



Australian Government

RII50509 Diploma of Civil Construction Design

Release 3

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Modification History

Not applicable.

Description

The Diploma of Civil Construction Design reflects the role of personnel working as designers or design para-professionals 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.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

The following table includes a summary of the employability skills as identified by the resources and infrastructure industry for this qualification. The table should be interpreted in conjunction with the detailed requirements of each unit of competency packaged in this qualification. The outcomes required here are broad industry requirements that may vary depending on packaging options.

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none"> • provide clear and direct feedback • listen carefully to instructions and information • read and interpret project plans and safety signs • calculate basic weights, distances and volumes • complete accurate work plans, technical reports, risk assessments, etc • negotiate solutions to customer and workplace based issues • negotiate project details with clients • network with other professionals working in the same field
Teamwork	<ul style="list-style-type: none"> • plan and lead team performance and operations • coordinate project activities and timelines with clients • work cooperatively with people of different ages, gender, race, religion or political persuasion • provide feedback and advice to staff • lead site-wide planning and coordination activities
Problem-solving	<ul style="list-style-type: none"> • re-allocate staff and resources in response to changing weather, site conditions and priorities • manage staff to solve problems and coordinate individual responsibilities and activities • work cooperatively with clients to resolve contract and operational issues • manage the ongoing review and adjustment of operations against performance indicators and project milestones
Initiative and enterprise	<ul style="list-style-type: none"> • act independently to identify potential improvements to working practice and conditions • identify and take steps to resolve risks in the workplace • encourage the exploration and application of innovative approaches to improve on operational performance
Planning and organising	<ul style="list-style-type: none"> • manage and coordinate time and priorities for self and team • identify and obtain appropriate personnel and resources for work • ensure that risks are assessed and appropriate emergency plans are in place • ensure that project planning incorporates the possibility of adapting to future changes

Self-management	<ul style="list-style-type: none">• take responsibility for ensuring team targets and goals are achieved• understand the standard of work expected at the work site• proactively manage team performance• develop trust and confidence in staff and customers
Learning	<ul style="list-style-type: none">• be willing to learn new ways of working• seek information to improve performance from people and workplace documents like policies, procedures etc• understand equipment characteristics, technical capabilities, limitations and procedures• lead change and continuous improvement processes• manage learning and development plans• prepare and lead formal or informal training sessions
Technology	<ul style="list-style-type: none">• apply a range of basic IT skills in monitoring and reporting on systems• operate equipment safely and according to manufacturer and workplace guidelines• use communications technology appropriate to the workplace (email, mobile, radio, etc)• computer technology is used to monitor and communicate project status• use IT to create documents and maintain records of work activities

Packaging Rules

Requirements for completion of the qualification

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

Successful completion of twenty (20) units made up of:

- a minimum of four (4) units from the Group A units listed
- a minimum of two (2) units from the Group B Drafting units listed
- a minimum of four (4) units of competency from the Group C Design units listed
- a minimum of four (4) units of competency from the Group D Technical units listed
- a maximum of two (2) units at Certificate IV, Diploma, or Advanced Diploma level, may come from this, or any other Training Package or accredited course

Units of competency chosen must

- be relevant to the competency requirements for the job function
- reflect the competency profile for the occupation at the enterprise level
- in the case of accredited course units of competency, not duplicate in part or in whole any unit from a Training Package.

Care must be taken to ensure that all prerequisites specified within imported units, or units chosen as electives, are complied with.

Note: The units chosen to satisfy the Diploma of Civil Construction Design must be additional to the units achieved to satisfy the Certificate IV in Civil Construction Design.

Group A units	
<i>Unit code</i>	<i>Unit title</i>
BSBCUS501A	Manage quality customer service
BSBINM501A	Manage an information or knowledge management system
BSBMGT608B	Manage innovation and continuous improvement
BSBPMG503A	Manage project time
BSBPMG505A	Manage project quality
BSBPMG508A	Manage project risk
BSBPMG509A	Manage project procurement
BSBWOR501B	Manage personal work priorities and professional development
BSBWOR502B	Ensure team effectiveness
Group B Drafting units	
<i>Unit code</i>	<i>Unit title</i>

MEM09011B	Apply basic engineering design concepts
MEM30001A	Use computer aided drafting systems to produce basic engineering drawings
MEM30002A	Produce basic engineering graphics
MEM30003A	Produce engineering drawings
MEM30004A	Use CAD to create and display 3D models
Group C Design units	
<i>Unit code</i>	<i>Unit title</i>
RIICWD501A	Prepare detailed design of foundations
RIICWD502A	Prepare detailed design of lighting
RIICWD504A	Prepare detailed design of environmental controls
RIICWD505A	Prepare detailed design of landscaping
RIICWD506A	Prepare detailed design of canals
RIICWD507A	Prepare detailed geotechnical design
RIICWD508A	Prepare detailed design of rural roads
RIICWD509A	Prepare detailed design of urban roads
RIICWD510A	Prepare detailed design of busways
RIICWD511A	Prepare detailed design of sub-divisions
RIICWD512A	Prepare detailed design of motorways and interchanges
RIICWD513A	Prepare detailed design of rail civil infrastructure
RIICWD514A	Prepare detailed design of dams
RIICWD515A	Prepare detailed design of airfield civil works
RIICWD516A	Prepare detailed design of bicycle ways
RIICWD517A	Prepare detailed design of industrial hardstands
RIICWD518A	Prepare detailed design of open car parks
RIICWD519A	Prepare detailed design of inter modal facilities civil works

RIICWD520A	Prepare detailed design of rigid pavements
RIICWD521A	Prepare detailed design of flexible pavements
RIICWD522A	Prepare stabilised material mix design
RIICWD523A	Prepare asphalt mix design
RIICWD524B	Prepare design of spray seal surfacing
RIICWD525B	Select pavement surfacing
RIICWD526A	Prepare detailed traffic analysis
RIICWD527A	Prepare detailed design of traffic signals
RIICWD528A	Prepare detailed design of traffic management systems
RIICWD529A	Prepare detailed design of underground services
RIICWD530A	Prepare detailed design of surface drainage
RIICWD531A	Prepare detailed design of subsurface drainage
RIICWD532A	Prepare detailed design of tunnels
RIICWD533A	Prepare detailed design of civil concrete structures
RIICWD534A	Prepare detailed design of civil steel structures
RIICWD535A	Prepare detailed design of civil timber structures
RIICWD536A	Prepare detailed design of civil masonry, crib and gabion structures
RIICWD537A	Prepare detailed design of marine structures civil works
Group D Technical units	
<i>Unit code</i>	<i>Unit title</i>
MSL925001A	Analyse data and report results
MSL975007A	Supervise earthworks inspection, sampling and testing operations
MSL975016A	Perform complex tests to measure engineering properties of materials
CPPSIS5032A	Capture new spatial data
CPPSIS5035A	Obtain and validate existing spatial data

CPPSIS5036A	Integrate spatial datasets
RIICBS401B	Apply the principles for the asphalt paving and compaction
RIICBS402B	Apply the principles for the application of bituminous sprayed treatment
RIICBS403B	Apply the principles for the application of polymer modified binder
RIICBS404B	Apply the principles for the selection and use of bituminous emulsion
RIICBS405A	Apply the principles for the application of slurry surfacing
RIICBS406A	Apply the principles of pavement profiling using a profiler
RIICBS407A	Apply the principles for the manufacture and delivery of hot mix asphalt
RIICBS408A	Apply the principles for the manufacture of cold mix
RIICBS409A	Apply the principles for the manufacture of polymer modified binders
RIICBS410A	Apply the principles for the manufacture of bituminous emulsion
RIICBS411A	Apply the principles for the manufacture of slurry surfacing
RIICPL401A	Apply the principles for the installation of underground service using open excavation
RIICRC401A	Apply the principles of flexible pavement construction
RIICRC402A	Apply the principles of rigid pavement construction
RIICRC403A	Apply the principles of the stabilisation of materials
RIICRC404A	Inspect and report on pavement condition
RIICSG401A	Apply the principles of civil concrete structures construction
RIICSG402A	Apply the principles of civil steel structures construction
RIICSG403A	Apply the principles of civil timber structures construction
RIICSG404A	Apply the principles of civil masonry, crib and gabion structure construction
RIICTC401A	Apply the principles of tunnel construction
RIICTT401A	Apply the principles for the installation of underground services using trenchless technology
RIICTT402A	Apply the principles for the repair and rehabilitation of underground services

	using trenchless technology
RIIMEX403A	Apply the principles of canal construction
RIIMPO402A	Apply the principles of earthworks construction