

Title	Explain computerised manufacturing processes used in the marine or composite industry		
Level	4	Credits	3

Purpose	People credited with this unit standard are able to explain CNC technologies that may be used in the marine or composite industry and explain the application of CNC and CAM technologies in the marine or composite industry.
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Classification	Boating Industries > Boatbuilding
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Available grade	Achieved
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Guidance information

Definitions

CAD refers to Computer Aided Design using computer drawing software.

CAM refers to Computer Aided Manufacture software and machines that enable the CAD drawing to be converted to G-code format and cut components.

CNC refers to Computer Numerical Control, refers specifically to a computer machine controller that reads G-code instructions (usually derived from CAD software) that drives the machine tool.

2D refers to two dimensional with an x and y axis.

3D refers to three dimensional with an x, y, and z axis.

I/O refers to input/output.

Tool head refers to workpiece head that cuts, drills, welds, or otherwise interacts with the product being manufactured.

Outcomes and performance criteria

Outcome 1

Explain CNC technologies that may be used in the marine or composite industry.

Performance criteria

1.1 CNC tool head types are explained in terms of tip technology.

Range includes – water jet, plasma, laser, knife, router, drill, mill, welding.

1.2 CNC machine configuration options are explained in terms of tool control configuration.

Range includes – gantry, milling machine, arm, robots.

1.3 CNC milling axis' options are explained in terms of range of control of the CNC head piece.

1.4 CNC machine control options are explained in terms of I/O type.

Outcome 2

Explain the application of CNC and CAM technologies used in the marine or composites industry.

Performance criteria

2.1 2D boatbuilding applications are described in terms of machine type, axis head and operation, set-up, tool head type, and efficiency.

Range evidence of three applications is required.

2.2 3D boatbuilding applications are described in terms of machine type, axis head and operation, set-up, tool head type, and efficiency.

Range evidence of three applications is required.

Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 November 2008	31 December 2020
Review	2	31 May 2018	N/A

Consent and Moderation Requirements (CMR) reference	0136
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the NZ Marine and Composites ITO training@nzmarine.com if you wish to suggest changes to the content of this unit standard.