

Level 3 Engineering
Technician Standard

Pathway: Machinist



Role profile

Machinists in the Advanced Manufacturing Engineering sector are predominantly involved in highly skilled, complex and precision work, machining components from specialist materials using conventional and/or CNC machine tools such as centre lathes, vertical and horizontal milling machines, horizontal and cylindrical grinding machines, electro discharge machines, single and multi- axis CNC machine tools centres.

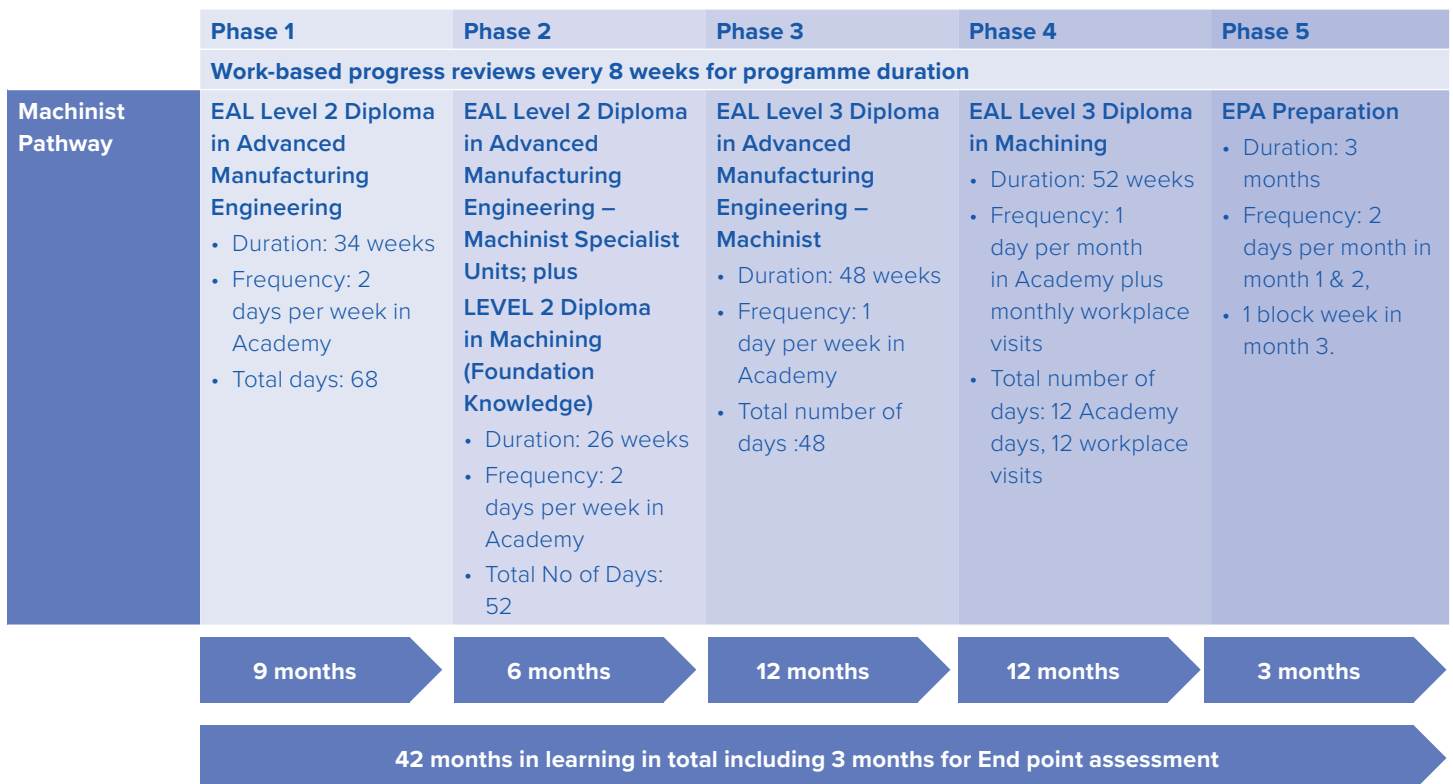
Machinists will be expected to:

- set up, operate and adjust /edit equipment settings as applicable to the machine tool being used
- produce, prove and /or edit programmes when using CNC equipment
- measure and check components being produced and make adjustments to the equipment / programme to ensure components meet the

required specification... During and on completion of the machining operations

- Delivery: Delivered over 42 months (plus) up to 3 months for End Point Assessment (EPA) completion
- Delivery method: Day release to LEMA Academy for classroom and workshop training and assessment plus work-based assessment. Apprentices receive a work-based progress review every 8 weeks

Machinist– The Journey:



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Units



Programme Phase	Content
Phase 1	EAL Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) 601/7179/0A
	Mandatory Units:
	1. Complying with Statutory regulations and organizational safety requirements
	2. Working efficiently and effectively in an engineering environment
	3. Using and communicating technical information
	4. Conducting business improvement activities
	5. Producing components using hand fitting techniques
	6. Producing Mechanical assemblies
Phase 2	EAL Level 2 Diploma in Advanced Manufacturing Engineering Machinist Specialist Pathway
	Units:
	1. Preparing and using milling machines
	2. Preparing and Using CNC Turning Machines
	3. Producing Mechanical Engineering Drawings using a CAD System
	Plus
	EAL LEVEL 2 Diploma in Machining (Foundation Knowledge) 601/9034/6
	Units:
	1. Working in an engineering environment
	2. Engineering Techniques – AME
3. Engineering mathematics and science principles	
4. Fitting and assembly Techniques – AME	
5. Business Improvement Techniques	
6. Principles of turning and milling	
7. Computer aided drawing (CAD)	
Phase 3	EAL Level 3 Diploma in Advanced Manufacturing Engineering – Machinist (Development Knowledge) 601/3033/9
	Units:
	1. Engineering and Environmental Health and safety
	2. Engineering Communications
	3. Properties and Applications of Engineering Materials
	4. Engineering Mathematics
	5. Computer aided design techniques
	6. Advanced Turning
	7. Computer numerical control (CNC) programming/machining
8. Mechanical Engineering Principles	



Other Leaping Men are...



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Units



Phase 4

EAL Level 3 Diploma in Machining (Development Competence) 603/1034/0

Mandatory Units:

1. Complying with Statutory Regulations and Organizational Safety Requirements
2. Using and Interpreting Engineering Data and Documentation
3. Working Efficiently and Effectively in Advanced Manufacturing and Engineering

Conventional Machining Units (one functional pair plus 2 other units):

1. Setting Centre Lathes
2. Machining components using Centre Lathes.
3. Machining Components using Milling Machines
4. Setting Milling Machines
5. Machining Components using Electro-Discharge Machines
6. Setting Electro-Discharge Machines
7. Machining Components using Grinding Machines
8. Setting Grinding Machines

CNC Machining (units 1 and 2 plus one functional pair plus one additional unit):

1. Loading and Proving CNC Machine Tool Programs
2. Carrying Out CNC Machine Tool Programming
3. Setting CNC Turning Machines
4. Machining Components using CNC Turning Machines
5. Setting CNC Milling Machines
6. Machining Components using CNC Milling Machines
7. Setting CNC Grinding Machines
8. Machining Components using CNC Grinding Machines
9. Setting CNC Punching Machines
10. Machining Components using CNC Punching Machines
11. Setting CNC Laser Profiling Machines
12. Machining Components using CNC Laser Profiling Machines
13. Setting CNC Electro-Discharge Machines
14. Machining Components using CNC Electro-Discharge Machines
15. Setting CNC Vertical Boring Machines
16. Machining Components using CNC Vertical Boring Machines
17. Setting CNC Horizontal Boring Machines
18. Machining Components using CNC Horizontal Boring Machines
19. Setting CNC Gear Cutting Machines
20. Machining Components using CNC Gear Cutting Machines
21. Setting CNC Machining Centres
22. Machining Components using CNC Machining Centres
23. Setting CNC Fabrication Equipment
24. Producing Components using CNC Fabrication Equipment

Phase 5

End Point Assessment

- Employer led portfolio based Occupational Competence Validation Interview (Viva)
- Professional Competence Engtech Application



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