# Unit 680 Producing wood and wood-based products using Computer Numerically Controlled/Numerically Controlled (CNC/NC) machinery in the workplace

**Level:** 2

**Unit aim:**
This unit aims to provide you with the necessary skills and knowledge for:

- interpreting information
- adopting safe and healthy working practices
- selecting materials, components and equipment
- preparing, setting up, operating and maintaining CNC/NC machinery to produce wood and wood-based products

*PER – Portfolio evidence reference SO – Site observation OQ – Oral question WQ – Written question WT – Witness testimony
PS – Product supplementary PD – Professional discussion

**Assessment criteria that are practical activities are highlighted in bold.**

| 1. Interpret the given information relating to the work and resources when producing wood and wood-based products using Computer Numerically Controlled/Numerically Controlled (CNC/NC) machinery. | | | | | | | |
|---|---|---|---|---|---|---|---|
| **You must be able to:** | *PER | SO | OQ | WQ | WT | PS | PD |
| 1.1 **interpret and extract relevant information from:** | | | | | | | |
| a. **drawings** | | | | | | | |
| b. **specifications** | | | | | | | |
| c. **schedules** | | | | | | | |
| d. **cutting lists** | | | | | | | |
| e. **risk assessments** | | | | | | | |

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| f. **manufacturers' information** | | | | | | | |
| 1.2 **comply with information and/or instructions derived from risk assessments and method statement** | | | | | | | |
| 1.3 state the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented. | | | | | | | |
| 1.4 describe different types of information, their source and how they are interpreted in relation to: | | | | | | | |
| a. drawings | | | | | | | |
| b. specifications | | | | | | | |
| c. schedules | | | | | | | |
| d. cutting lists | | | | | | | |
| e. risk assessments | | | | | | | |
| f. manufacturers' information and legislation governing wood machining | | | | | | | |

| 2. Know how to comply with relevant legislation and official guidance when producing wood and wood-based products using Computer Numerically Controlled/Numerically Controlled (CNC/NC) machinery. | | | | | | | |
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| You must be able to: | *PER | SO | OQ | WQ | WT | PS | PD |
| 2.1 describe your responsibilities under current legislation and official guidance whilst working: | | | | | | | |
| a. in the workplace | | | | | | | |
| b. with tools | | | | | | | |
| c. tooling and equipment | | | | | | | |
| d. with materials and substances | | | | | | | |
| e. with movement of materials and by manual and mechanical lifting. | | | | | | | |

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| 2.2 describe the organisational security procedures for tools, equipment and personal belongings in relation to: | | | | | | | |
| a. site | | | | | | | |
| b. workplace | | | | | | | |
| c. company | | | | | | | |
| d. operative | | | | | | | |
| 2.3 state what the accident reporting procedures are and who is responsible for making reports | | | | | | | |

| 3. Maintain safe working practices when producing wood and wood-based products using Computer Numerically Controlled/Numerically Controlled (CNC/NC) machinery. | | | | | | | |
|---|---|---|---|---|---|---|---|
| You must be able to: | *PER | SO | OQ | WQ | WT | PS | PD |
| 3.1 **use personal protective equipment (PPE) safely to carry out the activity in accordance with all current legislation and approved Codes of Practice when producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery** | | | | | | | |
| 3.2 explain why and when personal protective equipment (PPE) should be used, relating to producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery, and the types, purpose and limitations of each type | | | | | | | |
| 3.3 state how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with: | | | | | | | |
| a. fires | | | | | | | |
| b. spillages | | | | | | | |
| c. injuries | | | | | | | |
| d. accidents | | | | | | | |
| e. other task-related activities. | | | | | | | |

| 4. Select the required quantity and quality of resources for the methods of work to produce wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery. | | | | | | | |
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| You must be able to: | *PER | SO | OQ | WQ | WT | PS | PD |
| 4.1 describe the characteristics, quality, uses, limitations and defects associated with the resources in relation to: | | | | | | | |
| a. CNC machinery | | | | | | | |
| b. NC machinery | | | | | | | |
| c. wood materials | | | | | | | |
| d. wood-based materials | | | | | | | |
| e. lubricants | | | | | | | |
| f. hand tools and ancillary equipment | | | | | | | |
| 4.2 select resources associated with own work in relation to: | | | | | | | |
| a. materials | | | | | | | |
| b. components | | | | | | | |
| c. tools | | | | | | | |
| d. tooling and equipment | | | | | | | |
| e. dimensional control aids as appropriate | | | | | | | |
| 4.3 state how the resources should be used correctly, how problems associated with the resources are reported and how the organisational procedures are used | | | | | | | |
| 4.4 outline potential hazards associated with the resources and method of work | | | | | | | |
| 4.5 describe how to calculate: | | | | | | | |
| a. quantity | | | | | | | |

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| b. length | | | | | | | |
| c. area | | | | | | | |
| d. wastage associated with the method/procedure to produce wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery. | | | | | | | |

| 5. Minimise the risk of damage to the work and surrounding area when producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery. | | | | | | | |
|---|---|---|---|---|---|---|---|
| You must be able to: | *PER | SO | OQ | WQ | WT | PS | PD |
| 5.1 **protect the work, equipment and its surrounding area from damage** | | | | | | | |
| 5.2 **minimise damage and maintain a clean work space** | | | | | | | |
| 5.3 describe how to protect work from damage and the purpose of protection in relation to: | | | | | | | |
| a. general workplace activities | | | | | | | |
| b. other occupations | | | | | | | |
| 5.4 remove waste in accordance with legislation | | | | | | | |
| 5.5 state why the disposal of waste should be carried out in relation to the work. | | | | | | | |

| 6. Complete the work within the allocated time when producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery. | | | | | | | |
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| You must be able to: | *PER | SO | OQ | WQ | WT | PS | PD |
| 6.1 **demonstrate completion of the work within the allocated time** | | | | | | | |
| 6.2 state the purpose of the work programme and explain why deadlines should be kept in relation to: | | | | | | | |
| a. types of progress charts, estimated times and deadlines | | | | | | | |
| b. organisational procedures for reporting circumstances which will affect the work programme. | | | | | | | |

| 7. Comply with the given contract information to produce wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery to the required specification. | | | | | | | |
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| You must be able to: | *PER | SO | OQ | WQ | WT | PS | PD |
| 7.1 **demonstrate the following work skills when producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery:** | | | | | | | |
| a. **measuring** | | | | | | | |
| b. **marking out** | | | | | | | |
| c. **adjusting** | | | | | | | |
| d. **fitting** | | | | | | | |
| e. **finishing** | | | | | | | |
| f. **positioning** | | | | | | | |
| g. **securing** | | | | | | | |
| 7.2 **prepare, set up, operate and maintain the following CNC/NC machines (one from list A or two from list B) to produce wood and wood- based products to given working instructions:** | | | | | | | |
| **List A:** | | | | | | | |
| a. **high-speed router** | | | | | | | |
| b. **window centre** | | | | | | | |
| **List B:** | | | | | | | |
| a. **single-end tenoner** | | | | | | | |
| b. **double-end tenoner** | | | | | | | |
| c. **panel saw** | | | | | | | |
| d. **morticing machines** | | | | | | | |
| e. **lathe** | | | | | | | |

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|---|---|---|---|---|---|---|---|
| f. **four-sided planer** | | | | | | | |
| g. **sanding machine** | | | | | | | |
| h. **boring machine** | | | | | | | |
| i. **shaping machine** | | | | | | | |
| j. **edge bander** | | | | | | | |
| k. **spindle moulder** | | | | | | | |
| l. **beam saw** | | | | | | | |
| 7.3 **set up and change appropriate tooling to meet the requirements** | | | | | | | |
| 7.4 describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to rectify them, to: | | | | | | | |
| a. prepare and set up the CNC/NC machinery | | | | | | | |
| b. operate the CNC/NC machinery | | | | | | | |
| c. maintain the CNC/NC machinery | | | | | | | |
| d. identify the compatibility of materials with machines | | | | | | | |
| e. identify how damage to materials and machines can be avoided | | | | | | | |
| f. identify the correct use of lubricants | | | | | | | |
| g. identify the relevant dimensional control aids and their uses | | | | | | | |
| h. identify and report defects and discrepancies in materials and machines | | | | | | | |
| i. set up and change appropriate tooling | | | | | | | |
| j. identify the types and suitability of tooling | | | | | | | |
| k. identify the scope and limitations of the machine | | | | | | | |

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|---|---|---|---|---|---|---|---|
| l. select the appropriate machine for the work to be carried out | | | | | | | |
| m. use hand tools, power tools and equipment | | | | | | | |
| 7.5 **safely use and store hand tools and ancillary equipment.** | | | | | | | |
| 7.6 state the needs of other occupations and how to communicate within a team when producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery. | | | | | | | |
| 7.7 describe how to maintain the tools and equipment used when producing wood and wood-based products using computer numerically controlled/numerically controlled (CNC/NC) machinery. | | | | | | | |

# Unit 680 Producing wood and wood-based products using Computer Numerically Controlled/Numerically Controlled (CNC/NC) machinery in the workplace

## Declaration

I confirm that the evidence supplied for the above unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

| | |
|---|---|
| **Candidate name:** | |
| **Candidate signature:** | |
| **Date:** | |

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

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| **Assessor name:** | |
| **Assessor signature:** | |
| **Date:** | |

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|---|---|
| **IQA name:** | |
| **IQA signature:** | |
| **Date:** | |