



Birmingham City University

Faculty of Technology, Engineering and Environment

Birmingham School of the Built Environment

Postgraduate Programme

MSc Environmental Sustainability

Module Documents

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| 12th December 2011 | v0.16 | 24th April 2013 |

MSc Environmental Sustainability

Module Documents

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15. Environmental and Social Issues in Mountain Areas
16. Sustainable rural land use and energy

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Dynamic Natural Environments | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value¹: 7.5 | |
| Module Leader: Dr Julian Lamb | |
| Module start date(s) during the current academic year: September 2014 | |
| Module finish date(s) during the current academic year: January 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module equips students with a broad foundation of knowledge and skills in environmental science. Upon completing the module students should be able to understand and critically evaluate the 'natural' processes and environments that drive and underpin the demands for, and the challenges of, sustainable development and environmental management.

Indicative content

- The epistemological nature of science
 - Understanding limits and application of the scientific method
 - Awareness of the dangers of pseudo science
 - Appreciating how 'other' epistemologies can cross-cut and run in parallel with scientific research
- The geological record of climate and environmental change: evidence of a dynamic planet and a context for understanding future scenarios
- Earth processes – carbon, nitrogen, water
- Researching environmental science
 - Basic experimental/ research methods used to study natural processes.
 - The meaning and application of statistics
- The cyclical nature of change (e.g. Milankovic cycles)
- Complexity and Paradox (e.g. Fuzzy Theory)
- Population limits
- Habitats and ecology
- Water and hydrology

Study mode / delivery method(s):

The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on cases studies; action learning sets based on student-centred research; and Moodle based forums.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Critically evaluate the application and limits of a scientific approach in researching environmental change. | The module will use a blend of learning and teaching styles that include lectures and small group seminars; practical workshops; action learning sets based on student-centred research; and Moodle based forums. |
| 2. Critically explain and evaluate the evidence for past and future climate and environmental change – including anthropogenic change. | |
| 3. Critically compare and assess the complex systems relationships between Lithosphere, Hydrosphere, Atmosphere and Biosphere. | |
| 4. Devise a plan to investigate a dynamic natural environment process using a scientific approach. | |

Assessment and feedback

Formative Assessment

The module is 100% coursework. This module uses a 'patchwork portfolio' approach to assessment.

During the module students are required to submit one short deliverable (known as a patch) that is submitted and assessed. The deliverable is a 750 word proposal for a subsequent report that forms the major summative element of the module assessment.

Feedback is given to students via Moodle. The intention is that students receive individual feedback during the module and guidance/ coaching can be provided should it be required by the student. Whilst explicitly formative in nature, the patch is allocated 20% of the overall module mark.

Summative Assessment

Students are required to design and write a 3000 word research proposal with associated literature review for an investigation into an aspect of the dynamic natural environment.

Summative assessment in the patchwork portfolio is a progression of the work carried-out by students for the in-module patch. Contributing 80% of the overall module mark, the final report is a new piece of work in its own right, but draws upon the analysis and research conducted for the 'formative' patch.

Feedback

Feedback is provided to on an individual basis to students via Moodle for their patch.

Related Modules

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

Students will study additional modules dependent on the course and pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle is used as the central repository of learning resources and a great emphasis is placed on a balance of text and non-text resources (such as video-casts (e.g. iPlayer and 4oD) and podcasts (such as Radio 4 iPlayer)). Links to other resources including relevant web sites and professional journals are also given on Moodle.

The following provides an indicative list of more traditional learning resources (books). Other sources of information will be highlighted during the course as appropriate.

Barkham, P. (2010) *The Butterfly Isles* Granta, London

Fortey, R. (2006) *The Hidden Landscape* Bodley Head, London

Fortey, R. (2002) *Trilobite! Eyewitness to Evolution* Flamingo, London

Kosco, B. (1994) *Fuzzy Thinking : The New Science of Fuzzy Logic* Flamingo Press, London

McKinney, M. and Schoch, R. (2007) *Environmental science : systems and solutions (4th edition)*, Jones and Bartlett, Massachusetts

Oldacre, B. (2009) *Bad Science* Harper Perennial, London

Pallen, M. (2009) *The Rough Guide to Evolution* Rough Guides Ltd, London

Peake, S. and Smith, J. (2009) *Climate Change – From Science to Sustainability (2nd edition)*, Oxford University Press

Toghill, P. (2002) *The Geology of Britain* Crowood Press, London

Valiela, I. (2009) *Doing Science: Design, Analysis, and Communication of Scientific Research* OUP, USA

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Law and Environmental Governance | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability MA Environmental and Spatial Planning | |
| Date of publication of template to students: | |

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|-------------------------|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |

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| ECTS Credit Value²: 7.5 |
| Module Leader: Professor Alister Scott |
| Module start date(s) during the current academic year: January 2013 |
| Module finish date(s) during the current academic year: May 2013 |
| Assessment weightings: 100% Coursework |

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| For SRS Team Use Only: | |
| Created By: | Date: |

² ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module identifies and critically examines the changing nature of law, governance and society and its implications for the sustainable management of the built and natural environment.

Indicative content

The module develops around four main themes as follows:

1. The changing nature of governance in the UK

Principles of governance; models of government and governance; civil society; how legislation is made; multi-scalar governance or 'meta governance'; central/regional/local administration; partnerships.

2. The scope, purpose and effectiveness of legislation for control of built and natural environments

Designations; planning and environmental controls - Directives, Conventions, Acts, Regulations etc ; special controls; compulsory purchase.

3. The role of the principal agencies and bodies charged with the implementation of environmental legislation

Delegation; Estoppel; legitimate expectation; review by courts and ombudsman; Appeals and Public Inquiries.

4. The role of customary practices and traditions in managing the built and natural environment

Role of informal institutions; impacts of legislation on communities/groups; role of customs and mores on environmental behaviour/protest; bottom up – top down issues; language e.g. Welsh / Gaelic as material considerations; conflict management in natural resource management issues.

Study mode / delivery method(s):

Lecture presentations and interactive seminars. An emphasis is placed on student-centred learning where appropriate. Supporting documentation will be provided to download from the Module page on the University's internet resource, Moodle. (<http://moodle.bcu.ac.uk>).

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|--|
| 1. Evaluate the changing nature of governance in the UK. | Lectures and problem based seminars. The learning will be supported by Moodle and reflective discussion forums. |
| 2. Examine the scope, purpose and effectiveness of legislation for control of built and natural environments. | |
| 3. Evaluate the role of the principal agencies and bodies charged with the implementation of planning and environmental legislation. | |
| 4. Evaluate the role of customary practices and traditions in managing the built and natural environment. | |

Assessment and feedback

Formative Assessment

The assessment strategy builds through three stages allowing students to receive feedback and then translate this into the next stage. So the individual proof of evidence will have detailed feedback which will allow the group to address identified weaknesses for the presentation. Feedback from this will also help in the final reflective stage.

Summative Assessment

100% Coursework. 3 stages

Role play of environmental conflict leading to a public inquiry. Students will be allocated into a team (agency) and are required after researching that agency and its operation, to identify distinctive roles for each team member in relation to a specific resource management conflict. Students will be required to:

1. Produce an individual proof of evidence for inquiry
2. Summarise, in groups, all evidence with a recommendation for presentation at inquiry as a team and be subjected to cross examination
3. Individually write reflective piece on inquiry experience critically commenting on principles of law and governance.

Feedback

Students will be given feedback within 4 working weeks.

Related Modules

Society, Environment and Economics

Dynamic Natural Environments

Sustainable Development into Practice

Students will study additional modules dependent on the course and pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle will be used as a central repository of multi-media resources including selected reading from each lecture. There is no standard reference to cover the material in this module. Some key papers reproduced below.

Bull, R., Petts, J. and Evans, J. (2008) Social learning from public engagement: dreaming the impossible? *Journal of Environmental Planning and Management*, 51:5, 701-716

Goodwin, M. (2003) Rural Governance: *A Review of Relevant Literature*, Paper prepared for ESRC, Countryside Agency and DEFRA, London: Defra

Little, J. (2001) New rural governance, *Progress in Human Geography* 25,(1) 97–102

Pike, A., Rodrigues-Pose, A. and Tomoney, J. (2007) what kind of local and regional development and for whom? *Regional Studies*, 41 (9) 1253-1269

Portes, A., (1998) Social capital: its origins and applications in modern society. *Annual Sociological Review* 24, 1–24.

Scott, M. (2004). Building institutional capacity in rural Northern Ireland: The role of partnership governance in the LEADER II programme. *Journal of Rural Studies*, 2

Shucksmith, M. (2000) Endogenous development, capacity building and inclusion: perspectives from the UK experience of LEADER. *Sociologia Ruralis*, 40 (2), 208-218.

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Society, Economics and Environment | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value³: 7.5 | |
| Module Leader: Claudia Carter | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: January 2014 | |
| Assessment weightings: 100% Coursework | |

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³ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module aims to give students an understanding of social and economic aspects of managing environments sustainably. It will focus on linking theory and practice in demonstrating how the built, natural and social environments are interlinked. The students will have the opportunity to critically review existing commonly used methods and tools, and familiarise themselves with 'new' approaches suitable for more holistic decision-making and project appraisal.

All decisions and actions relating to the natural environment have a human dimension. Natural processes influence social wellbeing and economic prosperity, and vice versa, humans and their constructs are an integral part of, shape and impact on the natural environment. This module thus contributes to the core of the programme, providing a mechanism for students to reflect on the social and economic motivations and implications of environmental decision-making.

Indicative content

This module addresses fundamental concepts, contemporary themes and practice associated with the social and economic realm of managing environments sustainably. Areas to be covered include:

- Core components of social and economic systems
- Established and emerging social/socio-political and economic paradigms, such as quality of life, 'big society', the economic growth paradigm and alternative economic models
- DPSIR framework (Driving Forces-Pressures-State-Impacts-Responses)
- The multiplicity of social and economic perspectives, values and interests informing, and competing in, decision-making processes about the environment
- Ethical foundations and consequences of different value perspectives
- Concepts of and contemporary debates surrounding social and environmental justice
- Traditional assessment and valuation tools that reflect social and economic considerations within environmental decision-making, including critical reflection of their scope and limitations
- The development of, context for and strengths and weaknesses of emerging approaches for environmental decision-making
- The links between theory and practice

Study mode / delivery method(s):

This module will be taught through lectures, which will be flexible and incorporate debate, workshops and audiovisual material. Students will also be required to read widely around the topics introduced (via reading lists) and explore relevant material in academic books and journals, public reports, and professional literature.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Critically assess key contemporary themes that intersect social, economic and environmental agendas. | <p>These outcomes will be achieved through a combination of delivery methods:</p> <ul style="list-style-type: none"> • Lectures and workshops • Directed study • Directed learning exercises <p>Demonstration of achievement will be through successful completion of the time-constrained assessment.</p> |
| 2. Identify and evaluate the principal socio-economic discourses within the sustainable development field and link these to theoretical/conceptual foundations. | |
| 3. Critically appraise the theory and application of a range of contemporary decision making tools / tools associated with the framing and evaluation of social and economic aspects of managing environments sustainably. | |
| 4. Demonstrate awareness of ethical foundations and consequences of different social and economic approaches to environmental decision-making. | |

Assessment and feedback

Formative Assessment

During the course of the module there will be opportunities in the classroom to engage in debates, group activities and workshops. Involvement in such activities will offer formative feedback from peers.

Formative feedback from module tutors will take place during workshops, on outputs from group activities and through the online forum.

Summative Assessment

The assessment will take the form of a time-constrained exercise requiring students to produce an individual portfolio of two stages under supervised conditions within an allotted time. Both stages of the portfolio will focus on a selected case study of an environmental management problem or policy decision which was (or is currently being) subject to appraisal using one or more of the tools introduced in the module.

Stage 1: A discussion of the principles and dominant social/economic discourses of the given environmental management problem or policy decision.

Stage 2: An evaluation and critique of the tools used within the selected environmental management problem or policy decision. The work should include suggestions of how the tools and their application could be improved or which

additional methods would be capable of addressing identified weaknesses and gaps.

Feedback

Assessed work will be returned to students within 4 (working) weeks of submission with written comments and marks. Students should note the comments and seek to use them in improving their future work.

Staff are available to give advice and guidance during the coursework surgery and revision sessions. Additional tutorials can be booked in advance.

Related Modules

Law and Environmental Governance

Dynamic Natural Environments

Sustainable Development into Practice

Students will study additional modules dependent on the course and pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle will be used as a central repository of multi-media resources including selected reading from each lecture. There is no standard reference to cover the material in this module. Some key papers are reproduced below. Other sources of information will be highlighted during the course as appropriate.

Bromley, D.W. and Paavola, J. (2002) (eds) *Economic, Ethics and Environmental Policy: Contested Choices*. Oxford: Blackwell.

Burgess, J., Stirling, A., Clark, J., Davies, G., Eames, M., Staley, K. and Williamson, S. (2007) 'Deliberative mapping: a novel analytic-deliberative methodology to support contested science-policy decisions'. *Public Understanding of Science* 16(3): 299-322.

Burningham, K. and D. Thrush (2001) 'Rainforests are a long way from here': The environmental concerns of disadvantaged groups. Joseph Rowntree Foundation Report. York: York Publishing Services Ltd.

Lucas, K., Walker, G., Eames, M., Fay, H. and Poustie, M. (2004) *Environment and Social Justice: Rapid Research and Evidence Review*. Policy Studies Institute. Available online at http://www.sd-research.org.uk/researchreviews/documents/ESJ_final_report.pdf

O'Neill, J. F. and C. L. Spash (2000) 'Conceptions of value in environmental decision-making'. *Environmental Values* 9(4): 521-536.

Söderholm, P. (2001) 'The deliberative approach in environmental valuation'. *Journal of Economic Issues* 35(2): 487-495.

Spash, C.L. (2008) 'Contingent valuation design and data treatment: If you can't shoot the messenger, change the message'. *Environment and Planning C: Government & Policy* 26 (1): 34-53.

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Sustainable Development into Practice | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value⁴: 7.5 | |
| Module Leader: David Adams | |
| Module start date(s) during the current academic year: January 2013 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: 100% Coursework involving a mix of individual and groupwork elements. | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

⁴ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

The module is concerned with developing ideas about the direction of future change in a particular locality. It involves preparing a strategy to guide that change; identifying appropriate delivery mechanisms by which the strategy can be implemented; and addressing some of these mechanisms. It is concerned not just with physical change and improvement and the technical issues surrounding those changes, but also with the social and economic dimensions of the area chosen and the linkages and tensions between these multiple dimensions.

The aim of the module is to encourage students to explore, in small teams, the interactions between spatial and non-spatial issues, and to produce a draft neighbourhood strategy and development project that addresses in the round the problems and opportunities of a particular locality of their choice.

Indicative content

This module is concerned with developing strategies, and implementing projects at the neighbourhood level. It is undertaken within the framework of a programme of student workshops, so that the sharing of experiences and the development of a supportive working environment is strongly emphasised. Core to the learning outcomes of the module is the focus on working with students from different disciplinary backgrounds. This interdisciplinary problem-solving approach is intended to foster understanding of and respect for the views and perspectives of different professions and disciplines as well as a recognition that there is rarely any one 'best' approach to any development task.

The module can be divided into a number of 'tranches'.

- Staff led sessions to provide guidance on what the brief entails, what type of area should be chosen for the team exercise, and what the teams are.
- Exploration through staff led workshops of the types of environmental, economic and social issues and opportunities that are likely to be in evidence in different types of locality. This will help teams to work up ideas for their own areas.
- Staff led sessions devoted to working through examples of good and bad practice in the field of strategy preparation and project implementation.
- These will be followed by sessions where students will work together in teams to prepare for the presentations of draft strategies and development projects.

Study mode / delivery method(s):

The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on cases studies; group working based on student-centred research; and Moodle based forums.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Identify and analyse the issues and opportunities influencing spatial and non-spatial policy formulation including an exploration of the linkages and tensions between the different perspectives and interests affected by (and affecting) public policy intervention. | The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on cases studies; group working based on student-centred research; and Moodle based forums. |
| 2. Formulate and present spatial and non-spatial strategies including the development of solutions to overcome constraints affecting policy implementation. | |
| 3. Recognise the contribution that different disciplines, organisations and agencies can make in effecting change at the local level, | |
| 4. Utilise the range of skills and experience required for inter-professional working and project implementation | |

Assessment and feedback

Formative Assessment

During the course of the module there will be opportunities in the classroom to engage in debates, group activities and workshops. Involvement in such activities will offer formative feedback from peers.

Formative feedback from module tutors will take place during seminars and through the online forum.

Summative Assessment

100% Coursework made up of 2 deliverables.

The assessment provides for students to explore an area of focus of their chosen discipline in detail while ensuring the results of their analyses are integrated with and compatible with those of other disciplines within the team.

Deliverable 1 will be a team presentation on the underpinning analysis for the strategy for the area they have chosen. This will provide formative feedback on the strategy and the key issues to be considered.

Deliverable 2 will be the written team report on study area, comprising three main stages:

- a) A summary neighbourhood strategy document setting out proposals for the chosen area and appropriate delivery mechanisms (GROUP)
- b) Details of strategy proposals, addressing the areas of specialisation within the team. (These include, depending on the specialists involved: planning policies, outline developments and technical elements such as design briefs.) (INDIVIDUAL)
- c) A sustainability appraisal of the proposed strategy which identifies how key sustainability issues were considered and addressed in the development of the chosen strategy (GROUP)

Feedback

Assessed work will be returned to students within 4 (working) weeks of submission with written comments and marks. Students should note the comments and seek to use them in improving their future work.

Staff are available to give advice and guidance during the coursework surgery and revision sessions, additional tutorials can be booked in advance.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Students will study additional modules dependent on the course and pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle is used as the central repository of learning resources and a great emphasis is placed on a balance of text and non-text resources (such as video-casts (e.g. iPlayer and 4oD) and podcasts (such as Radio 4 iPlayer)). Links to other resources including relevant web sites and professional journals are also given on Moodle.

The following provides an indicative list of more traditional learning resources (books). Other sources of information will be highlighted during the course as appropriate.

Adams, D. (1994) *Urban Planning and the Development Process*, London, UCL Press

Barton, H. *et al.* (2010) *Shaping neighbourhoods*, Spon, London

Brett, M. (1997) *Property and Money: A Simple Guide to Property Investment and Finance*, Estates Gazette, London (2nd edition)

- Brown, G.R. and Matysiak, G.A. (2000) *Real Estate Investment: A Capital Market Approach*, Financial Times/Prentice Hall, London
- CABE (2000) *By Design: urban design in the planning system towards better practice*, CABE.
- Cadman, D. and Topping, S. (1995) *Property Development*, Spon, London (4th edition)
- Darlow, C. (1988) *Valuation and Development Appraisal*, Estates Gazette, London
- DCLG (2005) *Local Development Framework Monitoring: A Good Practice Guide*, HMSO
- DCLG (2005) *Planning Policy Statement 1: Delivering Sustainable Development*, HMSO, London
- DCLG (2007) *Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1*, HMSO, London
- DCLG (2008) *Planning Policy Statement 12: Local Development Frameworks*, HMSO, London
- DoE (1998) *Planning and Development Briefs: A Guide to Better Practice*, DoE, London
- Isaac, D. (1998) *Property Investment*, Macmillan, London
- Millington, A.F. (2000) *Property Development*, Estates Gazette, London
- Greed, C. (ed.) (1995) *Implementing Town Planning*, Longman, London
- Harrison, J. (1989) *Finance for Non-financial managers*, Thorsons, London
- Hartigay, S. & Yu, S. (1993) *Property Investment Decisions - A Quantitative Approach*, Spon, London
- Planning Officers' Society (2005) *Policies for Spatial Plans: A guide to writing the policy content of Local Development Documents*, Planning Officers' Society, London
- Ratcliffe, J., Shepherd, M. and Stubbs, M. (2004) *Urban Planning and Real Estate Development*, Routledge, London
- Taylor, N. (1991) *Development Site Evaluation*, Macmillan, London.
- Upson, M. (1997) *Successful Property Development*, Macmillan, London
- Whittington, R. (1993) *What is strategy - and does it matter?* Routledge, London.

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Policies and Plans | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability MA Environmental and Spatial Planning | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value⁵: 7.5 | |
| Module Leader: Professor Alister Scott | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: December 2013 | |
| Assessment weightings: Report 50% Oral viva 50% | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

⁵ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

The broad aims of this module are to familiarise students with planning intervention through the evolving forward planning mechanisms used to guide spatial change; to understand how and why these have changed over time; to critically assess current spatial planning mechanisms; and to understand the relationship between spatial policies and plans and other public policy plans and investment programmes.

Indicative content

There are two key themes related to this module

Theme 1: Processes, Actors and Sustainability

- Brief overview of strategic planning, policy making processes in the UK;
- The influence of Europe and comparative spatial planning systems and
- The role of sustainability as part of the new spatial planning agenda.

Theme 2: Evaluation of policies and plans

- The evaluation of spatial plans on achieving development, investment and environmental outcomes
- The relationship between spatial and non spatial plans such as housing strategies, transport plans and community strategies
- Critical debates concerning what makes successful plans and strategies

Alternative responses to environmental challenges, including a range of good practice projects from Europe and beyond.

Study mode / delivery method(s):

Delivery will be predominantly through lectures, seminars and critical debate within Action Learning Sets. Visiting speakers from practice are also a vital element of this module as they are at the cutting edge, and therefore able to bring real life examples of current practice in a rapidly changing agenda for planners. Electronic support will be available through Moodle.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Describe and critically comment on how the 'spatial turn' has affected plans and policies in a range of different contexts (environmental, economic, social and technological) in the UK. | Lectures, seminars and the use of visiting speakers from practice will assist in delivering all of these learning outcomes. Moodle will be used to provide additional material as well as an interactive discussion forum. |
| 2. Demonstrate a critical understanding of a range of spatial planning policy issues and frameworks at European, national, regional, and local levels. | |
| 3. Explain how the spatial planning process is used to manage change in the built and natural environments. | |
| 4. Critically discuss the relationship between spatial and non-spatial policy mechanisms, especially at the regional and local level. | |

Assessment and feedback

Formative Assessment

This module will use seminar group activities to formatively assess and feedback on student progress.

Summative Assessment

This module will be assessed through one coursework with two deliverables. Both themes are covered within the assessments with feedback from the written piece helping students prepare for the oral.

Weighting:

Each deliverable is worth 50% of the total module mark

Deliverable 1 will involve completing an individual consultation response for a plan or policy from a choice.

Deliverable 2 will comprise an oral viva based on the Part 1 report.

Feedback

Formative feedback will take place during lectures and through on-line forum. Both essay submissions will generate summative feedback. Further tutorial support will be available on request.

Related Modules

Dynamic Natural Environments
Society, Environment and Economics
Law and Environmental Governance
Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle will be used as a central repository of multi-media resources including selected reading. In addition, the following books are recommended reading:

The current moodle site has a full list of reading for each lecture.

Attention will be drawn to a range of specific references throughout the course of the module. However there are some good general texts which cover much of the subject matter of this module, these include:

- Gallent, N., Bianconi, M. and Andersson, J. (2006) Planning on the edge: England's rural-urban fringe and the spatial-planning agenda, *Environment and Planning B*, 33, 457-476
- Gunder, M. & Hillier, J. (2007) Problematizing responsibility in planning theory and practice: On seeing the middle of the string? *Progress in Planning* 68 57–96
- Haughton, G., Counsell, D. and Vigar, G. (2008) Sustainable Development in Post-devolution UK and Ireland, *Regional Studies*, 42 (9) 1223-1236
- Kato, Sadahisa and Ahern, Jack (2008) "Learning by doing": adaptive planning as a strategy to address uncertainty in planning', *Journal of Environmental Planning and Management*, 51: 4, 543 — 559
- Lane, Marcus B. and McDonald, Geoff (2005) 'Community-based Environmental Planning: Operational Dilemmas, Planning Principles and Possible Remedies', *Journal of Environmental Planning and Management*, 48: 5, 709— 731
- Planning Officers Society (2005) Policies for Spatial Plans: A guide to writing the policy content of Local Development Documents : POS: LoOndon.
- Scott AJ , Gilbert A., and Gelan A. (2009) *The Urban Rural Divide: Myth or Reality*, SERG Policy Brief (2) Aberdeen: Macaulay Institute
- Tewdwr-Jones, M. Gallent, N. and Morphet, J. (2010) 'An Anatomy of Spatial Planning: Coming to Terms with the Spatial Element in UK Planning', *European Planning Studies*, 18: 2, 239 — 257
- Vigar, J. (2009) Towards an Integrated Spatial Planning? *European Planning Studies*, 17 (11) 1571 – 1590
- Wood, C (2008) 'Progress with Development Plan Documents: Lessons Learnt in England?', *Journal of Planning and Environment Law*, March, pp.265-274.

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Sustainable Futures | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value⁶: 7.5 | |
| Module Leader: Dr Rachel Curzon (with Prof Martin Price responsible for field component for those studying the Mountains to City theme) | |
| Module start date(s) during the current academic year: January 2014 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: Coursework 50%, Exam 50% | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

⁶ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module reflects the key emphasis of the course on current topics in planning and sustainable development discourse. It is underpinned by issue-led debate concerning alternative future planning strategies with a particular focus on contemporary aspects of environmental sustainability. In order to take into account the changing nature and importance of issues over time, the module has a contemporary and varied diet housed in a flexible thematic structure. The additional (non-assessed) study visit undertaken by students studying the Mountains to City theme helps them explore the interface between natural and human systems, and provide an understanding of economic, environmental and/or cultural/social perspectives in the pursuit of environmental sustainability.

Indicative content

The module focuses on two main themes as described below:

Theme 1: Environmental challenges

- Sustainability revisited – a critical view
- Critical debates concerning the definition, and labelling of, projects as sustainable
- Alternative responses to environmental challenges, including a range of good practice projects from Europe and beyond, with a particular focus on examples from the study visit(s)

Topics may include: water management, transport, technology, green architecture, renewable energy, rural issues, conservation and measuring and applying sustainability in a real life context.

Theme 2: Conjectural debate issues

- Future urban and rural forms
- Critical appraisal of future planning strategies and theories
- Extending civic participation and inclusion: radical planning / communicative planning

Topics may include: urban design, density, mixed use, food production, sustainable living, socio-economic aspects of sustainability, Corporate Social Responsibility, attitudes to sustainability, consumerism, behavioural change and the impact of economic decline on planning and the environment.

To further illustrate these themes and add depth to the learning experience, students undertake a study visit in Europe, and this is supplemented by an additional optional study visit in Scotland for those studying the Mountains to City theme, in collaboration with the Centre for Mountain Studies at UHI Perth Field Studies module, co-ordinated by Prof Martin Price).

Students studying the Mountains to City theme will join with colleagues from Perth UHI to undertake an investigation of the management of sustainable (rural) development and present their findings in a group presentation in the field. Although fieldwork is not formally assessed, it provides additional depth of learning that can inform assessed coursework and exam work.

Study mode / delivery method(s):

A variety of methods of delivery will be utilised including: lectures, seminars, Action Learning Sets and tours and activities relating to the study visit and any day trips. Visiting tutors will be used on an occasional basis to provide a practice based approach, drawing on real life examples and experience. Individual study is also expected to form a substantial component. Classroom activities and private study will be supported by Moodle where all lecture notes, with additional relevant information, will be housed.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|--|
| 1. Develop a sound knowledge base on contemporary issues and evaluate the implications for the environment, society and planning. | <u>Learning Outcomes 1 and 2</u> Lectures, seminars and study visits will assist in achieving Learning Outcomes 1 and 2. Learning Outcome 1 will be assessed within both the exam and coursework. Learning Outcome 2 will be assessed in the exam. Formative assessment will also be used to support the achievement of both these Learning Outcomes. |
| 2. Critically debate global, national and local examples. | |
| 3. Appraise various options for the future of the built and natural environment, and the planning process including the role of society. | |
| 4. Enhance written and verbal communication skills and reflect critically on activities and experience. | <u>Learning Outcome 3</u> Lectures and seminars, supported by formative assessment, will aid in the attainment of this outcome. Achievement will be assessed through the coursework. |
| | <u>Learning Outcome 4</u> The achievement of Learning Outcome 4 will be supported through lectures, classroom activities and supporting material on Moodle. The coursework will assess written skills whereas the exam will examine the ability to critically reflect. Verbal communication skills will be assessed through formative assessment only. |

Assessment and feedback**Formative Assessment**

During the course of the module there will be opportunities in the classroom to engage in debates, group activities and workshops. Involvement in such activities will offer formative feedback from peers.

Formative feedback from module tutors will take place during seminars and through the

online forum.

Summative Assessment

There are two interrelated assessment deliverables for this module:

Deliverable 1. Coursework – individual written submission.

The coursework is in the form of a portfolio that presents and discusses a series of topics which relate to the themes of the module. This should be set within the general context of sustainability. You may choose to focus on the UK or offer a more international flavour if you wish. You should use the taught sessions to identify appropriate topics. Sections should be linked together via a central commentary that builds towards a conclusion. This deliverable will assess academic theory.

Further guidelines and details of the format will be given in the coursework document.

Deliverable 2. Exam – a 2 hour written exam will take place at the end of the module, that will assess the practical application of the academic theory discussed in deliverable 1.

Further guidance in preparation for this will be provided in class.

Feedback

Formative feedback will take place during seminars and through online forum.

For the exam, general feedback will be available via Moodle whereas students will receive individual written feedback on their coursework.

Further tutorial support is available on request.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Given the nature of this module it is advised that students frequently search academic journals for recent papers and critical reviews on contemporary issues. Links to these resources including relevant web sites and professional journals will be given on Moodle and highlighted during the course as appropriate.

The following provides an indicative list of more traditional learning resources (books):

Barr, S. (2008) *Environment and society : sustainability, policy and the citizen* Ashgate,

Aldershot

- Barrie Pittock A (2005) *Climate Change – Turning up the Heat*, Earthscan, London
- Barton, H. Grant, M. and Guise, R (2010) *Shaping neighbourhoods : for local health and global sustainability*, Routledge, London
- Bell S & Morse S (2008) *Sustainability indicators: measuring the immeasurable?* Earthscan, London
- Blair F and Evans B (2004) *Seeing the bigger picture: delivering local sustainable development* Joseph Rowntree, York
- Brand, P. (2005) *Urban Environmentalism*, Routledge, London
- Bulkeley, H. and Betsill, M. (2003) *Cities and Climate Change*, Routledge, London
- Gibson R.B., Hassan S., Holtz S., Tansey J., Whitelaw (ed.), (2005) *Sustainability Assessment – Criteria, Processes and Applications*, Earthscan, London
- Howes, Hugh (2008) *Strategic Planning for Water*, Taylor and Francis, London and New York
- Jones, C. (2005) *Strategic Environmental Assessment and Land Use Planning: An International Evaluation*, Earthscan, London
- Keiner, M., Koll-Schretzenmayr, M. and Schmid, W.A.(eds) (2005) *Managing urban futures : sustainability and urban growth in developing countries* Ashgate, Aldershot
- Kemp D (2004) *Exploring Environmental Issues*, Routledge, London
- Low, N. (et al) (2005) *The Green City*, Routledge, London
- Miller C., (2001) *Planning & Environmental Protection* Hart, Oxford
- Page, E. A. (2007) *Climate change, justice and future generations* Edward Elgar, Cheltenham
- Prior, Josephine (2008) *Sustainability through planning : local authority use of BREEAM, ecohomes and the code for sustainable homes* Building Research Establishment, UK
- Stallworthy, M. (2002) *Sustainability, Land Use and Environment*, Cavendish, London
- Wheeler, S. and Beatley, T. (2006) *The Sustainable Urban Reader*, Routledge, London
- Wheeler, S. (2006) *Planning for Sustainability*, Routledge, London

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Green Design | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value⁷: 7.5 | |
| Module Leader: Paul Laycock | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: January 2014 | |
| Assessment weightings: 100% Coursework Portfolio | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

⁷ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

Good design lies at the heart of 'green' thinking and sustainable development. This module aims to give students a deep understanding of the options available for the design and construction of 'greener' buildings. The advantages and disadvantages of different approaches will be discussed within the broad context of environmental sustainability.

Indicative content

This module introduces students to a range of technologies, techniques and methodologies related to the design and maintenance of buildings. It emphasises the need for life-cycle thinking and stresses the fact that there is much more to 'green' buildings than the use of 'bolt-on' technologies. The module starts with a discussion of the general principles of green architecture and design methods along with an overview of the main standards and measures in use such as BREEAM, the Code for Sustainable Homes and Passivhaus. The main part of the module is concerned with specific design considerations including location and environment; types of building materials; thermal mass principles; the differing requirements of new build and refurbishment projects; insulation, glass and lighting; HVAC; and façade engineering. The module concludes with a look at the importance of internal environments and building services.

Study mode / delivery method(s):

The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on cases studies; group based on student-centred research; and Moodle based forums.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Appraise current sustainable design and technological developments and apply them to specific scenarios. | The module will use a blend of learning and teaching styles that include lectures and small group seminars; practical workshops; group based student-centred research; and Moodle based forums. |
| 2. Justify solutions to specific development scenarios in a context of current and accepted regulatory, design, technological, social, etc settings. | |
| 3. Demonstrate an ability to argue rationally and draw independent conclusions based on a rigorous, analytical and critical approach to data. | |

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| <p>4. Show an ability to undertake research, critically evaluate and interpret knowledge, concepts and ideas on a chosen topic and related areas.</p> | |
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Assessment and feedback

Formative Assessment

The module is 100% coursework. This module uses a 'patchwork portfolio' approach to assessment.

During the module students are required to submit one short deliverable (known as a patch) that is submitted and assessed. The deliverable is a 750 word proposal for a subsequent A3 illustrated report that forms the major summative element of the module assessment.

Feedback is given to students via Moodle. The intention is that students receive individual feedback during the module and guidance/coaching can be provided should it be required by the student. Whilst explicitly formative in nature, the patch is allocated 20% of the overall module mark.

Summative Assessment

Students are required to produce an A3 illustrated research design proposal with an associated literature review for the study of a sustainable technology, technique or methodology.

Summative assessment in the patchwork portfolio is a progression of the work carried-out by students for the in-module patch. Contributing 80% of the overall module mark, the final report is a new piece of work in its own right, but draws upon the analysis and research conducted for the 'formative' patch.

Feedback

Feedback is provided to on an individual basis to students via Moodle for their patch.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle is used as the central repository of learning resources and a great emphasis is placed on a balance of text and non-text resources. Links to other resources including relevant web sites and professional journals are also given on Moodle.

The following provides an indicative list of more traditional learning resources (books). Other sources of information will be highlighted during the course as appropriate.

Adisa, A. (2004) *Sustainable Development in Practice: Case Studies for Engineers and Scientists* Wiley Blackwell.

Bennetts, H. Radford, A. Williamson, T (2003) *Understanding Sustainable Architecture*. Spon Press. London.

Dalal-Clayton, B. & Bass, D. (2003) *Sustainable Development Strategies: A Resource Book* Earthscan Ltd.

Epstein M.J., (2008) *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts* Greenleaf Publications

Hall, K. (Editor) (2008) *The Green Building Bible, Volume 1 (4th edition)* Green Building Press

Halliday, S. (2007) *Sustainable Construction* Butterworth-Heinemann

McDonald, R. (2003) *Introduction to Natural and Man-Made Disasters and Their Effects on Buildings* Elsevier. London.

Minke, G. (2006) *Building With Earth: Design and Technology of a Sustainable Architecture*. Birkhauser Basal. Switzerland.

Pelling, M. (2003) *The Vulnerability of Cities: Natural Disasters and Social Change* Earthscan. London.

Reece, M. (2003) *Our Final Century: Will Civilisation Survive the Twenty-First Century?* Arrow Books. London.

Roaf, S., Crichton, D. & Nicol, F. (2009) *Adapting Buildings and Cities for Climate Change: A 21st Century Survival Guide (2nd ed)* Elsevier. London.

Sloman, L. (2006) *Car Sick: Solutions for Our Car-addicted Culture* Green Books. Totnes

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Energy Technologies | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value⁸: 7.5 | |
| Module Leader: Roger Wall | |
| Module start date(s) during the current academic year: January 2014 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

⁸ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

Energy plays a fundamental role in our society today. Any discussion of sustainable development needs to consider how supply and demand will be managed in the future. This module aims to give students an introduction to the fundamentals of energy. It includes discussion of current and emerging generation technologies and also techniques related to energy efficiency and management that can be used within the context of sustainable development.

Indicative content

This module will introduce students to a wide range of energy technologies related to property, construction and sustainable development. It starts by considering the fundamentals of energy and the problems associated with our current dependency on fossil fuels. The module then examines energy policy in terms of demand, security of supply and the possibilities offered by renewables; nuclear; clean coal; and carbon capture and sequestration. The middle part of the module is concerned with an in-depth look at some of the renewable options available including solar energy; heat pumps; hydro-power; and wind energy. It concludes with a discussion of energy efficiency and the implications of other technologies such as greywater harvesting and water recycling; monitoring and management systems; and emergent biotechnologies.

Study mode / delivery method(s):

The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on cases studies; action learning sets based on student-centred research; and Moodle based forums.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Evaluate the current situation relating to the demand of energy and its supply from a national and global perspective. | The module will use a blend of learning and teaching styles that include lectures and small group seminars; practical workshops; action learning sets based on student-centred research; and Moodle based forums. |
| 2. Compare a range of energy generation technologies and appraise their respective advantages and disadvantages. | |
| 3. Make a case supporting the need for energy conservation and efficiency measures. | |

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| 4. Consider the way energy supply and demand are likely to change in the future and assess a range of possible scenarios. | |
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Assessment and feedback

Formative Assessment

During the course of the module there will be opportunities in the classroom to engage in debates, group activities and workshops. Involvement in such activities will offer formative feedback from peers.

Formative feedback from module tutors will take place during seminars and through the online forum.

Summative Assessment

The assessment for this module consists of 100% coursework.

The coursework is in the form of a portfolio that presents and discusses a series of four topics which relate to the central themes of the module.

Feedback

Assessed work will be returned to students within 4 (working) weeks of submission with written comments and marks. Students should note the comments and seek to use them in improving their future work.

Staff are available to give advice and guidance during the coursework surgery and revision sessions, additional tutorials can be booked in advance.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle is used as the central repository of learning resources and a great emphasis is placed on a balance of text and non-text resources (such as video-casts (e.g. iPlayer and 4oD) and podcasts (such as Radio 4 iPlayer)). Links to other resources including relevant web sites and professional journals are also given on Moodle.

The following provides an indicative list of more traditional learning resources (books). Other sources of information will be highlighted during the course as appropriate.

Boyle, G. (Editor) (2004) *Renewable Energy* Oxford University Press

Boyle, G., Everett, B., Ramage, J. (Editors) (2003) *Energy Systems and Sustainability* Oxford University Press

Hall, K. (Editor) (2008) *The Green Building Bible, Volume 1 (4th edition)* Green Building Press

Hall, K. (Editor) (2008) *The Green Building Bible, Volume 2 (4th edition)* Green Building Press

Halliday, S. (2007) *Sustainable Construction* Butterworth-Heinemann

Hoffman, A. (2007) *Carbon Strategies: How Leading Companies Are Reducing Their Climate Change Footprint* The University of Michigan Press

MacKay, D. (2009) *Sustainable Energy – Without the Hot Air* UIT Cambridge, UK

Rifkin, J. (2002) *The Hydrogen Economy* Polity Press

Roberts, P. (2004) *The End Of Oil* Bloomsbury

Scragg, A. (2005) *Environmental Biotechnology (2nd Ed)* Oxford University Press

Twidell, J. & Weir, T. (2005) *Renewable Energy Resources* Spon Press

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Research Project | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability (Some common elements with MA Environmental and Spatial Planning) | |
| Date of publication of template to students: | |

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| Module Code: | Level: 7 |
| Credit value: 60 | |
| ECTS Credit Value⁹: 30 | |
| Module Leader: Professor Peter Larkham | |
| Module start date(s) during the current academic year: January 2014 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: Literature Review essay (up to 4,000 words, 25%) Research Methods essay (up to 4,000 words, 25%) Research Paper (refereed journal paper format) (up to 8,000 words, 50%) | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

⁹ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

The Research Project is a major piece of individual work that allows students to build their understanding and expertise in a selected area of specialised study. It involves use of appropriate research approaches and skills, abilities to theorise and conceptualise, and encourages students to make connections between theory and practice in a selected specialist topic. It promotes independent and reflective learning in order to demonstrate ability to think and write at Master's level.

Indicative content

For the Research Approaches component:

- defining research: problem identification, aims, objectives
- identifying and critically reviewing the research context
- qualitative data collection and analysis
- quantitative data collection and analysis
- assessment of appropriate approaches for particular research issues
- research ethics
- health and safety considerations in research
- research communication skills

For the Research Specialism component, students will be able to develop their interests and knowledge in a chosen area of special expertise within the broad remit of environmental sustainability.

Study mode / delivery method(s):

This is a 60-credit module, delivered as follows:

Research specialism (individual work on developing specialist focus including literature review) 15 credits. Introductory lectures, then whole- and small-group workshops and presentations to monitor individual progress.

Research approaches (reviewing range of qualitative and quantitative research approaches, together with other appropriate research issues including ethics, health & safety, etc) 15 credits. Largely lecture based, with selection of concepts to underpin individual research also being supported through Action Learning Sets.

Research paper (individual research of a specialist aspect of environmental sustainability) 30 credits. Individual research by the student, supported by Action Learning Sets and individual staff supervision tutorials.

Electronic support will be available through Moodle.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|---|--|
| <p>1. For the Research Approaches:</p> <ul style="list-style-type: none"> • demonstrate knowledge of a range of research methods and techniques in appropriate breadth and depth • review a range of research and investigative approaches, selecting those most relevant to the chosen topic area • link theory, method and practice and reflect on the assumptions in methods and techniques of analysis used | <p>Lectures, workshops</p> <p>Relevance to emerging individual specialist interest is explored through Action Learning Sets and individual tutorials</p> |
| <p>2. For the Research specialism:</p> <ul style="list-style-type: none"> • Reflect in depth upon the place of environmental sustainability in relation to the differing interests of societal stakeholders at local and/or global levels • Develop specialist knowledge of the concepts and literature of a specialised aspect of sustainable development • Carry out a literature review of a specialist aspect of sustainable development, focusing on the identification of a particular research topic | <p>Lectures, workshops</p> <p>Independent learning: identification and investigation of specialist topic</p> |

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| <p>3. For the Research Paper:</p> <ul style="list-style-type: none"> • be able to design and undertake a piece of individual research related to a specialist aspect of sustainable development • link theory, method and practice and reflect on the assumptions in methods and techniques of analysis used; • demonstrate appropriate use of the tools of scholarship and of written communication to produce a sustained argument; and • successfully manage your own time and workload, and the contributions of others in the research process, to produce an appropriate submission on time. | <p>Independent learning: research on the selected topic leading to production of the refereed journal paper or professional report.</p> <p>Supported through Action learning Sets and individual staff supervision.</p> |
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Assessment and feedback

Formative Assessment

Formative assessment throughout this 60-credit module, which spans an entire academic year, is principally through meetings of Action Learning Sets and tutorials with an individual research supervisor.

Additionally there are more structured formative assessment points, especially individual presentations and workshop contributions (Research Specialism and Research Approaches) and a progress review presentation (Research Paper).

Summative Assessment

Research specialism literature review, including identification of focus (including aims/objectives) for individual research project (up to 4000 words, 25% of module)

Research approaches methodology essay (up to 4000 words, 25% of module)

Research paper: summary of individual specialist research equivalent to a refereed journal paper or professional report (up to 8000 words, 50% of module)

All three elements of summative assessment form the required assessment for the award of MSc Environmental Sustainability. The combined mean mark of all three assessments must be 50%.

Feedback

Formative feedback, through the mechanisms identified above, will be available throughout this module; and individual feedback tutorials on request can be arranged at any time.

Written feedback on the literature review and methodology essay will be available not later than 4 weeks from submission, not later than half way through the academic year.

The final paper is submitted at the end of the academic year, and written feedback is available after the final examination board. Provisional marks are not published before this board as the full marking and review process, including the external examiners, is not completed earlier.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

For the Research Approaches:

Barbour, R. (2007) *Introducing qualitative research: a student's guide to the craft of doing qualitative research* Sage, London

Hart, C. (1998) *Doing a literature review: releasing the social science research imagination* Sage, London

Hart, C. (2001) *Doing a literature search: a comprehensive guide for the social sciences* Sage, London

Israel, M. and Hay, I. (2006) *Research ethics for social scientists* Sage, London

Punch, K.F. (2005) *Introduction to social research: quantitative and qualitative approaches* Sage, London (2nd edition)

Singh, K. (2007) *Quantitative social research methods* Sage, London

Yin, R.K. (2003) *Case study research: design and methods* Sage, London (3rd edition)

For the Research Project:

Becker, H.S. (1998) *Tricks of the trade: how to think about your research while you're doing it* University of Chicago Press, Chicago

Bell, J. (2005) *Doing your research project* Open University Press, Maidenhead (4th edition)

Blaxter, L., Hughes, C. and Tight, M. (1996) *How to research* Open University Press, Buckingham

Hart, C. (2004) *Doing your masters dissertation* Sage, London

- Howard, K. (1978) *Managing the thesis* University of Bradford Management Centre, Bradford
- Leedy, P. and Ormrod, J. (2001) *Practical research: planning and design* Prentice Hall, New Jersey (7th edition)
- Rudestam, K.E. and Newton, R.R. (2007) *Surviving your dissertation: a comprehensive guide to content and process* Sage, London (3rd edition)
- Thomas, R.M. and Brubaker, D.L. (2007) *Theses and dissertations: a guide to planning, research and writing* Sage, London (2nd edition)

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| Faculty: TEE | School/Department: Built Environment |
| Module Title: Design Project | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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| Module Code: | Level: 7 |
| Credit value: 60 | |
| ECTS Credit Value ¹⁰ : 30 | |
| Module Leader: Paul Laycock | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: September 2014 | |
| Assessment weightings: 100% Portfolio | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹⁰ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

The Design Project is a major piece of individual work and allows students to build their levels of understanding and expertise. It involves the use of appropriate design approaches and skills, challenges students' abilities to conceptualise, and encourages them to make connections between theory and practice whilst solving the design problem. The Design Project promotes independent and reflective learning in order for students to demonstrate their ability to work at Master's level.

Indicative content

The Design Project represents a bringing together of many of the skills learned throughout the course used by the designer in practice.

This substantive piece of work will revolve around a client brief for the design of a fully sustainable solution to that brief. The nature of the module is that each student will consider the brief and, throughout the project, undertake self directed study and self development in investigating and providing a solution to that brief.

Specifically, the student will work from a project brief to:

1. Investigate the design brief as a design problem or a series of design problems.
2. Investigate solutions to the problems.
3. Use various presentation media to produce and present a solution to the design problems. Students will be encouraged to use both physical and electronic drawings and a variety of drawing styles and types to represent their designs.
4. Justify these solutions by reference to industry norms and requirements to meet the appropriate parts of the varying sustainability agendas.
5. Reflect on the chosen solution.
6. Be able to demonstrate, through the keeping of a comprehensive design diary, how the design has evolved throughout the module.

Study mode / delivery method(s):

The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on precedence studies; action learning sets based on student-centred research; and Moodle based forums.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Demonstrate an ability to work autonomously in the undertaking of research, critically evaluate and interpret knowledge, concepts and ideas using a range of recognised research techniques and be able to justify the reliability of the information used. | The module will use a blend of learning and teaching styles that include lectures and small group seminars; practical workshops; action learning sets based on student-centred research; and Moodle based forums. |
| 2. Be able to understand and interpret in their own words client and development requirements and influences and reply to them with a range of suitable solutions. | |
| 3. Be able to receive feedback on design work and independently evolve their ideas and solutions in line with that feedback while still maintaining compliance with regulatory requirements and the various sustainability agendas. | |
| 4. Demonstrate the use of a variety of forms of communication and expression in order to present their design work in a consistent and well-referenced form. | |
| 5. Demonstrate an ability to present critically evaluated rational arguments and conclusions based on a rigorous, analytical and critical approach to data from self directed research. | |
| 6. Be able to reflect on and justify design solutions in the context of regulatory requirements and the various sustainability agendas. | |

Assessment and feedback

Formative Assessment

The module is 100% coursework.

The delivery of this module concerns itself with informing on theory and development of skills around the analysis of existing development.

Formative assessment will be provided through class and student specific workshops on their self directed investigation.

Summative Assessment

For this module students are required to:

Present and submit an initial reply to the clients brief. The presentation will take the form of a 30 minute presentation with support material. (20%)

This will be followed by one 30 page A3 (some pages may be larger and folded to A3 size) illustrated report to describe the evolved design solution to the brief (40%).

The project will culminate in a design show where the students will display and answer questions on:

1. A design diary
2. Key drawings from their previous hand-ins
3. A physical model of the development
4. 4 x A1 display boards highlighting and explaining sustainable aspects of their design work

All of the above will be handed in for marking after the show. (40%)

Feedback

Feedback is provided on a group basis via the class workshops and on an individual basis via individual meetings and direct on submitted work.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle will be used as a central repository of multi-media resources including selected reading. The following books give an indication of suggested reading:

Adisa, A. (2004) *Sustainable Development in Practice: Case Studies for Engineers and Scientists*, Wiley Blackwell.

Barrow, C. (2006) *Environmental Management for Sustainable Development (Routledge Introductions to Environment)*, Routledge 2nd ed.

Berners-Lee, M.(2010) *How Bad Are Bananas?: The carbon footprint of everything*, Green Profile

Boyle, G. (Editor) (2004) *Renewable Energy*, Oxford University Press

- Boyle, G., Everett, B. & Ramage, J. (Editors) (2003) *Energy Systems and Sustainability*, Oxford University Press
- Dalal-Clayton, B. And Bass, D. (2003) *Sustainable Development Strategies: A Resource Book*, Earthscan Ltd.
- Epstein M.J., (2008) *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts*, Greenleaf publications
- Hall, Keith (Editor) (2008) *The Green Building Bible, Volume 1 (4th edition)*, Green Building Press
- Hall, Keith (Editor) (2008) *The Green Building Bible, Volume 2 (4th edition)*, Green Building Press
- Halliday, Sandy (2007) *Sustainable Construction*, Butterworth-Heinemann
- Hoffman, Andrew (2007) *Carbon Strategies: How Leading Companies Are Reducing Their Climate Change Footprint*, The University of Michigan Press
- Kilbert C. (2007) *Sustainable Construction: Green Building Design and Construction 2nd Ed.* John Wiley & Son. New Jersey.
- King, C. (2011) *Conscious Design: An Environmentalist's Guide to Sustainable Architecture, Including Low and Zero-Energy Homes, Solar Building Design, Green and Natural Buildings and More.* Webster's Digital Services. London.
- McDonald, R. (2003) *Introduction to Natural and Man-Made Disasters and Their Effects on Buildings.* Elsevier. London.
- Orr, D. W. (2007) *Sustainable Design: Ecology, Architecture, and Planning.* John Wiley & Son. New Jersey.
- Pelling, M. (2003) *The Vulnerability of Cities: Natural Disasters and Social Change.* Earthscan. London.
- Peters, S. (2011) *Material Revolution. Sustainable and Multi-Purpose Materials for Design and Architecture: Sustainable Multi-Purpose Materials for Design and Architecture.* Birkhauser Basal. Switzerland.
- Reece, M. (2003) *Our Final Century: Will Civilisation Survive the Twenty-First Century?* Arrow Books. London.
- Ritchie, A. Thomas, R. (2009) *Sustainable Urban Design: An Environmental Approach.* Taylor Francis. London.
- Roaf, S., Crichton, D. & Nicol, F. (2009) *Adapting Buildings and Cities for Climate Change: A 21st Century Survival Guide (2nd ed).* Elsevier. London.
- Sloman, L. (2006) *Car Sick: Solutions for Our Car-addicted Culture.* Green Books. Totnes.

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|--|--------------------------------|
| Faculty: TEE | School/Department: BSBE |
| Module Title: Sustainable Design Practice | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value¹¹: 7.5 | |
| Module Leader: Paul Laycock | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: January 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹¹ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module is designed to build on and complement the 'Green Design' module for those students following the 'Design and Construction' pathway and wanting a more in-depth study of design strategies and practice. It adopts a case study based approach offering students exposure to a broad range of environmental considerations and design solutions. These solutions are analysed and discussed in the context of sustainable business development with regard to their ability to satisfy current regulatory, design, technological and social requirements and also for their ability to meet likely changes to these requirements in the future.

Indicative content

The module introduces the students to a range of theoretical concepts and appraises them through the evaluation of a series of case studies. It focuses on the creation of a sustainable, suitable and successful internal space from the intelligent, considerate and innovative use of materials, components, technologies and techniques. This focus is grounded within the broader context of contemporary sustainable business practices and the implications of the 2050 target for the reduction of carbon emissions specified in The Climate Act 2008. The module will also concern itself with an examination of development use at present and predictions for the future; key stakeholders in development; the variety and types of development users and evaluate their varied criteria for a successful development. The module will conclude by bringing these areas together in the context of identifying key concepts and concerns for sustainable and successful future development.

Study mode / delivery method(s):

The module will use a blend of learning and teaching styles that include lectures and small group seminars; workshops based on cases studies; action learning sets based on student-centred research; and Moodle based forums.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Demonstrate an ability to undertake a suitable level of self directed research in the selection of appropriate case study material. | The module will use a blend of learning and teaching styles that include lectures and small group seminars; practical workshops; action learning sets based on student-centred research; and Moodle based forums. |
| 2. Be able to carry out appropriate investigations in the appraisal of past and current development case studies, make informed decisions and arrive at informed conclusions on the success of those case studies with regard to the creation of a suitable and successful internal environment. | |

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| 3. Demonstrate an ability to present critically evaluated rational arguments and conclusions from self directed research around the success and suitability of case study developments. | |
| 4. Be able to justify solutions to specific development scenarios in a context of stakeholders and users and their criteria for success for those scenarios. | |

Assessment and feedback

Formative Assessment

The delivery of this module concerns itself with informing on theory and development of skills around the analysis of existing development.

Formative assessment will be provided through class and student specific workshops on their self directed investigation.

Summative Assessment

The module is 100% coursework with 2 deliverables.

Deliverable 1: Present and submit a focused precedence analysis around two case study developments. The presentation material will take the form of 4 x A2 annotated visual presentation boards. (50%)

Deliverable 2: Produce one 10 page A3 illustrated report that gives a justified solution to a development scenario. (50%)

Feedback

Feedback is provided on a group basis via the class workshops and an individual basis via individual meetings and direct on submitted work.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students studying this module are required to take the 'Green Design' module and two additional modules. Refer to the course structure diagram for details.

Learning Resources

Moodle is used as the central repository of learning resources and a great emphasis is placed on a balance of text and non-text resources. Links to other resources including relevant web sites and professional journals are also given on Moodle.

The following provides an indicative list of more traditional learning resources (books). Other sources of information will be highlighted during the course as appropriate.

Adisa, A. (2004) *Sustainable Development in Practice: Case Studies for Engineers and Scientists*, Wiley Blackwell.

Barrow, C. (2006) *Environmental Management for Sustainable Development (Routledge Introductions to Environment)*, Routledge 2nd ed.

Berners-Lee, Mike (2010), *How Bad Are Bananas?: The carbon footprint of everything*, Green Profile

Boyle, Godfrey; Everett, Bob; Ramage, Janet (Editors) (2003), *Energy Systems and Sustainability*, Oxford University Press

Dalal-Clayton, B. And Bass, D. (2003) *Sustainable Development Strategies: A Resource Book*, Earthscan Ltd.

Epstein M.J., (2008) *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts*, Greenleaf publications

Hall, Keith (Editor) (2008), *The Green Building Bible, Volume 1 (4th edition)*, Green Building Press

Hall, Keith (Editor) (2008), *The Green Building Bible, Volume 2 (4th edition)*, Green Building Press

Halliday, Sandy (2007), *Sustainable Construction*, Butterworth-Heinemann

King, C. (2011) *Conscious Design: An Environmentalist's Guide to Sustainable Architecture, Including Low and Zero-Energy Homes, Solar Building Design, Green and Natural Buildings and More*. Webster's Digital Services. London.

Orr, D. W. (2007) *Sustainable Design: Ecology, Architecture, and Planning*. John Wiley & Son. New Jersey.

Pelling, M. 2003) *The Vulnerability of Cities: Natural Disasters and Social Change*. Earthscan. London.

Reece, M. (2003) *Our Final Century: Will Civilisation Survive the Twenty-First Century?* Arrow Books. London.

Roaf, S. Crichton, D. & Nicol, F. (2009) *Adapting Buildings and Cities for Climate Change: A 21st Century Survival Guide 2nd Ed*. Elsevier. London.

Sassi, P. (2008) *Strategies for Sustainable Architecture*. Taylor & Francis.

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|--|--------------------------------|
| Faculty: TEE | School/Department: BSBE |
| Module Title: Innovation in Construction | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability MSc Construction Project Management | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value ¹² : 7.5 | |
| Module Leader: Niraj Thurairajah | |
| Module start date(s) during the current academic year: January 2014 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹² ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module aims to develop a critical awareness of processes involved in the delivery of construction projects. Students will learn about new and innovative practices together with the issues involved in facilitating and implementing innovation. On completion, students will have the capability to change project and construction management practice.

Indicative content

The module will consider change as an innovation process.

It will consider and critique past examples from: construction project procurement at personal, team, project and organisational levels; supply chain management; contracts; the management of risk; and the application of strategic approaches to meet the needs of clients, stakeholders and users.

The unit will also explore the creative, and implementation processes involved in innovation as well as developing critiques of new approaches in the industry to enable students to assess the value of these in differing situations.

Finally, it will explore wider aspects of change management including resistance and inertia at both an organisational and individual level in order to assist the student to be able to create strategies for managing change.

Study mode / delivery method(s):

The teaching and learning methods are designed to develop skills in the analysis and evaluation of innovative and change situations at an advanced level.

The format of the module will be a combination of lectures and seminars, incorporating individual and group activities.

It is expected that students will actively participate in class exercises during which students will be expected to work in groups and present their findings in respect of scenarios / case studies.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

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| <ol style="list-style-type: none"> 1. Identify and define innovation issues, trends and risk management principles influencing the construction process. 2. Evaluate the appropriateness of current and innovative process models and organisational structures for the practice of construction procurement and debate the appropriateness of these models and structures. 3. Use analytical and research skills to critically assess organisational structures and the way that they accommodate change. 4. Devise a strategy for change for the introduction of a novel technology or process. | <p>The teaching and learning methods are designed to develop skills in the analysis and evaluation of innovative and change situations at an advanced level.</p> <p>The format of the module will be a combination of lectures and seminars, incorporating individual and group activities.</p> <p>It is expected that students will actively participate in class exercises during which students will be expected to work in groups and present their findings in respect of scenarios / case studies.</p> <p>All students are given a programme of study which includes an outline of lecture topics, recommended reading, assessment requirements and a marking scheme. There is a dedicated Moodle site for this module, which provides students access to additional materials, e.g. PowerPoint presentations, links to academic articles and other web-based resources.</p> <p>The module will take advantage of site visits and an international residential visit to inquire into different cultural approaches to the development of the industry.</p> |
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Assessment and feedback

Formative Assessment

During the course of the module there will be opportunities in the classroom to engage in debates, group activities and workshops. Involvement in such activities will offer formative feedback from peers.

Formative feedback from module tutors will take place during seminars and through the online forum.

Summative Assessment

The assessment will be based on an individual coursework assignment of 4,000 words requiring the development of a substantive argument critically analysing an innovation in practice and presenting an argued strategy that might be more successful.

Feedback

Feedback will be through the provision of specific comments within coursework. The dedicated Moodle site will offer a forum for general discussion, questions and feedback.

Related Modules

Dynamic Natural Environments
Society, Environment and Economics
Law and Environmental Governance
Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

This module has two core texts that can be regarded as essential reading. A number of other texts are also recommended below. Links to other resources including relevant web sites and professional journals will be given on Moodle and highlighted at appropriate times during the course of the module.

Essential Reading:

Shaw, P. (2001) *Changing the conversation in organizations: a complexity approach to change* Routledge, London

Woudhuysen, J. and Abley, I. (2003) *Why is construction so backward?* John Wiley & Sons, Chichester

Recommended Reading:

Boyd, D. (ed) (1994) *Intelligent buildings* Alfred Waller, Henley on Thames

Boyd, D. and Chinyio, E. (2006) *Understanding the construction client* Blackwell, Oxford

Cox, A. W. (1998) *Strategic procurement in construction: towards better practice in the management of construction supply chain* Thomas Telford, London

Gann, D.M. (2000) *Building innovation: complex constructs in a changing world* Thomas Telford, London

Tidd, J. (2005) *Managing innovation: integrating technological, market and organization change* (3rd Edition) John Wiley & Sons, Chichester

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|---|--------------------------------|
| Faculty: TEE | School/Department: BSBE |
| Module Title: Management Toolkit | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability (Some common elements with MSc Real Estate Management & MSc Construction) | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value ¹³ : 7.5 | |
| Module Leader: Dr Julian Lamb | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: January 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹³ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module aims to provide students with an array of management tools that can be applied to problems associated with management of the environment and sustainable development. An understanding of topics such as conflict resolution, cost and profit planning, strategic management and carbon footprinting is essential for the environmental leaders of tomorrow.

Indicative content

This module provides an introduction to the key skill and knowledge dimensions of management practice: interpersonal; financial; strategic management; and the carbon economy. Whilst definable technical skills are delivered, such as budgetary control, an emphasis is placed on the central importance of understanding and examining human-relationships and group processes in any management activity.

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|--|---|
| <i>Interpersonal Skills theme:</i> <ul style="list-style-type: none">• Conflict resolution• Teamwork and leadership | <i>Financial Management theme:</i> <ul style="list-style-type: none">• Budgetary control• Cost and profit planning |
| <i>Strategic Management theme:</i> <ul style="list-style-type: none">• Business definition• Market analysis | <i>Carbon Economy theme:</i> <ul style="list-style-type: none">• Carbon footprinting• Carbon budgeting |

Study mode / delivery method(s):

The module uses a range of teaching methods that encourage students to interact and debate the material. In addition to lectures, the module will use small group sessions, seminars, and workshops.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|--|
| 1. Critically evaluate interpersonal issues and implement strategies to enhance the interpersonal setting. | Teaching will be based on weekly lectures, supplemented with seminar sessions / workshops during which you will work in groups and present your findings in respect of scenarios / case studies. Students are encouraged to engage in the course through Moodle, the university's virtual learning |
| 2. Design and implement financial plans. | |

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| 3. Evaluate the business environment and design strategic business plans. | environment. |
| 4. Assess strategies for carbon management and propose plans to minimise carbon footprint. | |

Assessment and feedback

Formative Assessment

The module is 100% coursework and adopts an approach to coursework known as the 'patchwork portfolio' method.

During the first half of the module students are required to submit one short deliverable (known as a patch - a 750 word mini-report) that is assessed. Feedback is given to students via Moodle. The intention is that students receive formative (but assessed) individual feedback at an early stage during the module so that guidance/ coaching can be provided should it be required by the student. The patch is allocated 20% of the overall module mark.

Summative Assessment

Summative assessment in the patchwork portfolio is a progression of the work carried-out by students for the patch. Contributing 80% of the overall module mark, the final report is a complete piece of work in its own right, but draws significantly upon the analysis and research conducted for the 'formative' patch.

This assessment is based on a case-study of a student-selected UK firm – in doing so the broader theoretical themes are transferred to actual management practice and the prevailing economic environment.

Feedback

Students are given detailed individual feedback half way through the module; e-mailed via Moodle, regarding the formative assessment. Students are also offered the opportunity for individual feedback for the final report at the end of the module.

Related Modules

Dynamic Natural Environments

Society, Environment and Economics

Law and Environmental Governance

Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

Moodle is used as the central repository of learning resources and a great emphasis is placed on a balance of text and non-text resources (such as video-casts (e.g. iPlayer and 4oD) and podcasts (such as Radio 4 iPlayer)). Links to text-based documents are also given on Moodle.

More traditional text based resources (books) include the following indicative reading:

Recommended Reading

Barrow, C. (2009) *The 30 Day MBA* Kogan Page, London

Berners-Lee, M. (2010) *How Bad Are Bananas?: The carbon footprint of everything* Green Profile

Blockley, D. and Godfrey, P. (2000) *Doing It Differently* Thomas Telford, London

Flood, R.L. and Carson, E.R. (1993) *Dealing with Complexity* (2nd ed.) Plenum Press, New York

Handy, C. (2005) *The Empty Rain Coat* Arrow Books, London

Handy, C. (2005) *Gods of Management* Arrow Books, London

Hoffman, A. (2007) *Carbon Strategies: How Leading Companies Are Reducing Their Climate Change Footprint* The University of Michigan Press

Johnson, Scholes and Whittington (2005) *Exploring Corporate Strategy* Prentice Hall, London

Mott, G. (2008) *Accounting for Non-Accountants* Kogan Page, London

Torrington D., Hall, L and Taylor, (2005) *Human Resource Management (sixth edition)*, *Financial Times* Prentice Hall, Harlow, Essex

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|--|--------------------------------|
| Faculty: TEE | School/Department: BSBE |
| Module Title: Cost and Financial Management | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability | |
| Date of publication of template to students: | |

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|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 15 | |
| ECTS Credit Value ¹⁴ : 7.5 | |
| Module Leader: Susan Johnson | |
| Module start date(s) during the current academic year: January 2014 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹⁴ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module aims to give students the practical cost and financial management skills necessary to manage sustainable development within the context of construction.

Indicative content

This module gives students a detailed introduction to the overall cost control processes used throughout a construction project from inception to completion. These processes can be divided into pre-contract and post-contract phases.

- Pre-contract
 - Early cost advice to the client
 - The relationship between building design and cost
 - Documents used in the tender process
 - Tendering procedures by the contractor.
- Post-contract
 - Interim valuations and payments
 - Variations
 - Final accounts
 - Dispute resolution

In addition, the module considers the cost and risk implications associated with sustainable development within the context of construction:

- Implementation of 'green' features
 - E.g. solar photovoltaic panels, ground source heat pumps, green roofs, greywater recycling
- Development to a given BREEAM standard
- Remediation of contaminated land
- Biodiversity

Study mode / delivery method(s):

This module will be developed by a combination of whole group lectures and interactive small group seminars / workshops.

Full details of individual lectures and seminars will be published on Moodle in advance for each teaching week. Students are expected to access these in advance and complete seminar tasks as directed.

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|--|---|
| 1. Evaluate the sources of information, processes and procedures in providing Early Cost Advice. | Lectures and problem based seminars. The learning will be supported by access to information through Moodle, Learning Resources and external agencies / organisations. |
| 2. Identify and recommend the correct documentation and procedures to use in tendering. | |
| 3. Assess the contractor's tender submission process, and identify and evaluate tender documentation and procedures following submission of tenders. | |
| 4. Apply theory and practice to post contract cost control. | |

Assessment and feedback

Formative Assessment

Classroom based whole group discussions of topics contained in lectures and seminars will allow on-going feedback to students.

Summative Assessment

Assessment for this module takes the form of 100% coursework equivalent to a submission of 4,000 words. The coursework will be set to test students' knowledge and understanding of basic tendering procedures and cost issues.

Feedback

The nature of the teaching approach allows for ongoing verbal feedback. The assessed courseworks will be returned with written feedback in a proforma style, normally within four working weeks of submission date.

Related Modules

Dynamic Natural Environments
Society, Environment and Economics
Law and Environmental Governance
Sustainable Development into Practice

In addition to the four core modules listed above, students will study additional modules dependent on the pathway they have chosen. Refer to the course structure diagram for details.

Learning Resources

This module has two core texts that can be regarded as essential reading. A number of other texts are also recommended below. Links to other resources including relevant web sites and professional journals will be given on Moodle and highlighted at appropriate times during the course of the module.

Essential Reading:

Hackett, M, Robinson, I and Statham, G (2007) The Aqua Group Guide to Procurement, Tendering and Contract Administration, Oxford, Blackwell Publishing

JCT Ltd (2002) SFBC 1998 Editions Series 2 Practice Note 6, Main Contract Tendering, London, RIBA Enterprises Ltd

Recommended Reading:

Ashworth, Allan (2002) Pre-Contract Studies : Development Economics, Tendering and Estimating – 3rd ed, Oxford, Blackwell Publishing

Ashworth, Allan (2004) Cost Studies of Buildings, Harlow, Longman

Ashworth, Allan & Hogg, Keith (2007) Willis's Practice and Procedure for the Quantity Surveyor, 12th Ed, Oxford, Blackwell Publishing

Brook, Martin, (2008) Estimating and Tendering for Construction Work, 4th Ed, Oxford, Elsevier Butterworth

CIJC (Current) Working Rule Agreement for the Construction Industry, London, Construction Industry Publications Limited

CIOB (2009) Code of Estimating Practice, 8th Ed, Blackwell Publishing,

JCT Ltd (2005) Standard Building Contract with Quantities including amendments 1 & 2, London, Sweet & Maxwell Ltd

Kirkham, Richard (2007) Ferry and Brandon's Cost Planning of Buildings, 8th Ed, Oxford, Blackwell Publishing

Morton, Ralph (2002) Construction UK : introduction to the Industry, Oxford : Blackwell Publishing

NJCC (1996) Codes of Procedure for Tendering (Various)
Note: many of these codes are now superseded but are still referred to in the industry

Ramus, J, Griffiths, A and Birchall, S (2006) Contract Practice for Surveyors, Oxford, Butterworth Heinemann

RICS (2009) BCIS (Building Cost Information Service) on line or hard copy

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| Faculty: TEE | School/Department: BSBE |
| Module Title: Environmental and Social Issues in Mountain Areas | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability (Mountains to City theme) | |
| Date of publication of template to students: March 2014 | |

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|--|-----------------|
| Module Code: UF811101 | Level: 7 |
| Credit value: 20 | |
| ECTS Credit Value ¹⁵ : 10 | |
| Module Leader: Martin Price (UHI) | |
| Module start date(s) during the current academic year: September 2013 | |
| Module finish date(s) during the current academic year: January 2014 | |
| Assessment weightings: 100% Coursework | |

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| For SRS Team Use Only: | |
| Created By: | Date: |

¹⁵ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module aims to give students an understanding of the various elements of the environmental and societal systems of mountain areas, as a basis for environmental sustainability in mountain areas, and in downstream regions.

Indicative content

This module gives students an understanding of the various elements of the environmental and societal systems of mountain areas, especially in Europe. The integrated understanding of these elements and their interactions is an essential basis for all aspects of sustainable mountain development, which relates to not only mountain areas, but also regions downstream. This includes:

1. Defining mountain areas: topographic, ecological/land cover, cultural, and integrated approaches;
2. Biogeophysical processes and their interactions: geology, climate, soils, ecosystems;
3. Mountain economies, their components, and changes over time: agriculture, forests, mining, water, biodiversity and landscape conservation, hunting, tourism;
4. Patterns of land ownership and use;
5. Changes in demography: driving forces and trends;
6. The interactions of policies at different scales as driving forces of change in mountain areas;
7. Climate change in mountain areas and the potential impacts.

Study mode / delivery method(s):

Distance learning

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|---|---|
| 1. Understand the fundamental elements and processes of the environmental and societal systems of European mountain areas | Distance learning (100%). For all online modules students will require a modern PC with a broadband connection. A compatibility test for e-learning students using the VLE is available here: http://www.uhi.ac.uk/en/lis/vle/blackboard-help/blackboard-browser-setup/ |

| | |
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| 2. Identify and evaluate key interactions between these processes, and drivers of change as a basis for fostering sustainable development in these areas | |
| 3. Analyse and discuss relevant case studies which illustrate these processes and drivers of change in the context of sustainable mountain development | |

Assessment and feedback

Formative Assessment

Via online tutorials

Summative Assessment

Assessment for this module takes the form of 100% coursework, consisting of Essay 1 (2000 words; 40%), Essay 2 (2500 words; 45%) and weekly discussion board tasks (15%).

Feedback

Individual feedback on essays and discussion board tasks.

Related Modules

Sustainable Rural Land Use and Energy (as part of the Mountains to City theme)
Field Studies (as part of the Mountains to City theme)

Learning Resources

Online learning resources are provided for this course via UHI, and these include suggested reading.

| | |
|--|--------------------------------|
| Faculty: TEE | School/Department: BSBE |
| Module Title: Sustainable rural land use and energy | |
| Programme(s) on which the module is delivered: MSc Environmental Sustainability (Mountains to City theme) | |
| Date of publication of template to students: March 2014 | |

| | |
|--|-----------------|
| Module Code: | Level: 7 |
| Credit value: 20 | |
| ECTS Credit Value¹⁶: 10 | |
| Module Leader: Rob McMorran (UHI) | |
| Module start date(s) during the current academic year: January 2014 | |
| Module finish date(s) during the current academic year: May 2014 | |
| Assessment weightings: 100% Coursework | |

| | |
|-------------------------------|--------------|
| For SRS Team Use Only: | |
| Created By: | Date: |

¹⁶ ECTS is the European Credit Transfer and Accumulation System which was developed to promote the international recognition of qualifications and student mobility within Europe.

Relationship with Programme Philosophy and Aims

This module will provide an overview of land use and renewable energy concepts and activities which relate to environmental sustainability in rural communities. The module focuses on opportunities for improving the sustainability of 'traditional' rural land uses and new opportunities for land uses relating to renewable energy.

Indicative content

1. A history of land use and renewable energy in rural Scotland
2. Key drivers for sustainable rural land use and renewable energy
3. Key concepts for sustainable rural land use (ecosystem approach/ multifunctionality/ partnerships/ transition communities)
4. Sustainable rural land use and Scotland's rural communities (Key areas and case studies)
 - Rural/local agriculture and localised (community based) food production
 - Sustainable forestry and community woodlands
 - Estate communities, estate land management and sporting land use
 - Recreation and tourism
 - Nature conservation and biodiversity
5. Renewable energy and rural Scotland
 - Biomass and rural development at the community level
 - Hydro and windpower and rural/community development
 - Other opportunities for linking rural/community development and renewable energy
6. Key issues for renewable energy in rural Scotland
7. Merging renewable energy and sustainable rural land use (case studies of integrated management and community level land use and renewable energy initiatives): Exemplar community woodland case study; Sustainable (integrated) estate management case study (Exemplar community estate); Transition town/village case study.

Study mode / delivery method(s):

Distance learning

Intended Learning Outcomes and the means by which they are to be achieved and demonstrated.

| Learning Outcome | Learning and Teaching Methods |
|---|---|
| 1. Gain an awareness and critical understanding of the policy context and key drivers for sustainable land use and renewable energy as they relate to community development in rural Scotland | Distance learning (100%). For all online modules students will require a modern PC with a broadband connection. A compatibility test for e-learning students using the VLE is available here: http://www.uhi.ac.uk/en/lis/vle/blackboard-help/blackboard-browser-setup/ |
| 2. Develop a broad understanding of the key concepts that relate to sustainable land use and renewable energy in rural Scotland | |
| 3. Able to discuss and write on key ideas in a critical manner – in relation to sustainable land use and renewable energy in rural Scotland (including analysis of cases studies) | |
| 4. Come to their own informed conclusions of the overall relevance of key renewable energy opportunities to sustainable rural development | |

Assessment and feedback

Formative Assessment

Via online tutorials

Summative Assessment

One 2000 word assignment (40%) and one 2500 word assignment (50%), plus weekly discussion input to online discussion board (15%).

Feedback

Individual feedback on essays and discussion board tasks.

Related Modules

Environmental and Social Issues in Mountain Areas (as part of the Mountains to City theme)

Field studies (as part of the Mountains to City theme)

Learning Resources

Online learning resources are provided for this course via UHI, and these include suggested reading.

