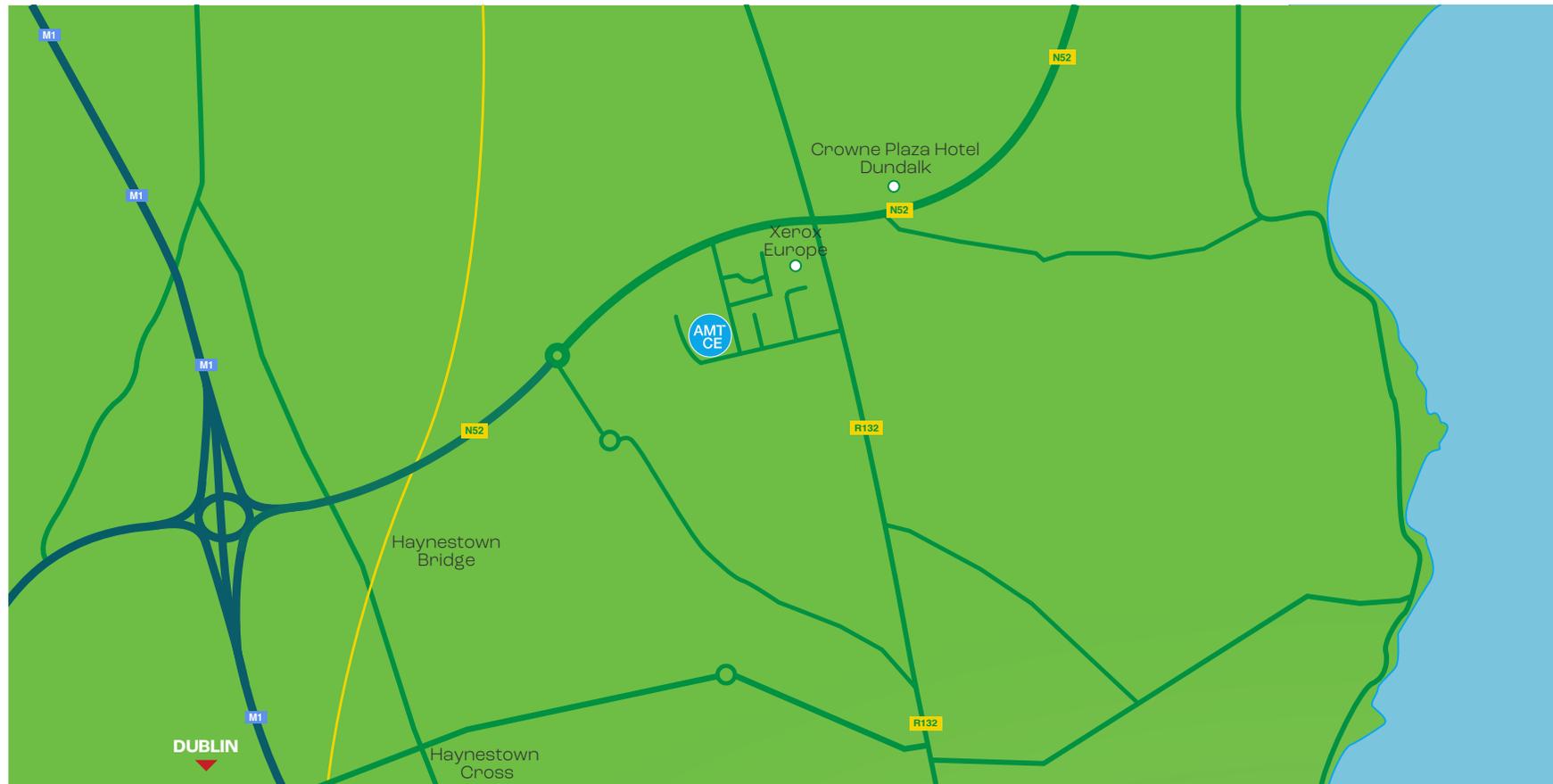
Code	Course Name	Delivery Mode	Duration
<b>AMC21073</b>	<b>Executive Wellness and Leadership</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course will introduce the learner to a proactive approach to ensure the health and wellbeing of staff/workforce.		
Learner Profile	This course is suitable for anyone wanting to lead a culture of Wellness in the Workplace.		
<b>AMC21078</b>	<b>Enterprise Excellence and Strategy Deployment</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course will allow the learner to understand the practical elements of strategic planning and service excellence.		
Learner Profile	Senior Management and Directors who want to learn the language and tools of Enterprise Excellence.		
<b>AMC21079</b>	<b>Agile Work</b>	<b>Classroom</b>	<b>2 Days</b>
Overview	This course will provide the learner with an understanding of Agile and its key principles.		
Learner Profile	Suitable for Project Managers, Product Owner and Lean Leaders.		
<b>AMC21080</b>	<b>An Introduction to Finance</b>	<b>Classroom</b>	<b>1 Day</b>
Overview	This course will provide the learner with the skills to understand and manage financial accounts, even from a non-financial background.		
Learner Profile	Anyone looking to improve their understanding of financial and company accounts.		
<b>AMC21081</b>	<b>Influencing Virtual Teams</b>	<b>Virtual Classroom</b>	<b>1 Day</b>
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.		
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.		

Code	Course Name	Delivery Mode	Duration
<b>AMC21087</b>	<b>Solving Problems by Making Effective Decisions</b>	<b>Online – Self Directed</b>	<b>1 Hour</b>
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.		
Learner Profile	Individuals in technical and management roles.		
<b>AMC21088</b>	<b>Leading Innovation and Change</b>	<b>Online – Self Directed</b>	<b>1 Hour</b>
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.		
Learner Profile	Individuals in technical, supervisory and management roles.		

# AMTCE Location

53°58'34.3"N 6°23'54.9"W

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





**AMT  
CE**  
*Ionad Oiliúna  
Barr Feabhais  
Ard-Déantúsaíochta*  
Advanced  
Manufacturing Training  
Centre of Excellence

Staff & Visitor  
Car Park ↑  
Disabled Parking ↑

## CONTACT DETAILS

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