



## LEVEL 3 ADVANCED FURNITURE CNC TECHNICIAN

### 1. Introduction

The Advanced Furniture CNC Technician apprenticeship standard has been designed by employers for those that manufacture furniture and furniture components, such as desk lids, doors, casings or legs, using Computer Numerically Controlled (CNC) machinery to perform precision tasks. This includes setting, loading and proving (testing) CNC programmes to produce furniture and/or components, setting up, operating and maintaining CNC furniture production machinery, improving CNC processes to produce furniture efficiently and finding and rectifying faults with furniture production machinery.

### 2. Entry requirements

There are no formal entry requirements for apprentices selecting this apprenticeship standard. Employers and training providers must ensure that apprentices have the potential and opportunity to achieve the apprenticeship standard successfully.

### 3. Qualification details

Regulator	The Office of Qualifications and Examinations Regulation, Ofqual
Type	End-point Assessment
Level	3
Qualification Approval Number	603/7842/6
Operational Start date	1 <sup>st</sup> September 2021
Operational End date	31 <sup>st</sup> August 2024

### 4. Gateway

Apprentices must ensure they have met gateway requirements for this standard before booking end-point assessment. Apprentices are required to achieve the following mandated qualifications for this standard:

- + Level 2 English
- + Level 2 mathematics
- + Apprentice compiled a portfolio of evidence, to support the professional discussion. This is used as an aide memoir during the professional discussion.



Further details on the requirements for gateway can be found in the Gateway Requirements Policy. Evidence of these qualifications must be submitted to Achieve+Partners.

**5. Duration**

Typically, this apprenticeship will take 24 months to complete.

**6. Order of end-point assessment**

The assessment methods can be delivered in any order.

**7. Apprenticeship grading**

The apprenticeship is graded fail, pass, distinction. Apprentices must achieve a minimum of a pass in each of the 3 components.

**8. Re-sits**

An apprentice can re-sit a component of their end-point assessment if they fail. In this instance the apprentice cannot be awarded an overall grade of distinction the final grade will be capped at pass. It is expected that a period of further learning will need to be undertaken if the apprentice has to re-sit any part of the end-point assessment. Achieve+Partners can make exemptions to this ruling should reasons for the fail are deemed to be outside the control of the apprentice.

**9. End-Point Assessment (EPA) Methods**

End-point assessment for this standard includes:

[Multiple Choice test](#)

What are the requirements?	<p>A 45-minute test that has 30 multiple-choice questions that tests the knowledge assigned to this assessment method.</p> <p>The test can be taken in the workplace or at an assessment centre.</p> <p>The test is available online.</p>
Here are the ways we can help	<p>We provide online mock tests to help prepare your apprentice for the knowledge test.</p> <p>We provide an online learning module that supports the preparation for the knowledge test.</p>



Our online testing platform provides a simple solution that supports apprentices undertake their test.  
We provide feedback against the knowledge criteria.

Observation with questioning

The observation takes place over a maximum 3-hour period.  
Questions will be asked after the observation is complete over a maximum 30-minute period.

What are the requirements?  
The independent assessor will ask a minimum of six questions.  
It is carried out in the workplace.  
Apprentices must be observed by an independent assessor completing work activities in their normal workplace, in which they will demonstrate the knowledge, skills and behaviours assigned to this assessment method.

Here are the ways we can help  
We provide a set of tasks that need to be demonstrated during the observation that reflect the activities that must be observed.  
We provide an online learning module that supports the preparation for the practical observation.  
We provide feedback against the grading criteria.

Professional Discussion underpinned by 'Portfolio of evidence'

The professional discussion must last 60-minutes the independent assessor must ask ten open competence-based questions.

What are the requirements?  
The professional discussion can be taken in the workplace or at an assessment centre.  
The questions will assess the knowledge, skills and behaviours assigned to this assessment method.

Here are the ways we can help  
We provide an online learning module that supports the preparation for the professional discussion.  
We provide feedback against the grading criteria.



## 9. Requirements of the standard

Apprentices must demonstrate all of the knowledge, skills and behaviours listed in the standard.

Knowledge statements		Method
K1	tool compensation for the differences in length between the tools assumed during programming and the tools to be used for actual machining.	O
K2	tool data including geometric characteristics, composition and usage	O
K3	parameters of machines including type, function and how to read and set them, safety and guarding of machinery used	O
K4	optimisation for best yield of materials	P
K5	how to set, load, prove (test) and optimise of furniture CNC programmes	O
K6	technical processes, such as capability, awareness of manufacturing procedures, helping to resolve furniture production problems, breakdowns and defining operating procedures	P
K7	tooling and operational process including material technology and furniture manufacturing equipment	P
K8	furniture industry materials and modern and traditional furniture manufacturing methods including wood and timber, manmade composite materials including plywood, MDF (Medium Density Board) and MFC (Melamine Faced Chipboard), veneers, laminates and edging materials, by hand or machinery	KT
K9	how to maintain furniture CNC/NC (Computer Numerically Controlled/Numerically Controlled) machinery	O
K10	acceptable tolerances of items manufactured from furniture specifications for example allowances for deviation from norm and defect criteria	O
K11	process improvement techniques for example DRIVE (Define, Review, Identify, Verify, Execute), process mapping, DMAIC (Define, Measure, Analyse, Improve, Control), Statistical Process Control (SPC) and Simulation	KT
K12	lean manufacturing techniques, for example, Kaizen, Lean, Just in time and 5S	KT
K13	health, safety and environmental management and risk assessment for example Control Of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER), Health And Safety At Work Act (HASAWA), Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) and manual handling	KT



Knowledge statements		Method
K14	Safe Systems of Work, the formal procedures for safe methods and procedures adopted during work activities, for relevant processes, including use and maintenance of machinery used	O
K15	how to produce and maintain jigs and holding devices	P
K16	how to develop and modify furniture CAD drawings in CNC production	P
K17	machine editor software for programme production	P
K18	machine tooling used for example drills, blades or profile cutters	P
K19	machine fault finding techniques and programming fault finding including differences between simple faults which can be rectified and those that required maintenance team for resolution	P
K20	common error codes for furniture CNC machinery used	P
K21	grievance and discipline procedures and conflict management techniques	KT
K22	coaching, mentoring and team development techniques such as the GROW model (Goal, Current Reality, Options (or Obstacles) Will (or Way Forward))	P
K23	where to send products for next process and how to fill production tickets with accurate information	O
K24	measuring devices such as Vernier calipers and height gauges	KT
K25	standard tooling on relevant machinery	P
K26	how to run test pieces to ensure tooling data has been entered correctly	P
K27	where to find relevant furniture specifications and drawings	O
K28	product quality standards you need to meet for furniture products produced	O
Skills statements		Method
S1	set tool compensation data in furniture CNC programmes	O
S2	set tool data and parameters in furniture CNC programmes	O
S3	optimise machinery for the best yield of materials	P
S4	set, load, prove and optimise furniture CNC programmes	O



Skills statements	Method
S5 manage resources effectively including raw materials and time	O
S6 select tooling suitable for use with materials being processed for example different varieties of wood	O
S7 set up and operate furniture CNC/NC (Computer Numerically Controlled/Numerically controlled) machinery using appropriate safety measures and guards	O
S8 maintain furniture CNC/NC machinery within limits of responsibility for example lubricating machinery, checking fluid levels, keeping machinery clean	O
S9 apply improvement techniques to furniture manufacturing processes for example using different tooling, aggregate heads, tandem loading or tandem loading	P
S10 work safely at all times, wearing appropriate PPE, adhering to COSHH records and completing health and safety records and reports	O
S11 follow Safe Systems of work for the relevant machining processes	O
S12 produce and maintain jigs and holding devices to ensure sufficient workpiece vacuum	P
S13 develop and modify furniture CAD drawings to suit CNC processes	P
S14 read and interpret furniture specifications and drawings	O
S15 use editor software to modify or create furniture CNC programmes	P
S16 rectify simple machine faults for example fast running, blunt tooling, burn marks or incorrect tool compensation	P
S17 manage self and others and influence teams to achieve objectives	P
S18 apply coaching, mentoring and team development techniques such as the GROW model	P
S19 develop own skills to improve furniture CNC performance	P
S20 train others to use machinery safely to company standards	P
S21 record information required accurately for example production records	O
S22 set tooling in various holders for example HSK (hollow taper shank), tribos and shrinkfit	O



Skills statements		Method
S23	able to check furniture products meet quality standards and furniture specifications	O
Behaviour statements		Method
B1	thorough and accurate when accomplishing furniture CNC tasks	O
B2	have a safety-first attitude, ensuring the safety of self and others in a furniture CNC machinery environment	O
B3	shows integrity, aims for excellence and manages time effectively	P
B4	strives for improvement in furniture manufacturing processes	P
B5	is professional, demonstrates motivation to succeed and is organised	P
B6	maintain focus and concentration during CNC activities	O
B7	an enquiring mind and be, keen to understand how things work	P
B8	sets an example to others, is fair, consistent and reliable	P
B9	takes personal responsibility for meeting objectives of the team and business	P
B10	be flexible in changing environment and demands	P
B11	demonstrates a mature attitude and has a sense of responsibility.	P
B12	is able to work with minimal supervision	P

### Key

- KT Multiple choice test
- O Observation with questioning
- P Professional discussion supported by portfolio of evidence