



BIMWERX 
A DIGITAL TECHNOLOGY COMPANY



Academy

AUTOCAD AND REVIT 2020 LEVEL 1 ALIGNMENT WITH NZQA AND ANZ REGISTERED UNIT STANDARDS

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Overview

The **AutoCAD 2020 Level 1 and Revit 2020 Level 1** courses were designed with the **NZQA** unit standards in mind.

These courses are aimed at:

- Secondary School Learners (NCEA 1 – 3)
- University / Tertiary School Learners NZQA Level 1 – 4 and beyond
- Early Career Professionals
- Technical professionals looking to expand skillset

Possible career opportunities with this skillset include (among others):

- Architectural CAD Technician
- Civil / Structural Engineering CAD Technician
- Mechanical CAD Technician

These skillsets will also contribute a great deal to further studies in the above professional industries.

Alignment with Registered Unit Standards

The BIMWERX Academy courses consists of a number of modules. Each module is followed by a short **comprehension test**. At the end of the course, Learners are required to complete a **practical assignment**, which is reviewed by the Course Coach using a score sheet. Detailed comprehension **test results and assessment feedback** is provided to the Learner. All of which is deemed sufficient **evidence for a Portfolio of Evidence** against the **unit standards** on the following pages.

In particular, we recommend using these courses as a supporting media for **Design and Visual Communication** 2020 Levels 1, 2 and 3 – which makes specific reference to **CAD software** such as **AutoCAD** and **Revit** (among other courses in our courses collection).

The **AutoCAD 2020 Level 1 (2D Drafting)** course consists of the following modules:

1. Introduction
2. User Interface
3. ModelSpace and PaperSpace
4. Basic Drawing Elements
5. Modify Existing Elements
6. Layers
7. Units and Scales
8. Annotation
9. Blocks
10. Publish a Drawing

While the **Revit 2020 Level 1 (3D Modelling)** course cover the following:

1. Introduction
2. Navigate the UI
3. Model Setup
4. Loadable Families and System Families
5. Create Basic Model Elements
6. Annotate the Project
7. Link Additional Models
8. Create Views and Sheets
9. Publish Drawings and Models

This is followed by a practical assignment that requires the drawing of an Architectural exercise using AutoCAD – complete with drawing objects, drawing management, modification, annotation, scaling, attribute manipulation, print setup and publication.

Level 1 Design and Visual Communication 2020

Overview	
Level	1
Credits	3 + 3 + 3
Criteria	Instrumental drawings may include computer-generated drawings. Evidence for Design and Visual Communication 91063 must be in the form of freehand sketching, and digitally enhanced imaging must not be used.
Achievement Standards	
Standard	Level of coverage in this course
91603 - Produce freehand sketches that communicate design ideas	Not covered
91064 - Produce instrumental, multi-view orthographic drawings that communicate technical features of design ideas	Fully supported
91065 - Produce instrumental paraline drawings to communicate design ideas	Fully supported

Level 2 Design and Visual Communication 2020

Overview	
Level	2
Credits	3 + 4 + 3
Criteria	For Achievement Standards 91338 and 91339, instrumental drawings may be computer-generated drawings of their own design.
Achievement Standards	
Standard	Level of coverage in this course
91337 - Use visual communication techniques to generate design ideas	Not covered
91338 - Produce working drawings to communicate technical details of a design	Fully supported
91339 - Produce instrumental perspective projection drawings to communicate design ideas	Fully supported

Level 3 Design and Visual Communication 2020

Overview	
Level	3
Credits	4 + 6
Criteria	For each standard, a candidate may submit a portfolio of work using a variety of media in any form, and up to a maximum size of A3 (297 × 420 mm). Larger pages must be folded to A3 size.
Achievement Standards	
Standard	Level of coverage in this course
91627 - Initiate design ideas through exploration	Partially Supported
91631 - Produce working drawings to communicate production details for a complex design	Fully supported

2433 Version 8 - Produce engineering component drawings using CAD software

Overview	
Level	2
Credits	6
Purpose	People credited with this unit standard are able to: prepare CAD environment; create drawing entities; edit entities and attributes; produce CAD engineering component drawing file output; and confirm output compliance.
Outcomes	
Outcome	Level of coverage in this course
Prepare CAD environment to meet component drawing requirements	Fully covered
Create a minimum of five different drawing entities	Fully covered
Edit entities and attributes to meet job specifications	Fully covered
Produce CAD engineering component drawing file output in accordance with workplace procedures or accepted industry practice	Fully covered
Confirm output compliance	Fully covered

20802 Version 4 - Produce detailed two-dimensional engineering drawings using CAD software under supervision

Overview	
Level	3
Credits	6
Purpose	People credited with this unit standard are, under supervision, able to: determine drawing requirements; determine tolerances and dimensions to produce drawings; produce and confirm two-dimensional (2D) engineering drawings using CAD software and follow drawing office procedures.
Outcomes	
Outcome	Level of coverage in this course
Determine drawing requirements under supervision	Mostly covered, supplementary class exercises required to fulfill the assessment criteria
Determine tolerances and dimensions for drawings to meet job specifications under supervision	Fully covered
Produce detailed two-dimensional engineering drawings using CAD software under supervision.	Mostly covered, supplementary class exercises required to fulfill the assessment criteria
Confirm detailed two-dimensional engineering drawings under supervision	Partially covered, additional exercises and content required to fulfill assessment criteria
Follow drawing office procedures under supervision	Not covered, additional exercises and content required to fulfill assessment criteria

20804 Version 4 - Produce advanced two-dimensional engineering drawings using CAD software

Overview	
Level	4
Credits	8
Purpose	People credited with this unit standard are able to: determine drawing requirements; perform tolerance calculations for drawings; produce and verify advanced two-dimensional (2D) engineering drawings using CAD software; and follow drawing office procedures.
Outcomes	
Outcome	Level of coverage in this course
Determine drawing requirements	Mostly covered, supplementary class exercises required to fulfill the assessment criteria
Perform tolerance calculations for drawings	Partially covered, additional exercises and content required to fulfill assessment criteria
Produce advanced two-dimensional engineering drawings using CAD software to meet product construction requirements	Mostly covered, supplementary class exercises required to fulfill the assessment criteria
Verify advanced two-dimensional engineering drawings	Not covered, additional exercises and content required to fulfill assessment criteria
Follow drawing office procedures	Not covered, additional exercises and content required to fulfill assessment criteria

AS91631 Version 3 - Produce working drawings to communicate production details for a complex design (Achievement Standard)

Overview	
Level	3
Credits	6
Purpose	This achievement standard involves producing working drawings to communicate production details for a complex design.
Outcomes	
Outcome	Level of coverage in this course
Produce working drawings to communicate production details for a complex design	Fully covered
Working drawings to communicate production details are a set of related 2D and 3D (and/or 4D) drawings and/or models that show exterior and interior detail of the components and information related to the construction and assembly of the complex design	Partially covered, additional exercises and content required to fulfill assessment criteria
A complex design refers to a spatial or product design with multiple components. The production details to be communicated about the complex design must be decided by the students	Partially covered, additional exercises and content required to fulfill assessment criteria
Conventions associated with drawing define such things as: line types (eg construction lines, outlines, and section lines), drawing and text layout, and dimensioning. Conventions include those which are commonly applied within a community of practice eg engineering (eg SAA/SNZ HB1:1994), or architecture – building and landscaping (eg NZS/AS 1100.101:1992 Technical drawing – General principles; NZS/AS 1100.301:1985 Technical drawing – Architectural drawing)	Partially covered, additional exercises and content required to fulfill assessment criteria

Conclusion

The AutoCAD 2020 Level 1 course may be used for additional and future unit standards, in addition to the registered unit standards above.

Comprehension tests and assignment results are provided in such a format that it complies with the requirements of a PoE, as sufficient evidence of competency against various unit standards and outcomes.

Our courses are focused on outcomes and the ability to perform a task in a practical manner rather than “textbook” knowledge alone.

Our courses are actively being used by Universities and Secondary Schools in Auckland. We hope to extend this adoption to a national level.

BIMWERX is a recognized New Zealand registered company and our certification adds additional value to Learners, providing a solid foundation and reward for learning material that ensures a desirable future in this field of expertise.

Feel free to contact Chris Vorster, by email at chris@bimwerx.nz or by phone at +64 21 114 0942, should you require any additional information regarding this document.

Sincerely,



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