NWP60112 Advanced Diploma of Water Engineering Design

Release: 1

NWP60112 Advanced Diploma of Water Engineering Design

Modification History

NWP60112 Release 1:   Primary release.

Description

This qualification covers the competencies required for work in a para-professional design role within the water industry. These roles include work both in and out of the field, and may have a limited supervisory component in field work such as construction and maintenance. The holder of this qualification would generally be responsible for applying mathematical concepts and methods to solve common problems across engineering areas in the water industry, usually under the supervision of a professional engineer.

Electives should reflect the responsibilities of the individual and the job skills required for effective performance. Where a free choice of electives is possible in the qualification packaging rules, electives may also be drawn from other training packages to reflect the work context and career plans of the individual.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Qualification code: NWP60112
Qualification title: Advanced Diploma of Water Engineering Design

EMPLOYABILITY SKILLS	Industry/enterprise requirements for this qualification include the following facets:
Communication	Qualifications at this level cover high-level workplace communication for working at a senior level with internal and external clients, colleagues and other staff. This requires the following performance outcomes: • Preparation of high-level communication, critically analysing and responding to opinions, persuading and influencing others, and reflecting on and honing communication strategies. • Management of sensitive and confidential information including locating, accessing and authenticating information, acquiring, retaining, recalling and communicating information, applying information and protocols, discarding redundant information/version control, dealing with ambiguity change, responding to diversity, including gender and disability, using a range of mathematical language to communicate mathematical information. • Communication approaches include understanding of political sensitivities , regulatory processes and operational frameworks, balancing intellectual debate and action, considering wider organisational issues, using language calculated to appeal emotionally to a particular audience, such as humorous, serious, cajoling, authoritarian, speaking with confidence and authority, covering cultural, ethnic, diversity or equity considerations, selecting a communication style appropriate to the occasion/audience such as consultative, collaborative, assertive, reasonable. • Use interpersonal communication including, applying legislation, regulations and policies relating to communication in the water industry, analysing and using language structures and features that influence the interpretation of spoken communication, interacting responsively, critically and confidently with both familiar and unfamiliar groups on specialised topics in formal and informal workplace situations, speaking with confidence, and listening critically. • Prepare high-level written communication including the preparation of complex, sensitive materials, including preparing for high-level written communication, critically analysing other positions and preparing persuasive written communication. This includes reading and writing at a level to cope with a range of complex and sensitive workplace materials, critically analysing and synthesising information to compose complex written

EMPLOYABILITY SKILLS	Industry/enterprise requirements for this qualification include the following facets:
	documents, researching other pertinent information, such as supporting/opposing position papers, refining content, structure and sequence according to the required purpose of written material, analysing and using language structures and features that influence the interpretation of written communication, using spelling, punctuation and grammar for workplace documents at an experienced level, providing feedback on other people's work in ways suited to the diversity of the workplace, including creation of learning opportunities to improve research/document input, cross-cultural communication requirements.
Teamwork	• Qualifications at this level cover the competency to foster leadership and innovative work practices in others. This requires the following performance outcomes: • Providing a model of innovative practice, organising workgroups to develop innovation and leadership, organising work assignments to facilitate innovation, supporting workgroup to develop leadership and innovation, monitoring innovation and leadership development and providing feedback on innovation and leadership development. • Utilise networks including identifying features of required networks, identifying or establishing network links with key stakeholders and building relationships.
Problem solving	Qualifications at this level cover the development, implementation and review of operational needs and skills in the context of utility services, including monitoring problems in implementing work plans and propose solutions to resolve problems. This requires the following workplace performance outcomes: • Use a range of problem solving techniques including applying legislation, policy and guidelines, using numeracy in selecting and applying mathematical concepts, estimating, checking reasonableness of results, analysing tender requirements, determining proposal methodology, preparing estimates, managing financial and other resources, using literacy for oral and written clarification of issues and for negotiating variations and changes with clients, using required language and style for written submissions, using technical and other vocabulary, networking with community, suppliers and stakeholders, evaluating and reviewing information, responding to diversity, including gender and disability.
Initiative and enterprise	Qualifications at this level cover the effective application of business systems to work in the Water Industry. It includes applying knowledge of linkages between government and other organisations.

EMPLOYABILITY SKILLS	Industry/enterprise requirements for this qualification include the following facets:
	This requires the following performance outcomes: • Providing a model of innovative practice, organising workgroups to develop innovation and leadership, organising work assignments to facilitate innovation, supporting workgroup to develop leadership and innovation, monitoring innovation and leadership development and providing feedback on innovation and leadership development. • Promoting innovation through, providing supportive communication, allowing follow through with ideas, providing enough but not too much guidance and structure, providing training and learning opportunities, encouraging risk taking, providing time and resources.
Planning and organising	Qualifications at this level cover the coordination and management of the development and implementation of work unit plans at both the work unit and individual level to achieve results through planning. It includes providing leadership to the planning activities of the work unit, supervising individual work plans, and coordinating the implementing and evaluating of work plans. This requires the following performance outcomes: • Establish, expand and utilise networks. It includes identifying features of required networks, identifying or establishing network links with key stakeholders and building relationships. • Manage high-level workplace communication for working at a senior level with internal and external clients, colleagues and other staff including preparing for high-level communication, critically analysing and responding to opinions, persuading and influencing others, and reflecting on and honing communication strategies. • Manage compliance with regulatory requirements including assuring legislative compliance, interpreting legislation and evaluating compliance outcomes.
Self management	Qualifications at this level require autonomous management of complex work roles, duties and responsibilities within the limitations of job descriptions, level of authority and delegations and organisational policies and procedures. This requires the following performance outcomes: • Promotion of compliance with legislation in the Water Industry including modelling compliance with legislation and related Water Industry guidelines and procedures and encouraging and assisting others to comply. • Analysis of the social and economic environment that takes into account emerging trends, and current and possible future goals of

EMPLOYABILITY SKILLS	Industry/enterprise requirements for this qualification include the following facets:
	the organisation including maintaining a comprehensive and up-to-date knowledge of the current business environment and reflecting this in decisions, advice and actions taken. • Develop strong working relationships among network members to achieve organisational goals and provide professional support.
Learning	Qualifications at this level cover the skills required to provide mentoring, coaching and performance review for others as well as personal career and skills development. This requires the following performance outcomes: • Promoting and using a range of learning and skills development methods including, action learning, coaching, mentoring, counselling, skills training, modelling.
Technology	Qualifications at this level cover the technology skills required for general government workplaces and services. This requires the following performance outcomes: • Use supplied digital mapping interfaces to access and/or manipulate a range of data for data analysis and presentation. • Use other computer applications for information generation, management, data capture, extraction and analysis, design, storage and security. • Use communication technology including telephone, teleconference, video conference, Internet (online forums). • Select available and apply appropriate equipment and technology to achieve work objectives and organisational goals.

Packaging Rules

9 units of competency are required for this qualification including:

• 5 core units
• 4 elective units

Choose a minimum of 2 elective units from the list below.
Choose the remaining 2 units from either the list below, **or** elsewhere in this Training Package, **or** another endorsed Training Package, **or** Accredited Course.
All elective units selected from outside this qualification must be selected from qualifications aligned to AQF level 5, 6, or 7.
Elective units selected must not duplicate content already covered by other units in this qualification.

Specialisations are possible within this qualification. Details and examples of specialisation rules are included under the Industry Specialisation heading in the Qualification Framework section of this Training Package.

Core	
NWP601	Design a water reticulation scheme
NWP602	Design gravity sewerage systems
NWP604	Manage the construction of pipeline systems
NWP605	Plan sewerage reticulation systems
NWP606	Plan water reticulation systems
Electives	
NWP508A	Apply principles of hydraulics to pipe and channel flow
NWP525B	Implement and manage asset construction and maintenance
NWP603	Design pressure sewerage systems
NWP607	Manage drinking water quality information
NWP608	Design sewerage pumping station systems
NWP609	Manage assets in a water utility
NWP610	Apply statistical methods for quality control and reliability
NWP705A	Provide leadership in hydrometric network planning and water resource management
NWP706A	Review and evaluate water and wastewater sustainability objectives
BSBINN601B	Manage organisational change
BSBMGT605B	Provide leadership across the organisation
BSBMGT608C	Manage innovation and continuous improvement
BSBMGT615A	Contribute to organisation development
BSBRSK501A	Manage risk
MEM30024A	Participate in Quality Assurance Techniques
MSACMT671A	Develop and manage sustainable environmental practices

| PSPOHS602A | Manage workplace safety |