

Energy Efficiency Modelling and Implementation

Year and Campus:	2011
Coordinator:	Dr Dominique Hes (ABP) and Dr Lu Aye (Engineering)
Contact:	dhes@unimelb.edu.au l.aye@unimelb.edu.au
Overview:	<p>Energy Efficiency Modelling and Implementation is offered as a major field of study in the Master of Environment degree.</p> <p>Energy modelling and implementation for buildings has become an important area in the light of growing concerns about climate change, energy security and the general need to adopt more sustainable practices. Despite the obvious need for people with such knowledge, there is a severe shortage of people that are trained in energy modelling who have the capacity to interpret the modelling results to effective practice. The realms of energy knowledge required include heating and cooling requirements, as well as use of day lighting and natural lighting. These skills are crucial to being able to reduce the risk in the integration of innovative sustainability initiatives, this risk reduction centres on assurances of performance and delivery of desired sustainability outcomes.</p> <p>Energy modelling is a key tool for the development and adoption of energy efficiency in new and existing buildings. This course develops the skills of complex modelling informed by an understanding of the results ensuring the graduate has the ability to both interpret and communicate outcomes effectively. Units of study include a mix of building management, architecture, engineering, management, education and communication subjects.</p>
Objectives:	<p>Students who complete the Master of Environment will have:</p> <ul style="list-style-type: none"> • An advanced understanding of environmental issues • Advanced skills and techniques applicable to changing and managing the environment • An ability to evaluate and synthesise research and professional literature in the chosen stream or focus of study • An advanced understanding of the international context and sensitivities of environmental assessment <p>The graduate attributes for the Master of Environment are:</p> <ul style="list-style-type: none"> • Expertise in multidisciplinary understanding, analysis and research with an environmental focus • Collaborative approaches to environmental problem solving • Capacity to engage in critical social and sustainability questions <p>The Master of Environment generic skills are:</p> <ul style="list-style-type: none"> • Multidisciplinary and trans-disciplinary knowledge and research of environmental relevance • Collaborative environmental management skills • Capacity for independent learning across discipline boundaries <p>Upon successful completion of the Energy Efficiency Modelling and Implementation major, students will be able to:</p> <ul style="list-style-type: none"> • Work in multi-disciplinary groups; • Understand the outcome of modelling and be able to both communicate and integrate them into project development and management; • Use results as part of business case development; and • Carry out the modelling or interpret the modelling of complex building with innovative environmental initiatives from passive design, complex facades, natural lighting and heating and cooling systems.
Structure & Available Subjects:	<p>Students will be required to complete six core subjects and choose the remaining subjects from a recommended list of electives to make up the balance of the award. The selection of electives is made in consultation with the Energy Efficiency Modelling and Implementation major coordinators.</p> <p>For a current list of subjects offered in the Energy Efficiency Modelling and Implementation major, please refer to the course information page at: http://www.oep.unimelb.edu.au/currentstudents/master_of_environment/specialist_paths_of_study/energy_efficiency_modelling_and_implementation (http://www.oep.unimelb.edu.au/)</p>

currentstudents/master_of_environment/specialist_paths_of_study/energy_efficiency_modelling_and_implementation)																																																																																		
Subject Options:	<p>Core Subjects Students are required to complete the subjects:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MULT90005 Trans-disciplinary Thinking & Learning</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>MULT90004 Sustainability Policy and Management</td> <td>March</td> <td>12.50</td> </tr> <tr> <td>ENEN90011 Energy Efficiency Technology</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>ABPL90153 Complex Building Energy Modelling</td> <td>January, July</td> <td>12.50</td> </tr> <tr> <td>ABPL90086 Environmental Systems</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>ENEN90033 Solar Energy</td> <td>Not offered 2011</td> <td>12.50</td> </tr> </tbody> </table> <p>Elective Subjects and choose the remaining subjects from the list of:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ENEN90014 Sustainable Buildings</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>ABPL90120 Building Sustainability</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>ABPL90152 Sustainable Tropical Housing</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>ABPL90032 Resource Friendly Building Operations</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>ABPL90049 Environmental Design</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>ENEN90031 Quantitative Environmental Modelling</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>ENEN90032 Environmental Analysis Tools</td> <td>Not offered 2011</td> <td>12.50</td> </tr> </tbody> </table> <p>Additional Electives Other electives (that may be taken with the advice of the major coordinators) include:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ENST90002 Social Impact Assessment and Evaluation</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>ENST90017 Environmental Policy Instruments</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>EVSC90015 Environmental Impact Assessment</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>ANTH90001 Heritage and Cultural Environments</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>DEVT90009 Understanding Development</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>NRMT90003 Social Research Methods</td> <td>March</td> <td>12.50</td> </tr> <tr> <td>ECON90016 Environmental Economics and Strategy</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>MGMT90022 Managing Organisational Change</td> <td>March</td> <td>12.50</td> </tr> <tr> <td>POPH90142 Epidemiology & Analytic Methods 1</td> <td>Not offered 2011</td> <td>12.50</td> </tr> <tr> <td>EVSC90010 Environmental Risk Assessment</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>ECOL90001 Restoration Ecology</td> <td>Not offered 2011</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	MULT90005 Trans-disciplinary Thinking & Learning	Not offered 2011	12.50	MULT90004 Sustainability Policy and Management	March	12.50	ENEN90011 Energy Efficiency Technology	Not offered 2011	12.50	ABPL90153 Complex Building Energy Modelling	January, July	12.50	ABPL90086 Environmental Systems	Semester 2	12.50	ENEN90033 Solar Energy	Not offered 2011	12.50	Subject	Study Period Commencement:	Credit Points:	ENEN90014 Sustainable Buildings	Not offered 2011	12.50	ABPL90120 Building Sustainability	Not offered 2011	12.50	ABPL90152 Sustainable Tropical Housing	Not offered 2011	12.50	ABPL90032 Resource Friendly Building Operations	Not offered 2011	12.50	ABPL90049 Environmental Design	Semester 1	12.50	ENEN90031 Quantitative Environmental Modelling	Not offered 2011	12.50	ENEN90032 Environmental Analysis Tools	Not offered 2011	12.50	Subject	Study Period Commencement:	Credit Points:	ENST90002 Social Impact Assessment and Evaluation	Semester 2	12.50	ENST90017 Environmental Policy Instruments	Semester 2	12.50	EVSC90015 Environmental Impact Assessment	Semester 1	12.50	ANTH90001 Heritage and Cultural Environments	Semester 2	12.50	DEVT90009 Understanding Development	Not offered 2011	12.50	NRMT90003 Social Research Methods	March	12.50	ECON90016 Environmental Economics and Strategy	Semester 1	12.50	MGMT90022 Managing Organisational Change	March	12.50	POPH90142 Epidemiology & Analytic Methods 1	Not offered 2011	12.50	EVSC90010 Environmental Risk Assessment	Semester 1	12.50	ECOL90001 Restoration Ecology	Not offered 2011	12.50
	Subject	Study Period Commencement:	Credit Points:																																																																															
	MULT90005 Trans-disciplinary Thinking & Learning	Not offered 2011	12.50																																																																															
	MULT90004 Sustainability Policy and Management	March	12.50																																																																															
	ENEN90011 Energy Efficiency Technology	Not offered 2011	12.50																																																																															
	ABPL90153 Complex Building Energy Modelling	January, July	12.50																																																																															
	ABPL90086 Environmental Systems	Semester 2	12.50																																																																															
	ENEN90033 Solar Energy	Not offered 2011	12.50																																																																															
	Subject	Study Period Commencement:	Credit Points:																																																																															
	ENEN90014 Sustainable Buildings	Not offered 2011	12.50																																																																															
	ABPL90120 Building Sustainability	Not offered 2011	12.50																																																																															
	ABPL90152 Sustainable Tropical Housing	Not offered 2011	12.50																																																																															
	ABPL90032 Resource Friendly Building Operations	Not offered 2011	12.50																																																																															
	ABPL90049 Environmental Design	Semester 1	12.50																																																																															
ENEN90031 Quantitative Environmental Modelling	Not offered 2011	12.50																																																																																
ENEN90032 Environmental Analysis Tools	Not offered 2011	12.50																																																																																
Subject	Study Period Commencement:	Credit Points:																																																																																
ENST90002 Social Impact Assessment and Evaluation	Semester 2	12.50																																																																																
ENST90017 Environmental Policy Instruments	Semester 2	12.50																																																																																
EVSC90015 Environmental Impact Assessment	Semester 1	12.50																																																																																
ANTH90001 Heritage and Cultural Environments	Semester 2	12.50																																																																																
DEVT90009 Understanding Development	Not offered 2011	12.50																																																																																
NRMT90003 Social Research Methods	March	12.50																																																																																
ECON90016 Environmental Economics and Strategy	Semester 1	12.50																																																																																
MGMT90022 Managing Organisational Change	March	12.50																																																																																
POPH90142 Epidemiology & Analytic Methods 1	Not offered 2011	12.50																																																																																
EVSC90010 Environmental Risk Assessment	Semester 1	12.50																																																																																
ECOL90001 Restoration Ecology	Not offered 2011	12.50																																																																																

	ENEN90027 Energy for Sustainable Development	Not offered 2011	12.50
	MAST90007 Statistics for Research Workers	February, June	12.50
	ABPL90016 Asset Management	Semester 1	12.50
	ABPL90030 Project Evaluation and Management	Not offered 2011	12.50
	LAWS70068 Environmental Law	September	12.50
	ENST90006 Environmental Research Review	Semester 1, Semester 2	12.50
	ENST90007 Environmental Research Topic	Semester 1, Semester 2	25
	ENST90018 Environmental Research Topic	Semester 1, Semester 2	37.50
	ENST90016 Environmental Research Project	Semester 1, Semester 2	50
	ENST70001 Environmental Research Proj (long) MYE	Semester 1, Semester 2	25
Links to further information:	http://www.environment.unimelb.edu.au		
Notes:	Other subjects may be approved at the discretion of the coordinator.		
Related Course(s):	Master of Environment Master of Environment		