

Course Name:	Vocational Graduate Certificate in Water Quality Management Vocational Graduate Diploma of Water Quality Management
National Course Code:	39204QLD – Certificate 39205QLD – Diploma
Nominal Duration:	39204QLD - 245 hrs Supervised 39205QLD – 485 hrs Supervised 40 hrs Optional Unsupervised
Accreditation Dates	23.08.2006 – 22.08.2011
Course Outcomes:	<p>The courses provide the technical knowledge and opportunity for skill development to enable a graduate to provide advice and consultancy services and to effectively operate and maintain existing and emerging advanced water/wastewater technologies that have resulted from changing community concerns about water quality, environmental impacts, recycling and sustainable practice.</p> <p>They also provide an understanding of the continuing developments in new water technologies to meet the emerging environmental problems and needs caused by water scarcity. Communities require an enhanced technical capacity to meet these new technical challenges, e.g. water sustainability, desalination systems, industrial and domestic water systems, nutrient removal technologies and advanced water disinfection strategies. On successful completion of 39204QLD Vocational Graduate Certificate in Water Quality Management, learners will be able to:</p> <ul style="list-style-type: none"> • provide high level advice on water quality and sustainability technology, in order to meet legislative and regulatory requirements • implement leadership strategies to manage staff and enhance people relationships and use communication strategies to research and deliver a well-supported argument • interpret a technical brief, determine project methodology and resource requirements, establish a project plan, manage the project to a successful conclusion and evaluate the outcome <p>and</p> <ul style="list-style-type: none"> • apply water and wastewater treatment technologies to the assessment, integration and optimisation of systems and select the best cost/benefit solution for a specific situation or problem <p>Or</p> <p>recommend solutions to water quality issues such as sustainable use of water, drinking water safety and quality, water recycling and the effectiveness of water treatment.</p> <p>On successful completion of 39205QLD Vocational Graduate Diploma of Water Quality Management, in addition to the outcomes described above and depending on the electives selected, learners will be able to:</p> <ul style="list-style-type: none"> • review, evaluate and compare membrane separation technologies in order to provide high level technical and planning advice • review and evaluate unconventional industrial/commercial and domestic water and wastewater systems in order to provide high level technical and planning advice • review and evaluate nutrient removal systems in order to provide high level technical and planning advice

- review and evaluate water disinfection systems in order to provide high level technical and planning advice
- identify, research and evaluate a significant current issue related to the water industry.

While some competencies in 39204QLD Vocational Graduate Certificate in Water Quality Management develop skills at AQF level 6, the overall outcome for a learner is consistent with the distinguishing features of a Vocational Graduate Certificate level in accordance with the *Australian Qualifications Framework*.

Competencies within these courses require the learner to:

- demonstrate the self-directed development and achievement of broad and/or specialised areas of knowledge and skills building on prior knowledge and skills
- initiate, analyse, design, plan, execute and evaluate major, broad or specialised technical and/or management functions in highly varied and/or highly specialised contexts
- generate and evaluate ideas through the analysis of information and concepts at an abstract level
- demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills in complex contexts
- demonstrate responsibility and broad ranging accountability for personal outputs
- demonstrate responsibility and broad ranging accountability for the structure, management and output of the work of others and/or functions.

While some competencies in 39205QLD Vocational Graduate Diploma of Water Quality Management develop skills at AQF level 6, the overall outcome for a learner is consistent with the distinguishing features of a Vocational Graduate Diploma level in accordance with the *Australian Qualifications Framework*.

Competencies within these courses require the learner to:

- demonstrate the self-directed development and achievement of broad and/or specialised areas of knowledge and skills building on prior knowledge and skills
- initiate, analyse, design, plan, execute and evaluate major functions either broad and/or highly specialised within highly varied and/or highly specialised contexts
- generate and evaluate complex ideas through the analysis of information and concepts at an abstract level
- demonstrate an expert command of wide-ranging, highly specialised technical, creative or conceptual skills in complex and/or highly specialised or varied contexts
- demonstrate full responsibility and accountability for personal outputs
- demonstrate full responsibility and accountability for all aspects of work of others and functions including planning, budgeting and strategy.

Entry Requirements:	<p>39204QLD Vocational Graduate Certificate in Water Quality Management</p> <p>Learners may enter 39204QLD Vocational Graduate Certificate in Water Quality Management through a number of entry points which demonstrate their potential to undertake study at this level, including:</p> <ul style="list-style-type: none"> • a relevant Advanced Diploma or Diploma (e.g. NWP50101 Diploma of Water Industry Operations) • relevant Certificate IV or Certificate III (e.g. NWP30101 Certificate III in Water Industry Operations) together with significant relevant vocational practice (e.g. in the water industry) • relevant extensive vocational practice (e.g. in the water industry) without formal qualifications • higher education qualification (e.g. Bachelor Degree), often with relevant vocational practice (e.g. in the water industry). 							
	<p>39205QLD Vocational Graduate Diploma of Water Quality Management</p> <p>Learners may enter 39205QLD Vocational Graduate Diploma of Water Quality Management through a number of entry points which demonstrate their potential to undertake study at graduate level, including:</p> <ul style="list-style-type: none"> • a relevant Vocational Graduate Certificate (e.g. 39204QLD Vocational Graduate Certificate in Water Quality Management) or Advanced Diploma or Diploma (e.g. NWP50101 Diploma of Water Industry Operations) • relevant Certificate IV or Certificate III (e.g. NWP30101 Certificate III in Water Industry Operations), together with significant relevant vocational practice (e.g. in the water industry) • relevant extensive vocational practice, without formal qualifications, usually following completion of a Vocational Graduate Certificate • higher education qualification (e.g. Bachelor Degree), often with relevant vocational practice (e.g. in the water industry). <p>Advice on entry competencies</p> <p>Learners should have the following skills on entry to the courses:</p> <ul style="list-style-type: none"> • report writing and referencing • computer literacy • mathematics to Year 10 level. <p>If these skills are not held, they may be achieved through completing units of competency from the Business Services Training Package and the Water Industry Training Package as follows:</p> <table border="1"> <thead> <tr> <th>Skill area</th> <th>Unit of competency</th> </tr> </thead> <tbody> <tr> <td>Report writing and referencing</td> <td>BSBCM405A <i>Analyse and present research information</i></td> </tr> <tr> <td>Computer literacy</td> <td>BSBCM107A <i>Operate a personal computer</i> OR BSBCM213A <i>Produce simple wordprocessed documents</i></td> </tr> <tr> <td>Mathematics</td> <td>NWP206A <i>Perform basic water industry calculations</i></td> </tr> </tbody> </table>	Skill area	Unit of competency	Report writing and referencing	BSBCM405A <i>Analyse and present research information</i>	Computer literacy	BSBCM107A <i>Operate a personal computer</i> OR BSBCM213A <i>Produce simple wordprocessed documents</i>	Mathematics
Skill area	Unit of competency							
Report writing and referencing	BSBCM405A <i>Analyse and present research information</i>							
Computer literacy	BSBCM107A <i>Operate a personal computer</i> OR BSBCM213A <i>Produce simple wordprocessed documents</i>							
Mathematics	NWP206A <i>Perform basic water industry calculations</i>							

Requirements To Receive The Qualification:	<p>To receive 39204QLD Vocational Graduate Certificate in Water Quality Management, learners must complete all three core units of competency and one elective unit of competency.</p> <p>To receive 39205QLD Vocational Graduate Diploma of Water Quality Management, learners must complete all three core units of competency and five elective units of competency.</p>																																																											
Exit Points:	<p>Learners who exit before completion of 39205QLD Vocational Graduate Diploma of Water Quality Management and who have met the requirements of 39204QLD Vocational Graduate Certificate in Water Quality Management are eligible to receive 39204QLD Vocational Graduate Certificate in Water Quality Management.</p> <p>Learners who exit either of the courses prior to completion will receive a Statement of Attainment for those competencies attained.</p>																																																											
Course Structure:	<p>4.1 Course structure</p> <p>39204QLD Vocational Graduate Certificate in Water Quality Management is comprised of:</p> <ul style="list-style-type: none"> • 3 Core units of competency • 1 Elective unit of competency <table border="1" data-bbox="451 909 1409 1312"> <thead> <tr> <th colspan="5">39204QLD Vocational Graduate Certificate in Water Quality Management Core units of competency</th> </tr> <tr> <th>Competency code</th> <th>Competency title</th> <th>Source</th> <th>Pre-requisites</th> <th>Nominal hours (Supervised)</th> </tr> </thead> <tbody> <tr> <td>WQM801A</td> <td>Analyse and review water treatment plant technology</td> <td>CDAC</td> <td>Nil</td> <td>70</td> </tr> <tr> <td>WQM804A</td> <td>Implement leadership and communication strategies</td> <td>CDAC</td> <td>WQM801A</td> <td>60</td> </tr> <tr> <td>PMLORG602B</td> <td>Manage complex projects</td> <td>PML04</td> <td>Nil</td> <td>55</td> </tr> <tr> <td colspan="4">TOTAL CORE HOURS</td> <td>185</td> </tr> </tbody> </table> <table border="1" data-bbox="451 1357 1409 1664"> <thead> <tr> <th colspan="5">39204QLD Vocational Graduate Certificate in Water Quality Management Elective units of competency - select a minimum of one (1)</th> </tr> <tr> <th>Competency code</th> <th>Competency title</th> <th>Source</th> <th>Pre-requisites</th> <th>Nominal hours (Supervised)</th> </tr> </thead> <tbody> <tr> <td>WQM802A</td> <td>Optimise water system management</td> <td>CDAC</td> <td>WQM801A</td> <td>60</td> </tr> <tr> <td>WQM803A</td> <td>Review and evaluate water resource objectives</td> <td>CDAC</td> <td>WQM801A</td> <td>60</td> </tr> </tbody> </table> <table border="1" data-bbox="451 1697 1409 1827"> <thead> <tr> <th colspan="3">Optional Delivery Requirement</th> </tr> <tr> <th>Code</th> <th>Name</th> <th></th> </tr> </thead> <tbody> <tr> <td>VPC40</td> <td>Vocational placement</td> <td>40 hours</td> </tr> </tbody> </table> <p>RTOs that utilise vocational placement as part of their delivery strategy must ensure that a vocational placement scheme application is lodged as required by the <i>Vocational Education, Training and Employment Act 2000</i>.</p>	39204QLD Vocational Graduate Certificate in Water Quality Management Core units of competency					Competency code	Competency title	Source	Pre-requisites	Nominal hours (Supervised)	WQM801A	Analyse and review water treatment plant technology	CDAC	Nil	70	WQM804A	Implement leadership and communication strategies	CDAC	WQM801A	60	PMLORG602B	Manage complex projects	PML04	Nil	55	TOTAL CORE HOURS				185	39204QLD Vocational Graduate Certificate in Water Quality Management Elective units of competency - select a minimum of one (1)					Competency code	Competency title	Source	Pre-requisites	Nominal hours (Supervised)	WQM802A	Optimise water system management	CDAC	WQM801A	60	WQM803A	Review and evaluate water resource objectives	CDAC	WQM801A	60	Optional Delivery Requirement			Code	Name		VPC40	Vocational placement	40 hours
39204QLD Vocational Graduate Certificate in Water Quality Management Core units of competency																																																												
Competency code	Competency title	Source	Pre-requisites	Nominal hours (Supervised)																																																								
WQM801A	Analyse and review water treatment plant technology	CDAC	Nil	70																																																								
WQM804A	Implement leadership and communication strategies	CDAC	WQM801A	60																																																								
PMLORG602B	Manage complex projects	PML04	Nil	55																																																								
TOTAL CORE HOURS				185																																																								
39204QLD Vocational Graduate Certificate in Water Quality Management Elective units of competency - select a minimum of one (1)																																																												
Competency code	Competency title	Source	Pre-requisites	Nominal hours (Supervised)																																																								
WQM802A	Optimise water system management	CDAC	WQM801A	60																																																								
WQM803A	Review and evaluate water resource objectives	CDAC	WQM801A	60																																																								
Optional Delivery Requirement																																																												
Code	Name																																																											
VPC40	Vocational placement	40 hours																																																										

**Course
Structure
cont...**

39205QLD Vocational Graduate Diploma of Water Quality Management is comprised of:

- 3 Core units of competency
- 5 Elective units of competency

39205QLD Vocational Graduate Diploma of Water Quality Management

Core units of competency

Competency code	Competency title	Source	Pre-requisites	Nominal hours (Supervised)
WQM801A	Analyse and review water treatment plant technology	CDAC	Nil	70
WQM804A	Implement leadership and communication strategies	CDAC	WQM801A	60
PMLORG602B	Manage complex projects	PML04	Nil	55
TOTAL CORE HOURS				185

39205QLD Vocational Graduate Diploma of Water Quality Management

Elective units of competency - select a minimum of five (5)

Competency code	Competency title	Source	Pre-requisites	Nominal hours (Supervised)
WQM802A	Optimise water system management	CDAC	WQM801A	60
WQM803A	Review and evaluate water resource objectives	CDAC	WQM801A	60
WQM901A	Review and evaluate membrane separation technology	CDAC	WQM801A	60
WQM902A	Review and evaluate industrial/commercial and domestic water systems	CDAC	WQM801A	60
WQM903A	Develop nutrient reduction strategies	CDAC	WQM801A	60
WQM904A	Develop advanced water disinfection strategies	CDAC	WQM801A	60
WQM905A	Research and evaluate a current issue related to the water industry	CDAC	WQM801A	60

Optional Delivery Requirement

Code	Name	Hours
VPC40	Vocational placement	40 hours

RTOs that utilise vocational placement as part of their delivery strategy must ensure that a vocational placement scheme application is lodged as required by the *Vocational Education, Training and Employment Act 2000*.

Human Resource Requirements:	<p>All RTOs delivering this course must ensure that trainers meet the requirements of Standard 7 “<i>The competence of RTO staff</i>” within the AQTF <i>Standards for Registered Training Organisations</i>.</p> <p>As required for the Disability Standards for Education 2005, Registered Training Organisations must ensure that trainers possess current skills to meet the needs of diverse learners particularly people with a disability. This can be demonstrated through achievement of <i>TAAENV402A Foster and promote an inclusive learning culture</i> or evidence of equivalent skills.</p>
Physical Resources:	<p>All RTOs delivering these courses must have access to the facilities, equipment, training and assessment materials required to provide the training and/or assessment services within its scope of registration and scale of operations, to accommodate client numbers, client needs, delivery methods and assessment requirements (including off-campus and on-line delivery), in accordance with the requirements of Standard 9.4 within the AQTF <i>Standards for Registered Training Organisations</i>.</p> <ul style="list-style-type: none"> • The use of assistive software and equipment to facilitate access to information and learning activities • Access to the Internet in order to research government legislation, policy, standards and guidelines related to the water industry.

SAMPLE