



Australian Government

RII50520 Diploma of Civil Construction Design

Release: 2

RII50520 Diploma of Civil Construction Design

Modification History

| Release | Comments |
|-----------|--|
| Release 2 | This version was released with RII Resources and Infrastructure Training Package version 7.0. Version created to fix typographical and/or unit grid errors. |
| Release 1 | This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0. |

Qualification Description

This qualification reflects the role of individuals working as designers or design paraprofessionals who support professional engineers. They perform tasks involving a high level of autonomy and requiring the application of significant judgement in planning and determining the selection of equipment/roles/techniques for themselves and others. They are required to develop site specific work designs to ensure the implementation of the client's site requirements. They demonstrate the application of a broad range of technical, managerial, coordination and planning skills.

Licensing, legislative, regulatory or certification considerations

Licensing, legislative and certification requirements that apply to this qualification can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the qualification.

Entry Requirements

Nil

Packaging Rules

The following table provides the packaging rules for this qualification, followed by the list of relevant units of competency.

Total number of units = 20

20 elective units, of which:

- at least two (2) must be chosen from Group A
- at least two (2) must be chosen from Group B
- at least four (4) must be chosen from Group C
- at least four (4) must be chosen from Group D

- no more than three (3) units may be chosen from elsewhere within this training package, or from another endorsed training package, or from an accredited course.

All elective units selected from outside this qualification must reflect current occupational and learning outcomes of this AQF qualification level.

There are prerequisites to imported units listed in this qualification with guidelines for unit selection of prerequisites outlined at the end of this section. Where a unit is imported all prerequisites specified must be complied with and the combined choice of imported elective units and/or their prerequisites must not compromise the AQF alignment of this qualification. Refer to RII Companion Volume Implementation Guide Pathways Section for further guidance.

| <i>Unit code</i> | <i>Unit title</i> |
|------------------|--|
| Group A | |
| BSBINS501 | Implement information and knowledge management systems |
| BSBOPS505 | Manage organisational customer service |
| BSBPEF501 | Manage personal and professional development |
| BSBPMG531 | Manage project time |
| BSBPMG532 | Manage project quality |
| BSBPMG536 | Manage project risk |
| BSBPMG537 | Manage project procurement |
| BSBSTR601 | Manage innovation and continuous improvement |
| BSBTWK502 | Manage team effectiveness |
| Group B | |
| MEM30031A | Operate computer-aided design (CAD) system to produce basic drawing elements |
| MEM30032A | Produce basic engineering drawings |
| MEM30033A* | Use computer-aided design (CAD) to create and display 3-D models |
| Group C | |
| RIICWD501E | Prepare detailed design of foundations |
| RIICWD502E | Prepare detailed design of lighting |
| RIICWD504E | Prepare detailed design of environmental controls |
| RIICWD505E | Prepare detailed design of landscaping |
| RIICWD506E | Prepare detailed design of canals |
| RIICWD507D | Prepare detailed geotechnical design |

| <i>Unit code</i> | <i>Unit title</i> |
|------------------|--|
| RIICWD508E | Prepare detailed design of rural roads |
| RIICWD509E | Prepare detailed design of urban roads |
| RIICWD510E | Prepare detailed design of busways |
| RIICWD511E | Prepare detailed design of sub-divisions |
| RIICWD512E | Prepare detailed design of motorways and interchanges |
| RIICWD513E | Prepare detailed design of rail civil infrastructure |
| RIICWD514E | Prepare detailed design of dams |
| RIICWD515E | Prepare detailed design of airfield civil works |
| RIICWD516E | Prepare detailed design of bicycle ways |
| RIICWD517E | Prepare detailed design of industrial hardstands |
| RIICWD518E | Prepare detailed design of open car parks |
| RIICWD519E | Prepare detailed design of intermodal facilities civil works |
| RIICWD520E | Prepare detailed design of rigid pavements |
| RIICWD521E | Prepare detailed design of flexible pavements |
| RIICWD522E | Prepare stabilised material mix design |
| RIICWD523E | Prepare asphalt mix design |
| RIICWD524E | Prepare design of spray seal surfacing |
| RIICWD525E | Select pavement surfacing |
| RIICWD526E | Prepare detailed traffic analysis |
| RIICWD527E | Prepare detailed design of traffic signals |
| RIICWD528E | Prepare detailed design of traffic management systems |
| RIICWD529E | Prepare detailed design of underground services |
| RIICWD530E | Prepare detailed design of surface drainage |
| RIICWD531E | Prepare detailed design of subsurface drainage |
| RIICWD532E | Prepare detailed design of tunnels |
| RIICWD533E | Prepare detailed design of civil concrete structures |
| RIICWD534E | Prepare detailed design of civil steel structures |
| RIICWD535E | Prepare detailed design of civil timber structures |
| RIICWD536E | Prepare detailed design of civil masonry, crib and gabion structures |
| RIICWD537E | Prepare detailed design of marine structures civil works |

| <i>Unit code</i> | <i>Unit title</i> |
|------------------|---|
| Group D | |
| CPPSIS5032 | Capture new spatial data |
| CPPSIS5035 | Obtain and validate spatial data |
| CPPSIS5036 | Integrate spatial datasets |
| MEM23004A | Apply technical mathematics |
| MEM23007A* | Apply calculus to engineering tasks |
| MEM30005A* | Calculate force systems within simple beam structures |
| MEM30006A* | Calculate stresses in simple structures |
| MEM30012A | Apply mathematical techniques in a manufacturing engineering or related environment |
| MSL924003** | Process and interpret data |
| MSL925004* | Analyse data and report results |
| MSL954004** | Obtain representative samples in accordance with sampling plan |
| MSL974026** | Perform tests to determine the properties of construction materials |
| MSL975031* | Supervise sampling, inspections and testing at construction sites |
| MSL975044* | Perform complex tests to measure engineering properties of materials |
| RIICRC404E | Inspect and report on pavement condition |
| RIILAT402E | Provide leadership in the supervision of diverse work teams |
| RIIMPO402D | Apply the principles of earthworks construction |

*Note the following prerequisite unit requirements:

| UNIT IN THIS QUALIFICATION | PREREQUISITE UNIT(S) |
|--|---|
| MEM23007A Apply calculus to engineering tasks | <ul style="list-style-type: none"> MEM23004A Apply technical mathematics |
| MEM30005A Calculate force systems within simple beam structures | <ul style="list-style-type: none"> MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment |
| MEM30006A Calculate stresses in simple structures | <ul style="list-style-type: none"> MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment |
| MEM30033A Use computer-aided design (CAD) to create and display 3-D models | <ul style="list-style-type: none"> MEM30031A Operate computer-aided design (CAD) system to produce basic drawing elements |
| MSL925004 Analyse data and report results | <ul style="list-style-type: none"> MSL924003 Process and interpret data |

| UNIT IN THIS QUALIFICATION | PREREQUISITE UNIT(S) |
|--|---|
| MSL974026 Perform tests to determine the properties of construction materials | <ul style="list-style-type: none"> • MSL973022 Conduct laboratory-based acceptance tests for construction materials |
| MSL975031 Supervise sampling, inspections and testing at construction sites | <ul style="list-style-type: none"> • MSL954004 Obtain representative samples in accordance with sampling plan • MSL973021 Conduct field-based acceptance tests for construction materials |
| MSL975044 Perform complex tests to measure engineering properties of materials | <ul style="list-style-type: none"> • MSL973022 Conduct laboratory-based acceptance tests for construction materials • MSL974026 Perform tests to determine the properties of construction materials |

**This unit is a prerequisite to an MSL unit. Please refer to the prerequisite table above. This unit is only to be selected when the MSL unit is one of the Group D elective units chosen and in the event that the learner does not already hold this prerequisite unit or its equivalent. The selection of this unit must not compromise the AQF alignment of this qualification.

Qualification Mapping Information

Supersedes and is equivalent to RII50515 Diploma of Civil Construction Design.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>