

# Integrated Water Catchment Management

<b>Year and Campus:</b>	2015
<b>Coordinator:</b>	Dr Graham Moore, Faculty of Engineering Dr Philip Marren, Faculty of Science
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<b>Overview:</b>	<p>Integrated Water Catchment Management is offered as a major field of study in the Master of Environment degree.</p> <p>With global climate change and more extreme weather conditions, water catchments have never been under more pressure, and professionals with skills in their management are in high demand.</p> <p>Catchment management involves the integration of sound biophysical information with social and economic analysis. This is used to achieve the best outcomes for a catchment's natural resources and the people who live and work there.</p> <p>Students studying this major will look into the functioning of catchments and the constraints to improving catchment management; particularly, how these constraints can be eased.</p> <p>Integrated Water Catchment Management is appropriate for professionals working in soil and water regulation, land management, and conservation in the private and public sectors.</p> <p>The major is suitable for students with a first degree in physical science, life science, social science, engineering, forestry, horticulture or agriculture. Professional geologists, natural resource scientists and managers who wish to gain advanced knowledge of catchment management strategies in urban and rural environments would also benefit from studies in this field.</p> <p>Students can expect to find employment in regulatory agencies, local and state government authorities, environmental consulting companies, and industries concerned with land development, recreation and tourism.</p>
<b>Learning Outcomes:</b>	<p>Students who complete the Master of Environment will have:</p> <ul style="list-style-type: none"> <li># Knowledge to undertake professional practice in environment or sustainability, including: <ul style="list-style-type: none"> <li># Specialised knowledge in an environmental discipline or field of practice, including knowledge of recent developments in this field</li> <li># Knowledge of the cross-disciplinary nature of environmental issues and professional practice to promote sustainable futures</li> <li># Knowledge of research principles and methods applicable to specialist field of environmental inquiry</li> </ul> </li> <li># Skills for collaborative and creative problem solving in environmental practice, including:</li> <li># Demonstrated capacity to:</li> </ul> <p>Upon successful completion of the Integrated Water Catchment Management specialisation, students will be able to:</p> <ul style="list-style-type: none"> <li># Analyse the biophysical, social and economic factors that influence the functioning of water catchments.</li> <li># Propose strategies for improving the functioning of water catchments; and</li> <li># Collaborate with professionals from across disciplines and sectors to contribute to integrated water catchment management</li> </ul>
<b>Structure &amp; Available Subjects:</b>	<p>Students will be required to complete the two core subjects, plus choose three subjects from the compulsory specialisation subject list. Students must also take at least 25 points of subjects from the compulsory capstone subjects – these subjects enable students to</p>

complete an independent project related to professional scholarship or practice in integrated catchment management. Students must also undertake electives to make up the balance of the award. The selection of electives is made in consultation with the Integrated Water Catchment Management major coordinator. A full list of subjects available within this specialisation can be found at [http://environment.unimelb.edu.au/courses/streams/integrated\\_water\\_catchment\\_management](http://environment.unimelb.edu.au/courses/streams/integrated_water_catchment_management) ([http://environment.unimelb.edu.au/courses/streams/integrated\\_water\\_catchment\\_management](http://environment.unimelb.edu.au/courses/streams/integrated_water_catchment_management))

**Subject Options:****Core subjects**

Students must take the following core subjects:

Subject	Study Period Commencement:	Credit Points:
MULT90005 Interdisciplinarity and the Environment	Semester 2	12.50
MULT90004 Sustainability Governance and Leadership	March, July	12.50

**Compulsory Specialisation Subjects**

plus undertake electives to make up the balance of the award. The recommended list of electives includes:

Subject	Study Period Commencement:	Credit Points:
AGRI90066 Soil Science and Management	Semester 1	12.50
CVEN90019 Sustainable Water Resources Systems	Semester 2	12.50
ENEN90028 Monitoring Environmental Impacts	Semester 2	12.50
GEOG90003 Integrated River & Catchment Management	Semester 1	12.50
GEOG90005 Hydrogeology/Environmental Geochemistry	Semester 1	12.50

Students must take at least 25 points from the following capstone experience subjects:

Subject	Study Period Commencement:	Credit Points:
ENST90006 Environmental Research Review (12.5)	Semester 1, Semester 2	12.50
ENST90007 Environmental Research Project (25)	Semester 1, Semester 2	25
ENST90024 Environmental Research Project - 25 Long	Semester 1, Semester 2	12.50
ENST90016 Environmental Research Project (50)	Semester 1, Semester 2	50
ENST70001 Environmental Research Proj (50 Long)	Semester 1, Semester 2	25
ENST90025 Environmental Industry Research (25)	Semester 1, Semester 2	25
ENST90026 Environmental Industry Research: 25 Long	Semester 1, Semester 2	12.50
ENST90020 Environmental Industry Research (50)	Semester 1, Semester 2	50
ENST70002 Environmental Industry Research: 50 Long	Semester 1, Semester 2	25
DEVT90002 Internship in Development	January, Semester 1, Semester 2	12.50
DEVT90008 International Internship in Development	January, Semester 1, Semester 2	25

**Elective subjects**

Students should make up the balance of their award with subjects from the following elective list:

Subject	Study Period Commencement:	Credit Points:
ATOC90002 Climate Affairs	Semester 2	12.50
CHEM90007 Environmental Chemistry	Semester 1	12.50
ECON90016 Environmental Economics and Strategy	Semester 1	12.50
ENEN90031 Quantitative Environmental Modelling	Semester 1	12.50
ENEN90032 Environmental Analysis Tools	Semester 2	12.50
ENST90002 Social Impact Assessment and Evaluation	Semester 2	12.50
ENST90005 Environmental Policy	Semester 2	12.50
EVSC90014 Environmental Risk Assessment	November	12.50
EVSC90015 Environmental Impact Assessment	Semester 1	12.50
FRST90022 Forests and Water	September	12.50
GEOM90005 Remote Sensing	Semester 2	12.50
GEOM90008 Foundations of Spatial Information	Semester 1	12.50
LAWS70068 Environmental Law	September	12.50
LAWS70185 Water Law & Natural Resources Management	May	12.50
NRMT90002 Management of Plant and Animal Invasions	Semester 2	12.50
NRMT90003 Social Research Methods	Semester 1	12.50
POPH90014 Epidemiology 1	Semester 1	12.50
EVSC90017 Global Environmental Change	Semester 1	12.50
EVSC90020 Environmental Modelling	Semester 1	12.50
ENEN90034 Environmental Applied Hydrology	Semester 1	12.50
ERTH90027 Fluvial Geomorphology and Hydrology	Semester 2	12.50
FRST90034 Ecological Restoration	September	12.50
MAST90007 Statistics for Research Workers	July	12.50
ENEN90037 International River Basin Management	July	12.50
MAST90044 Thinking and Reasoning with Data	Semester 1	12.50
GEOG90020 Risk Management and Public Participation	Semester 1	12.50
<b>Related Course(s):</b>	Master of Environment	