# MODULE SYPNOSIS – WSDip in Advanced Manufacturing

**Course Objective**

This course equips trainees with the skills, knowledge and professional attributes to support manufacturing operations. It focuses on designing and producing components using CAD and advanced technologies, while integrating quality assurance, lean principles, and sustainability to optimise process efficiency.

**Modules Synopsis**

| Computer Aided Design & Additive Manufacturing |
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| On completion of the module, trainees should be able to produce parts and assemblies using CAD, evaluate product designs for ease of manufacturing/assembly and produce additive manufacturing prototypes. |
| **Manufacturing Technologies** |
| On completion of the module, trainees should be able to determine manufacturing processes, produce injection moulded component and produce sheet metal component. |
| **Advanced Machining** |
| On completion of the module, trainees should be able to produce machine-specific codes using CAM, produce CNC machined components and optimise manufacturing processes. |
| **Quality Assurance & Management** |
| On completion of the module, trainees should be able to conduct quality inspections, implement quality assurance practices and implement quality improvement. |
| **Automation & Robotic Systems** |
| On completion of the module, trainees should be able to operate automation and IoT system, articulated robot and autonomous mobile robot. |
| **Smart Manufacturing** |
| On completion of the module, trainees should be able to manage digital manufacturing system, conduct manufacturing data analytics and optimise system performance. |
| **Lean & Sustainable Manufacturing** |
| On completion of the module, trainees should be able to conduct life cycle analysis, implement lean methodologies and execute sustainability initiatives. |
| **Production & Project Management** |

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On completion of the module, trainees should be able  to manage production plans and schedules, manage project plans and schedules and present production status and project outcomes.