

Master of Water Resources Management Course Schedule 2009-2010

(Note: Not all courses are offered in each mode every semester and are subject to change by the Universities – please check University websites.)

Core Courses										
Core Course name	MODE: Internal (on campus)	MODE: External (off campus)	MODE: Intensive (block mode)	Sem/Term 1 2009 (Study Period 2)	Sem/Term 2 2009 (Study Period 5)	Sem/Term 1 2010 (Study Period 2)	Sem/Term 2 2010 (Study Period 5)			
Global Water Systems I: Natural Water Cycle WRM7000 – Adelaide CIVE5060 – UniSA WARM8450 – Flinders SEN761 – Deakin ENEV21001 - CQU	💧	💧	💧*		💧		💧			
Global Water Systems II: Engineered Water Cycle WRM7002 – Adelaide CIVE5061 – UniSA WARM8470 – Flinders SEN762 – Deakin ENEV21002 - CQU	💧	💧*	💧*	💧		💧				
Water Resources and Society WRM7003 – Adelaide CIVE5062 – UniSA WARM8460 – Flinders SEN763 – Deakin ENEV21004 - CQU	💧	💧	💧*		💧		💧			
Water Resources Planning and Management WRM7004 – Adelaide CIVE5063 – UniSA WARM8480 – Flinders SEN764 – Deakin ENEV21005 - CQU	💧	💧*	💧*	💧		💧				
<p>* Delivery mode offerings are dependent on enrolment numbers and subject to change, keep checking the website for updates. Core courses are available via distance and may become available in intensive mode depending on enrolment numbers.</p> <p>Students enrol in all 4 core courses at their home institution. The core courses are delivered using "Access Grid", a high-technology real-time internet conference facility, whereby all partner universities connect in a virtual lecture theatre. This mode of delivery, whilst still "face to face" in nature, allows the interaction of teacher and students from varying universities.</p> <p>To register interest in core courses via distance or intensive delivery mode, email study@icewarm.com.au.</p>										
Stream 1 – Ecosystem and Catchment Management										
Course name	Course Code	University	Campus	MODE: Internal (on campus)	MODE: External (off campus)	MODE: Intensive (block mode)	Sem/Term 1 2009 (Study Period 2)	Sem/Term 2 2009 (Study Period 5)	Sem/Term 1 2010 (Study Period 2)	Sem/Term 2 2010 (Study Period 5)
Environmental Risk Management <i>(Incompatible with SEV710)</i>	EVST 20003	CQU	N/A		💧		💧		💧	
Water Management 1	EVST 20012	CQU	N/A		💧			💧		💧
Aquatic Ecosystems Management and Rehabilitation	SOE 720	Deakin	N/A	N/A	N/A		N/A		TBA	
Risk and Environmental Sustainability <i>(Incompatible with EVST2003)</i>	SEV 710	Deakin	Geelong	💧	💧			💧		💧
Integrated Catchment Management: Concepts, Principles and Planning	SOE 718	Deakin	Geelong	N/A						

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Integrated Catchment Management: Practical Tools for Assessment and Implementation	SOE 719	Deakin	Geelong	N/A				N/A		
GIS for Environmental Management <i>*Summer Semester</i>	WRM 7021	Adelaide	North Tce	💧		💧				
Freshwater Ecology	WRM 7024	Adelaide	North Tce	💧			💧		💧	
Ecosystems Modelling for Environmental Management <i>*Summer Semester</i>	WRM 7025	Adelaide	North Tce	💧		💧				
Integrated Catchment Management	WRM 7026	Adelaide	Waite	💧				💧		💧
Stream 2 – Management of Water Infrastructure										
Water Resources Engineering	SEN 743	Deakin	Geelong	N/A	N/A		N/A		TBA	
Water Resources Systems Analysis <i>Prerequisite: SEN743</i>	SEN 724	Deakin	Geelong	N/A	N/A			N/A		TBA
Environmental Systems <i>(Incompatible with WRM7013)</i>	SEN 744	Deakin	Geelong	💧	💧			💧		💧
Risk and Environmental Sustainability	SEV 710	Deakin	Geelong	💧	💧			💧		💧
Coastal Engineering Management	SEN 714	Deakin	Geelong	N/A	N/A			N/A		TBA
Environmental Modelling, Management and Design	WRM 7011	Adelaide	North Tce	💧			N/A		TBA	
Water Distribution Systems and Design <i>* Odd years only</i>	WRM 7013	Adelaide	North Tce	💧				💧		
Coastal Engineering and Design	WRM 7014	Adelaide	North Tce	💧				N/A		TBA
GIS for Environmental Management <i>*Summer Semester, incompatible with GEOE5001</i>	WRM 7021	Adelaide	North Tce	💧		💧				
Water Resources Optimisation and Modelling <i>* Odd years only</i>	WRM 7012	Adelaide	North Tce	💧				💧		
Analysis of Rivers and Sediment Transport	WRM 7022	Adelaide	North Tce	💧						TBA
Water Resources Sustainability and Design <i>* Odd years only</i>	WRM 7023	Adelaide	North Tce	💧			💧			
Strategic Asset Management	BUSS 5256	UniSA	City East	💧	💧		💧	💧	💧	
Facilities and Asset Performance	BUIL 5017	UniSA	City East	💧					💧	
Introduction to Geographic Information Systems <i>(Incompatible with WRM7021)</i>	GEOE 5001	UniSA	City East	💧			💧	💧	💧	💧
Facilities Program Management	BUIL 5018	UniSA	City East	💧			💧			
Facilities Design Management (alternative for Facilities Program Management) – <i>check UniSA before enrolling</i>	ARCH 5033	UniSA	TBC							💧
Asset Management Service Delivery	BUIL 5019	UniSA	City East	💧				💧		
Sustainability in Assets and Facilities	BUIL 5020	UniSA	City East	💧				💧		
Engineering Infrastructure Management	BUIL 5022	UniSA	Mawson	💧			TBA	TBA		

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Introduction to Maintenance Engineering	ENMM 20010	CQU	N/A		●		●	●	●	●
Establishing the Maintenance Strategy	ENMM 20011	CQU	N/A		●		●		●	
Maintenance Organisation	ENMM 20012	CQU	N/A		●			●		●
Maintenance Systems and Documentation	ENMM 20013	CQU	N/A		●		●	●	●	●
Auditing Maintenance Systems	ENMM 20015	CQU	N/A		●		●		●	
Stream 3 – Water Quality and Treatment										
Water Treatment Processes	SEN 740	Deakin	Geelong	●	●	●		●		●
Wastewater Treatment Processes <i>(Incompatible with WRM7010)</i>	SEN 741	Deakin	Geelong	●	●	●	●		●	
Water Reclamation and Reuse <i>*Incompatible with SEN740 and SEN741</i>	SEN 745	Deakin	Geelong	●	●	●		●		●
Environmental Systems Design	SEN 711	Deakin	Geelong	N/A	N/A			N/A		TBA
Wastewater Engineering and Design <i>(Incompatible with SEN741)</i>	WRM 7010	Adelaide	North Tce	●			●		TBA	
Environmental Modelling, Management and Design	WRM 7011	Adelaide	North Tce	●					TBA	
Water Distribution Systems and Design <i>(Incompatible with SEN744, odd years only)</i>	WRM 7013	Adelaide	North Tce	●				●		
Advanced Water Quality and Wastewater Management	CIVE 5048	UniSA	Mawson	●			N/A		●	
Water Quality Fundamentals and Processes N	CHEM 5007	UniSA	Mawson	●				●		●
Water Quality Management	CIVE 5067	UniSA	Mawson	●	●			●		●
Water Quality Modelling	CIVE 5066	UniSA	Mawson		●	●	●		●	
Design of Flood and Drainage Systems <i>(*Study Period 6 – Mid Semester Break)</i>	CIVE 5065	UniSA	N/A	●		●		●		●*
Stream 4 - Groundwater Hydrology/ Hydrogeology										
Advanced Groundwater Hydrology A WE OR	WARM 8401	Flinders	Flinders			●	●	●	●	●
Advanced Groundwater Hydrology B WE OR	WARM 8402	Flinders	Flinders			●	●	●	●	●
Advanced Groundwater Hydrology C WE	WARM 8403	Flinders	Flinders			●	●	●	●	●
Hydrochemistry WE	WARM 8452	Flinders	Flinders	●				●		●
CGS National Groundwater School WE	WARM 8404	Flinders	Flinders	●			TBA	TBA	TBA	TBA
Earth Sciences Field Camp 1 WE OR <i>*Even years only</i>	WARM 8422	Flinders	Flinders	●					●	
Earth Sciences Field Camp 2 WE <i>*Odd years only</i>	WARM 8423	Flinders	Flinders	●			●			
Geological Processes WE <i>*Odd years</i>	WARM 8410	Flinders	Flinders	●				●		

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Sedimentary Processes WE <i>*Even years</i>	WARM 8413	Flinders	Flinders	🔵						🔵
Earth Fluid Dynamics and Modelling WE	WARM 8472	Flinders	Flinders	🔵				🔵		
Groundwater and Soil Hydrology WE	WARM 8451	Flinders	Flinders	🔵			🔵			
Surface Water Hydrology WE	WARM 8431	Flinders	Flinders	🔵			🔵			
Global Climate Change and Natural Hazards WE	WARM 8453	Flinders	Flinders	🔵				🔵		
Introduction to Earth Sciences WE	WARM 8411	Flinders	Flinders	🔵			🔵			
Research and Professional Practice in Groundwater Hydrology WE	WARM 8412	Flinders	Flinders	🔵			🔵			
Stream 5 - Irrigation										
Fundamentals of Irrigation	IRR 400	CSU	N/A		🔵		🔵		🔵	
Management of Irrigation Systems	IRR 401	CSU	N/A		🔵		🔵		🔵	
Critical Factors in Irrigation	IRR 402	CSU	N/A		🔵			🔵		🔵
Irrigation Practice	IRR 403	CSU	N/A		🔵			🔵		🔵
Stream 6 – Water Planning										
Freshwater Ecology	WRM 7024	Adelaide	North Tce	🔵			🔵		🔵	
Water Management 1	EVST 20012	CQU	N/A		🔵			🔵		🔵
Water Quality Management	CIVE 5067	UniSA	Mawson	🔵	🔵			🔵		🔵
Groundwater and Soil Hydrology WE	WARM 8451	Flinders	Flinders	🔵			🔵		🔵	
CGS National Groundwater School WE	WARM 8404	Flinders	Flinders	🔵			TBA	TBA	TBA	TBA
Water Systems Modelling for Water Planners	TBA	TBA	TBA	🔵	🔵		🔵		🔵	
Community Engagement and Conflict Resolution	ENEV 22005	CQU	CQU	🔵	🔵		🔵		🔵	
Planning Theory and Practice	TBA	TBA	TBA	🔵	🔵			🔵		🔵
Social and Economic Impact Assessment	TBA	TBA	TBA	🔵	🔵			🔵		🔵
Unstreamed Electives										
Epidemiology of Infectious Diseases	WRM 7015 HO	Adelaide	Teaching hospitals	🔵				🔵		🔵
Biostatistics <i>*Prerequisites: PUB HLTH7008HO Intro. To Biostatistics or equiv. approved by Head of School</i>	WRM 7017 HO	Adelaide	Teaching hospitals	🔵				🔵		🔵
Epidemiological Research Methods <i>*Prerequisites: Intro to Epidemiology or equivalent as approved by Head of School</i>	WRM 7018 HO	Adelaide	Teaching hospitals	🔵				🔵		🔵
Industrial Toxicology	WRM 7020 HO	Adelaide	Teaching hospitals	🔵				🔵		🔵

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Environmental Economics E III	WRM 7027	Adelaide	North Tce	●				●		TBA
Specialised Studies 1 <i>(available following consultation with Course Coordinator)</i>	WRM 7009	Adelaide	North Tce	●			●	●	●	●
Holistic Infrastructure Management * <i>(available following consultation with Course Coordinator)</i>	ENEV 22001	CQU	N/A		●			●*		TBA
Innovative Thinking and Strategies * <i>(available following consultation with Course Coordinator)</i>	ENEV 22002	CQU	N/A		●		●*		TBA	
Environmental and Social Impact Assessment*	EVST 19007	CQU	N/A		●			●		●
Environmental Management*	EVST 19008	CQU	N/A		●		●		●	
Environmental Planning and Economics	ENEV 20005	CQU	N/A		●		●		●	
Waste Minimisation and Cleaner Production	ENEV 20002	CQU	N/A		●			●		●
Seminars in Sustainability	ENVT 5007	UniSA	City East	●			●		●	
Principles of Project Management A	BUSS 5142	UniSA	City East	●	●		●	●	●	
Environmental Impact Assessment	ARCH 4042	UniSA	City East	●				●		●
Special Topic in Groundwater Hydrology	WARM 8414	Flinders	Flinders	●			●	●		
Hydrology and Water Resources Advanced Topics 1 <i>(*Students are required to get Program Director approval prior to enrolment)</i>	CIVE 5036	UniSA	N/A	●		●	●*	●*	●*	●*
The Technological Enterprise	SEB 710	Deakin			●		●		●	
Managing Complex Projects	SEB 712	Deakin	Geelong		●			●		●
Public Health Related Aspects of Drinking Water Quality <i>(to be offered every 18 months subject to interest)</i>	WARM 8490	Flinders	Flinders		●			●		
Other – Research Methods*										
Research Methods	ENEV 23001	CQU	N/A				N/A		TBA	
Research Practice	ENEV 23002	CQU	N/A					N/A		TBA
Research Methodology	SEN 700	Deakin	Geelong	N/A	N/A		N/A	N/A	TBA	TBA
Environmental Research Methods	WARM 8405	Flinders	Flinders	●			●			
Engineering Research Methods	ENGG 5006	UniSA	Mawson	●			●		●	
Engineering Research Practice	EEET 5004	UniSA	Mawson	●			●			
Research Methodology	WRM 7007	Adelaide	North Tce	●			●	●	●	●
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Study Options										
Study Option 1										
Choose another 4 coursework electives from Streams 1-5 (includes Unstreamed Electives)										
Study Option 2										
Complete another 2 coursework electives and a Minor Industry Project										
	Course Code	University	Campus	MODE: Internal (on campus)	MODE: External (off campus)	MODE: Intensive (block mode)	Sem/Term 1 2009 (Study Period 2)	Sem/Term 2 2009 (Study Period 5)	Sem/Term 1 2010 (Study Period 2)	Sem/Term 2 2010 (Study Period 5)
Minor Industry Project	WRM 7005	Adelaide	North Tce	●			●	●	●	●
Engineering Professional Practice 1 OR	SEN 701	Deakin	Geelong	●	●		●	●	●	●
Engineering Professional Practice 2	SEN 702	Deakin	Geelong	●	●		●	●	●	●
TBA	WARM 8XXX	Flinders	Flinders				TBA	TBA	TBA	TBA
Hydrology and Water Resources Project 1 OR <i>(*Students are required to get Program Director approval prior to enrolment)</i>	CIVE 5050	UniSA	Mawson	●			●*	●*	●*	●*
Hydrology and Water Resources Project 2 <i>(*Students are required to get Program Director approval prior to enrolment)</i>	CIVE 5051	UniSA	Mawson	●			●*	●*	●*	●*
Water Resources Management Project A OR	ENEV 23003	CQU	N/A		●		●*	●*	●*	●*
Water Resources Management Project B	ENEV 23004	CQU	N/A		●		●*	●*	●*	●*
Study Option 3*										
Complete Research Project										
Research Project	WRM 7008	Adelaide	North Tce	●			●	●	●	●
Engineering Research 1 AND	SEN 719	Deakin	Geelong	●	●		●	●	●	●
Engineering Research 2	SEN 720	Deakin	Geelong	●	●		●	●	●	●
Groundwater Hydrology Project A AND	WARM 8440A	Flinders	Flinders	●			●	●		
Groundwater Hydrology Project B	WARM 8440B	Flinders	Flinders	●			●	●		
Hydrology and Water Resources Project 1 AND <i>(*Students are required to get Program Director approval prior to enrolment)</i>	CIVE 5050	UniSA	Mawson	●			●*	●*	●*	●*
Hydrology and Water Resources Project 2 <i>(*Students are required to get Program Director approval prior to enrolment)</i>	CIVE 5051	UniSA	Mawson	●			●*	●*	●*	●*
Water Resources Management Research Minor Thesis	ENEV 23005	CQU	N/A		●		●*	●*	●*	●*
Students undertaking Study Option 3 are required to undertake a Research Methods course (see "Other – Research Methods").										

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Study Option 4 Complete Major Industry Project											
Course name	Course Code	University	Campus	MODE: Internal (on campus)	MODE: External (off campus)	MODE: Intensive (block mode)	Sem/Term 1 2009 (Study Period 2)	Sem/Term 2 2009 (Study Period 5)	Sem/Term 1 2010 (Study Period 2)	Sem/Term 2 2010 (Study Period 5)	
Major Industry Project	WRM 7006	Adelaide	North Tce	💧			💧	💧	💧	💧	
Engineering Professional Practice Project 1 AND	SEN 701	Deakin	Geelong	💧	💧		💧	💧	💧	💧	
Engineering Professional Practice Project 2	SEN 702	Deakin	Geelong	💧	💧		💧	💧	💧	💧	
Industry Based Project WRM <i>(*Students are required to get Program Director approval prior to enrolment)</i>	CIVE 5064	UniSA	N/A		💧		💧*	💧*	💧*	💧*	
Water Resources Management Project A AND	ENEV 23003	CQU	N/A		💧		💧*	💧*	💧*	💧*	
Water Resources Management Project B	ENEV 23004	CQU	N/A		💧		💧*	💧*	💧*	💧*	

University/Campus Abbreviations

Adelaide -	University of Adelaide
UniSA -	University of South Australia
	Mawson – Mawson Lakes Campus
	City East – City East Campus
Flinders -	Flinders University of South Australia
Deakin -	Deakin University
	Geelong – Warrn Ponds Geelong Campus
CQU -	Central Queensland University
	Rock – Rockhampton
	Bund - Bundaberg
CSU -	Charles Sturt University (Not an ICE WaRM partner university, but is a teaching university)

Terminology: Delivery Modes

On Campus

Refers to face to face lectures at the home institution and also includes the Access Grid mode of delivery. "On Campus" is the same as "Internal" and "In Person".

Off Campus

Can be interchanged with the terms "External", "Distance" and "Flexible Delivery". Study in the off-campus, or external mode normally does not require attendance at the University. Course materials are mailed out or available on-line and, where necessary, arrangements are made for students to sit for examinations at specified centres accessible from where they live. Off campus delivery may involve online modes of teaching.

Intensive (Block-Mode)

In contrast to weekly face to face lectures, intensive mode involves full-day sessions in a block of time (varies from 3-5 days in total).

Those interested in enrolling in intensive or distance courses should contact ICE WaRM in the first instance by emailing study@icewarm.com.au