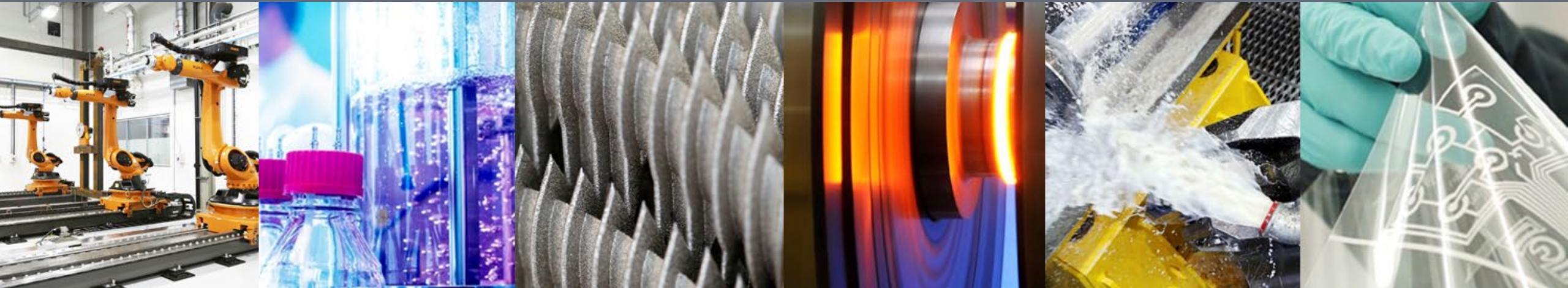




# Emerging Skills Programme



## Course Prospectus – Additive Manufacturing



# ADDITIVE MANUFACTURING – Units and Key Learning Outcomes



What is Additive Manufacture	Compares the 7 Additive Manufacturing processes on their technology, output and applications. Outlines the reasons why we would choose one particular technology over another.
Requirements Capture	Recognises the purpose and benefit of capturing full AM requirements in a single step. Identifies AM-specific factors and questions that should be established during requirements capture process for a given application.
Design for Additive Manufacture	Defines the unique design requirements of AM in relation to suitability, material and process selection. Outlines the unique opportunities AM design has to offer. Investigate the considerations and restrictions of DfAM (design for additive manufacture).
Health and Safety for Additive Manufacture	Explains health, safety, laws and legislation associated with loose powders. Describes health and safety (H&S) best-practice guidelines. Identifies hazards associated with loose powders. Explains prevention and control methods used to reduce risk. Captures unsafe practices, applying appropriate mitigation techniques
Powder Handling	Comprehensive capture of the powder handling processes. Apply best-practice guidelines to ensure powder quality is maintained during transportation, storage, use, recycling and disposal. Lists the steps in the AM powder handling process and applies best-practice to the quality from receipt to disposal. Outlines the safety considerations at each stage of the AM powder handling process.
Manufacture	Compares the 7 processes their technology, applications and output. Examines the four-stage method of selecting the most suitable process for a particular requirement. Outlines the fundamentals of the AM manufacturing process including Powder handling & management and Directed Energy Deposition configuration. Applies the process selection method to case studies using primary and secondary down selection outcomes. Applies best-practice process selection methodology to a requirement capture for your chosen component. Identifies the metallurgical principles of metal AM and how they affect material properties during the manufacture of your parts. Outlines the file management and data strategy for AM. Identify methods for best practice powder characterisation for Additive Manufacturing in your organisation. Correctly identify methods for best practice powder handling for Additive Manufacturing in your organisation. Correctly identify methods for best practice powder management for Additive Manufacturing in your organisation. How to apply best practice safety guidelines when handling loose powders during a variety of processes.
Post Processing	Outlines the typical post-build processes for Powder Bed Fusion and Binder Jetting components. Accurately assess as-built components for manufacturing defects to avoid post-processing faulty parts. How to apply best-practice support removal techniques to real components, avoiding part damage. Outlines the different methods of inspection and metrology used in AM processes. Appropriate inspection methods for given AM process and products.

Each unit will consist of 1 day worth of training except units ADD302, ADD303 and ADD306 which are 2 days (Total 10 days)