



## Recommended Additional Course List 2017

### For students enrolling in the degrees of Masters or PG Diploma in Water Resource Management

For the PG Diploma and for Part I of the Masters degree, students are required to complete the **three core WATR courses** (below), and take **at least a further 30 points/credits from a specified shortlist** (below) of environmental resource management courses to make a total 120 points/credits:

#### WATR PAPERS

Course Code	Course Name	Semester	Points
WATR 401/601	Advanced Water Resources	One	15/20
WATR 402/602	Determinants of Water Availability and Quality	Two	15/20
WATR 403/603	Water Management, Policy and Planning	Two	15/20

#### UC:

Course Code	Course Name	Semester	Points
GEOG 404	Resource & Environmental Management in New Zealand	Two	30
ENVR 410	Concepts and Principles of Environmental Science	One	15
ENVR 411	Case Studies in Environmental Science	Two	15
WATR 405	Research Methods and Communication	One	15

#### LU:

Course Code	Course Name	Semester	Points
LWST 602	Advanced Resource Management and Planning Law	Two	20
MAST 603	Mana Kaitiaki (Maori Resource Management)	Two	20
ERST 621	Principles of Environmental Impact Assessment	Two	20
ERST 630	Environmental Policy and Planning	One	20
ERST 632	Economics in Environmental Policy	One	20
ECON 606	Natural Resource and Energy Economics <i>not offered in 2017</i>	One	20
WATR 605	Research Methods and Communication	One/Two	20

Students can then **elect their remaining courses** either from this shortlist (above) and/or from other existing postgraduate level courses at either the University of Canterbury, or Lincoln University. A list of **the recommended courses** that may be considered, grouped according to the general discipline in which a student has previously graduated (science, management/commerce or engineering) follows.

Final course selection will need to consider the prerequisites required for these courses, and their availability in any particular year\*. This list is not exhaustive and students may also select courses of relevance to water resource management that are not included here. Final course selection will need to be approved by the Director of Waterways Centre as part of your enrolment process, but please feel free to discuss prior to enrolment.

**\* Courses across both Universities can change, and may be unavailable or change semester in any given year. Please check the website of the respective University to confirm a course is being offered.**

## SCIENCE:

### UC:

Course Code	Course Name	Semester	Points
BIOL 425	Freshwater Ecology	One	15
BIOL 490	Aquaculture <i>not offered in 2017</i>	Whole Year	30
BIOL 492	Environmental Microbiology <i>not offered in 2017</i>	Whole Year	30
ENVR 414	Current Issues in Environmental Chemistry	Two	15
GEOG 409	Coasts and Rivers: from natural processes to urban environments	One	30
GISC 403	Cartography and Geovisualisation	Two	15
CHEM 421	Advanced Topics in Chemistry I	Whole year	30
CHEM 422	Advanced Topics in Chemistry II	Whole year	30
GISC 404	Spatial Analysis	One	15
GISC 405	GIS Programming and Databases	One	15
GISC 406	Remote Sensing for Earth Observation	One	15
GISC 413	Geomatic Data Acquisition Techniques	Two	15
GEOL 477	Sediment Transport and Deposition <i>not offered in 2017</i>	Two	15
PHYS 446	Geophysical Fluid Dynamics <i>not offered in 2017</i>	One	15
ENVR 411	Case Studies in Environmental Science	Two	15
ENVR 480	Research Project	Whole year	30

### LU:

Course Code	Course Name	Semester	Points
BIOS 601	Integrated Management of Pastoral Systems <i>not offered in 2017</i>	TBA	20
BIOS 604	Advanced Toxicology A	One	20
COMP 622	Computer Modelling of Environmental Systems	Two	20
ECOL 609	Conservation Biology	One	20
ECOL 631	Animal Behaviour	One	20
ECOL 612	Wildlife Management	Two	20
ERST 631	Environmental Sciences in Environmental Policy	One	20
ERST 606	Advanced Geographic Information Systems A	One	20
ERST 607	Advanced Geographic Information Systems B	Two	20
ERST 611	Advanced Environmental Monitoring <i>not offered in 2017</i>	One	20
MICR 604	Advanced Microbiology	One	20
PLPT 621	Env Impacts of Pest Management <i>not offered in 2017</i>	Two	20
QMET 602	Mathematical modelling of Dynamic Systems <i>not offered in 2017</i>	One	20
SOSC 628	Soil chemistry	Two	20

*Plus additional courses or special topics in Animal Science, Ecology and Soil Science*

## ENGINEERING:

### UC:

Course Code	Course Name	Semester	Points
ENCI 445	Environmental Fluid Mechanics <i>not offered in 2017</i>	One	15
ENCI 475	Independent Course of Study	Flexible	15
ENCI 634	Water Chemistry <i>not offered in 2017</i>	One	15
ENCI 638	Environmental Fluid Dynamics <i>not offered in 2017</i>	Two	15
ENCN401	Engineering in Developing Communities	One	15
ENCN444	Water Infrastructure and Design	One	15

ENCN481	Environmental Engineering Design	One	15
ENGE 414	Applied Hydrogeology	One	15
ENNR 405	Ecological and Bioresources Engineering	One	15
ENNR 422	Water Resource and Irrigation Engineering *	Two	15

Plus ENGN special topics offered at LU *\*talk to Waterways if you plan to enrol in ENNR422*

#### LU

ENGN608	Special Topic – Advanced Hydrology and Water Resources <i>not offered in 2017</i>	One	20
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## FORESTRY:

#### UC:

Course Code	Course Name	Semester	Points
FORE 444	Sustaining Biodiversity on Private Land <i>not offered in 2017</i>	Two	15
FORE 445	Environmental Forestry <i>not offered in 2017</i>	Two	15
FORE 616	Restoration Ecology	One	30
FORE 633	Resource Assessment <i>not offered in 2017</i>	Two	15

#### LU:

Course Code	Course Name	Semester	Points
FORS 601	Biophysical relationships in Agroforestry <i>not offered in 2017</i>	TBC	20

## ENVIRONMENTAL MANAGEMENT, COMMERCE & LAW:

#### UC:

Course Code	Course Name	Semester	Points
GEOG 402	Resilient Cities	One	30
ECON 655	Environmental Economics <i>not offered in 2017</i>	Two	15
LAWS629	Natural Resource Law	Whole Year	30+
LAWS644	Law and the Environment	Whole Year	30+

#### LU:

Course Code	Course Name	Semester	Points
ERST 601	Advanced Theory in Resource Studies	One	20
ERST 604	Advanced Urban, Regional and Resource Planning	One	20
ERST 620	Advanced Environmental Management Systems	One	20
ERST 622	Comparative Environmental Policy <i>not offered in 2017</i>	One/two	20
ERST 631	Environmental Sciences in Environmental Policy	One	20
ERST 633	Integrated Environmental Management	Two	20
ERST 636	Aspects of Sustainability: An International Perspective	Two	20
ERST 671	Environmental Impact Assessment <i>not offered in 2017</i>	Two	20
ERST 672	Sustainability and Organisations <i>not offered in 2017</i>	Two	20

## RESEARCH METHODS:

#### UC

Course Code	Course Name	Semester	Points
FORE610	Research Methods	One / Two	15

SOCI402	Methods and Strategies in Research	One	30
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#### LU

Course Code	Course Name	Semester	Points
ECOL608	Research Methods in Ecology	One	20
SOCI 601	Social Science research Methods (Quantitative)	One	20
SOCI 602	Social Science research Methods (Qualitative)	Two	20

## POLITICAL & SOCIAL SCIENCE:

#### UC:

Course Code	Course Name	Semester	Points
POLS402	New Zealand Politics and Policy <i>not offered in 2017</i>	One	15
POLS444	International Human Rights	Two	30
POLS409	Public Policy Analysis <i>not offered in 2017</i>	Two	15

#### LU:

Course Code	Course Name	Semester	Points
LASC 615	Advanced Landscape Planning and Policy	One	20
SOCI 641	Advanced Society and Environment	Two	20

## SPECIAL TOPICS & DISSERTATIONS:

The term “**Special Topic**” can mean different things depending on the department offering the course. In some cases, the special topic is on a particular subject, but this is not publicised and you need to see the course coordinator to find out what this is (e.g., ENGN613 *Special Topic in Waste Management*, coordinated by Dr Mohssen, or ERST 615 *Special Topic in Systems Perspective for Sustainable Design* coordinated by Dr Samarasinghe, both at Lincoln University). In other cases the “Special Topic” allows for the development of an individually prescribed course of study, which can be particularly beneficial for students unable to find what they need within the formal course structure. The listed co-ordinator or examiner for such special topics should be contacted for further information about content.

“**Dissertation**” courses, on the other hand, may or may not be referred to as “special topics”. These courses involve a period of self-directed, supervised research and, usually, a significant report or “mini-thesis” as the outcome to be marked. This course can be particularly useful for PG Diploma students who do not have prior research experience and are not intending to enrol in a Masters thesis in the near future, and for external students studying remotely from outside the Canterbury region. Examples of appropriate dissertation courses include the UC ENVR 480 *Research Project* and some of the 600-level special topic or dissertation projects at LU.

Enrolment in such Dissertations courses should be discussed with the Director or Senior Tutor of the Waterways Centre in the first instance. A course of study can then be developed with an appropriate staff member and approved by the Director for inclusion in the degree.

**WATR thesis papers:** WATR690 at UC, WATR651 at LU