Title:	**New Course Proposals**
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Circulation:	Learning and Teaching Committee – 26th October 2011
Agenda:	LTC11A001
Version:	Final
Status:	Open

Issue

Request for approval of the MA/MSc in Environmental Sciences and the Humanities

Recommendation

Recipients are asked to approve this new Masters proposal

Resource Implications

The proposal will require additional postgraduate student numbers

Equality and Diversity

The key selection criteria for admission are the academic ability and potential of the applicant. No applicant will be treated less favourably on grounds of sex, marital status, race, colour, ethnic origin, sexual orientation, disability, political or religious beliefs or any other criterion accepted as relevant by the University's Council.

This course will embrace the University's dedication to the advancement of learning and the increase in knowledge, both to satisfy the aspirations of individuals and to contribute to economic, social and cultural progress. The study of the relationship of humans with their natural environment, in particular its historical, philosophical and literary dimension, will include a variety of cultural perspectives.

This course will embrace the University's continued development of its quality assurance systems to monitor and identify any differential impact on any student arising from policy or practice in admissions and teaching and assessment

Timing of decisions

It is proposed to run this course from 2012/13 and promotion and advertising of it will commence as soon as LTC approval has been received.

Further Information

This course is administered by the School of Philosophy and will be run in conjunction with ENV, HIS and LIT. The Course Director is Dr Angela Breitenbach (A.Breitenbach@uea.ac.uk).

Background

This new course will form part of a major initiative by the University to develop its standing as the primary location for environmental studies from a variety of perspectives, including the

humanities as well as the natural and social sciences. It ties in with the concurrent development of a regular research seminar in collaboration between the humanities and environmental sciences which will enable candidates to follow, and take part in, the research that is currently being undertaken in their subject. Moreover, the course is set up at a time when the University is aiming to realise its wider ambition of becoming an institution that not only preaches but practices sustainability in academia. It will attract major attention both within and beyond the academy and will enhance the reputation of the University as a major centre for environmental studies.

Discussion

Recipients are asked to approve an interdisciplinary MA/MSc in Environmental Sciences and Humanities.

MA/MSc in Environmental Sciences and Humanities
At the University of East Anglia

For further information please contact Dr Angela Breitenbach
(A.Breitenbach@uea.ac.uk)

1. Outline

The MA/MSc in Environmental Sciences and Humanities is an innovative and truly interdisciplinary one-year Master's course, combining different approaches from the sciences and humanities for thinking about our relationship with the natural world. It brings together researchers in the environmental sciences, philosophy, history and literature to develop new ways of thinking about environmental change and social transitions, and to reflect on the strengths and weaknesses of our different approaches. The course is strongly orientated towards developing the insights of interdisciplinary work for policy-making.

The course has three core modules, each of which pursues an integrated approach to a key area of environmental studies. These modules explore, firstly, the understanding and measuring of environmental change, using physical and historical evidence to put contemporary changes into context; secondly, how to deal with uncertainty and risk, analysing the practical and theoretical significance of these concepts; and thirdly, competing ideas concerning the value of nature and how those values might be reconciled, ranging from economic to aesthetic and ethical evaluation. The course begins with an intensive "Boot Camp" designed to ensure a basic knowledge of the methodological and critical approaches to study and research within the sciences and humanities. Prior knowledge of the full range of disciplines is not required. Students will also choose one further module from a range offered by the participating schools and will undertake a supervised dissertation project. Students can approach any willing member of staff to supervise this dissertation and negotiate an appropriate topic with him or her.

The University of East Anglia houses a world-leading school of environmental science, together with internationally recognised expertise in the environmental social sciences and emerging environmental humanities. The Master's in Environmental Sciences and Humanities is the only course at this level that brings together this range of expertise to train the next generation of leaders, researchers, activists and citizens. In a world in which environmental concern is gradually being recognised as integrally related to all human concerns, this course aims not only to initiate and foster fundamental academic inquiry, but also to encourage practical and effective action. The course instructors are keen to share their extensive experience in bringing environmental thought to life, whether it be in the form of

bringing appropriate technologies into service, transitions to sustainable living, political engagement or creative and artistic projects.

The Master's in Environmental Sciences and Humanities is the ideal gateway for anyone who wants to turn a passion for the natural world and concern for the future of humanity into a career that will forge new kinds of dialogue and engagement in sectors including conservation, the media, government, non-governmental organisations, research and education. It also offers an opportunity to those already working within these areas to further develop and share their knowledge.

2. Course structure

Week 0 of the Autumn Semester:
Boot Camp – 20 credits, core unit (p. 3)

Autumn Semester:
Module 1: Narratives of Environmental Change – 20 credits, core unit (p. 6)
Module 2: Certainty and Uncertainty in Environmental Science and Policy – 20 credits, core unit (p. 10)

Spring Semester:
Module 3: Evaluating Nature – 20 credits, core unit (p. 13)
Optional unit – 20 credits (p. 16)

Summer period:
Dissertation – 80 credits, compulsory unit (p. 17)

Boot Camp:
Intensive training and reflection on interdisciplinary environmental studies

Module organiser: Dr P Warde

The Boot Camp unit encompasses a number of key steps in the degree, covering pre-arrival preparation, an intensive training week, reflection on interdisciplinary work, and preparation for the dissertation. Students will be provided with a handbook of introductory readings on key issues form a range of disciplines which they are required to work through before arrival. The 'Boot Camp' will then run in the first Week 0 of the first semester as an intensive course over 5 days. The timing of this will allow students and staff to make (in some cases) significant commitments without eating into other teaching / admin time and creating timetabling problems. Students will then be required to write a short report on the experience of the camp and reflect on the implications for their own research of drawing on different disciplinary perspectives.

The focus of the intensive training week is the varying methodologies and perspectives employed by the different disciplines rather than content, although of course method is frequently best explained through substantive and relevant exemplification. The idea is not to provide students with 'crash' courses in areas where they have no background; an impossibility given the range of approaches involved (some of which are unique to particular disciplines, but many of which are shared to a greater or lesser degree in different contexts). Rather it is hoped that the Boot Camp will provide the students with the 'tools' to recognise what particular methods and disciplines are seeking to do; to understand where and why they are being employed; to open up discussion on their strengths and limitations; and to provide markers for guiding further investigation in the core courses and their research.

All five days will have morning and afternoon sessions, combining a mix of lecture and seminar. Each day seeks to combine a session with a more 'methodological' focus where the students may also be asked to complete set tasks; and a session delivering more substantive comment from particular disciplinary perspectives as well as methodological guidance that would be more open to critical and reflective discussion from the variety of backgrounds present on the course. Ideally the boot camp could integrate socialising and possibly visiting of on-campus sites to develop familiarity with our different backgrounds and build group cohesion and dynamics. We will also include at least one open plenary lecture but in the longer term may even consider more in a themed week. Sessions will be team-taught.

The intensive training week also sets the agenda for the degree more broadly, and passing the course will require further steps (see under assessment), including reflection on the experience of working in an interdisciplinary context built into the drafting of the dissertation proposal.

Assessment
This course will be assessed by two written pieces of work. Firstly, a reflective report of the activities during the week, combining pre-course and post-reading with learning from the experience of course, to be handed in later in the autumn semester. The mark will be pass or fail and attendance at boot camp is a requirement for completing the degree course. Secondly, as part of the preparation for dissertation research, students will be required to submit a further report at the end of the spring semester outlining their proposed research topic, and commenting on its relationship with core themes of the course, and the interdisciplinary approaches that they have encountered since the first intensive training week.

Learning outcomes

On completion of this Module students should be able to:

- Appreciate the differing evidential basis on which disciplines studying the environment ground their work.
- Identify core methodological approaches to how different disciplines generate outputs, narratives and results.
- Identify and assess critically which data sources and methods are being applied in particular pieces of research, and reflect on benefits and costs of particular approaches.
- Situate their own interests, disciplinary background and proposed research against the wider scope of interdisciplinary approaches to understanding the environment.
- Understand the importance of particular styles of referencing and presentation in the context of different audiences.

Intensive training week sessions

<u>Monday</u>
Introductions and Expectations
An opportunity for group discussion where both teachers and students can say something about their background, work, and hopes for the course. Also, basic orientation and explanation of how the course will function.
What is data?
Session examining the different kinds of data that are considered to be plausible evidence in the different disciplines involved, introducing themes of how data is collected, what training is required to read it, and what is considered admissible or inadmissible as evidence.
Invited plenary lecture

<u>Tuesday</u>
The nature of nature
Introducing issues that cut across a number of the core modules, such as what constitutes knowledge, action; what we mean by key concepts such as 'proof', 'model', 'theory', 'source'.
Historicizing 'the Environment'
Understanding concepts as historical artifacts and the emergent properties of their time.

<u>Wednesday</u>
How texts work / how to read
A session on how literary works may be read and interpreted, and close reading, with a stress on eco-criticism, but also encompassing other kinds of literature (including scientific).
Disciplinary cultures: experimenting, explaining, reporting
This would focus primarily on the design of research projects and the processing and presentation of information, making clear different cultures in writing, what constitutes and essay, referencing, etc., and principles of experimental design; what constitutes a satisfactory basis of evidence to make an argument.

<u>Thursday</u>
Trying to think about the whole universe at once
Case study of 'integrated approaches' focused on climate, followed by discussion on thinking about climate and transition.
Statistics: spotters' guide
The aim of this session is to teach 'statistics recognition': being able to identify what technique might lie behind visual and tabular presentation of data, averaging, probability

coefficients: a guide to the language of statistics so that 'laypeople' have the tools to investigate the techniques being used, and those with some statistics training can think about the appropriateness of communicating statistical results.

<u>Friday</u>
Study and communication skills
An introduction to best practice in different disciplines in presenting and conveying information, a key aspect of working in a cross-disciplinary environment and where very different cultures prevail. Also introductions to accessing sources, library use electronic archives and databases.
Research afternoon
Short introductions to current research from the staff, so the students can see what is being done and discuss how it relates to the course, also highlighting possible dissertation studies.

Module 1: Narratives of Environmental Change

Module organiser: Prof M Hulme (ENV)
Module teachers: Prof M Hulme, Dr A Haxeltine, Dr P Warde, with guest lectures from Prof. A Watson (ENV), Prof G Foden (LIT), (to be confirmed: Prof T O'Riordan)

The ways in which we think about and study environmental change – its natural and human causes and the human responsibilities and responses - are heavily shaped by the concepts, metaphors and models we develop and deploy. Collectively, these elements contribute to the making of narratives - stories which have coherence, resonance and credibility. This is as true for scientists as it is for artists as it is for lay citizens. And yet these constructed narratives of environmental change are not timeless. They emerge at particular times and places and have their own history; they change over time. Nor do they go uncontested. Different narratives of environmental change can be hugely influential in shaping discourses about the environment and, in particular, in shaping the types of policy interventions that different actors and institutions may propose. The stories one tells about past environmental changes, and human implication in them, have a large bearing on future types of policy intervention.

The aim of this Module is to introduce students to a range of different narratives of environmental change which have been influential in Western thought and action over the last 200 years and especially the last 50 years. It also aims to show how different narratives of past changes can be used to shape different environmental policy futures. The Module draws upon the sub-disciplines of environmental history, cultural geography, futures studies and systems theory and is taught by three experts in these fields. The Module is divided into three parts. In Part 1, through lectures and seminars we introduce students to seven different narratives of environmental change: for example, limits to growth, planetary boundaries, social-ecological resilience. In Part 2, through lectures we introduce four different arenas where environmental policy-making is currently active and show how different narratives of environmental change shape, constrain or inflect the development of environmental policy and the engagement of citizens. In Part 3, the students working in pairs lead a series of assessed seminars on allocated topics which bring together the historical narratives with areas of live policy debate.

Overview

Weeks 1-7: Historicising narratives for understanding the present
Each week will explore a different narrative of environmental change which has gained salience and rhetorical power over recent decades. Each narrative will be explored by first (lecture 1) introducing seminal papers/books which have given powerful expression or visibility to the narrative and then (lecture 2) by examining how the narrative has been taken-up in scientific study, policy development and popular discourse. The compulsory Faculty-led seminar each week will offer the opportunity for students to read more widely around the respective narrative and to discuss in class its origins and implications.
The narratives will be selected from the following long-list, it being possible each year to vary the combination of topics depending on staff availability (sabbaticals, etc.) or to add new ones:

- Anthropocene – e.g. Dukes (2011)
- Apocalypse – e.g. Killingsworth & Palmer (1986)
- Climate change – e.g. Ross 1991; Fleming (1998/2005)

- Collapse – e.g. Diamond (2005)
- Earth System Science – e.g. Bretherton/NASA (1988), Schellnhuber & Wenzel (1998)
- Limits – e.g. Malthus (1798); Meadows et al. (1972)
- Pathways – e.g. Leach et al. (2010)
- Planetary boundaries – e.g. Rockström et al. (2010)
- Resilience – e.g. Holling (1986)
- Revolutions – e.g. Lenton & Watson (2011); Hudson (1992)
- The Great Acceleration – e.g. Costanza et al. (2007)
- Tipping points – e.g. Lenton et al. 2008; Skrimshire (2010)
- Transitions – e.g. Grin et al. (2010)
- Worldviews – e.g. Tarnas (1991)

Weeks 8-9: Deploying narratives for creating futures
This part of the Module will be concerned explicitly with environmental futures thinking and how different narratives of environmental change – drawn from Part 1 – are being deployed in four different domains of public action and policy innovation. The teaching in these weeks will consist of 1 or 2 lectures/seminars on each domain. Again, the chosen domains may vary slightly from year-to-year, with an example selection comprising: civil society responses (e.g. Transition Towns); geo-engineering; energy security; climate adaptation; sustainable pathways.

Weeks 10-12: Assessed seminars
In this section of the Module, students will work in pairs to present and lead an assessed hour long seminar having earlier selected (in Week 7) a topic from a list provided by the Module convenor (an example seminar topic might be: "Explore the use of metaphor in the public discourse of geo-engineering"). These topics will relate to one or more of the four domains of environmental policy-making and social action presented in Part 2 and students well be asked to research and then critically examine how different narratives of environmental change are being deployed in these domains and with what effect (in terms of knowledge, ethics, power, participation, etc.). Week 10 will be a preparation week.

Teaching
Each week of the Module in Sections 1 and 2 will consist of two 50-minute lectures and/or one 2-hour compulsory seminar. Students will be expected additionally to commit a minimum of 5 hours each week to recommended reading. We will additional arrange a small number of one-off guest lectures from leading UEA academics who are able to enrich the content of the module from a number of specific perspectives (e.g. Andy Watson on Earth's revolutions; Giles Foden on environmental story-telling; Tim O'Riordan on sustainability narratives). In Section 3 of the Module comprising assessed student-led seminars, attendance will also be compulsory. Week 10 will be a coursework preparation week.

Assessment
The Module will be assessed through two pieces of coursework: an extended independent review essay (worth 60%) and a seminar presentation (worth 40%).
Essay: The topic for the 4,000 word essay will be selected from a list of six to eight different titles provided by the Module Convenor in Week 1 and which will relate to the first section of the Module (an example essay title might be "Are the narratives of collapse and resilience antagonistic or synergistic?").

Seminar: The seminars will be presented in the third section of the Module (see above). Half of the marks for the seminar presentation (i.e., 20% of the Module) will be awarded through peer evaluation and the other half through staff evaluation (with criteria being communicative ability, content, responses to questions and comments).

Learning outcomes
On completion of this Module students should be able to:

- recognise the historically and culturally situated character of different narratives of environmental change;

- identify how such narratives are being deployed/manipulated in contemporary environmental discourse and policy debate;

- assess critically how these deployments are embraced and/or resisted by different social actors and interests;

- illustrate and communicate the above abilities in a group setting by making and defending a presentation on a specific topic.

Reading

Bretherton, F. (1988) *Earth System Science: a closer view* NASA

Brown, V.A., Harris, J.A. and Russell, J.Y. (eds.) (2010)   *Tackling wicked problems through the transdisciplinary imagination* Earthscan, London, 312pp.

Costanza, R., Graumlich, L.J. and Steffen, W. (eds.) (2007) *Sustainability or collapse? An integrated history and future of people on Earth* MIT Press, Boston MA, 520pp.

Diamond, J. (2005) *Collapse: how societies choose to fail or succeed* Penguin, London, UK, 575pp

Dukes, P. (2011) *Minutes to midnight: history and the Anthropocene Era from 1763* Anthem Press, London, 166pp.

Fleming, J.R. (1998/2005) *Historical perspectives on climate change* Oxford University Press, New York, USA, 194pp.

Garrard, G. (2004) *Ecocriticism: the new critical idiom* Routledge, London, 203pp.

Grin, J., Rotmans, J., Schot, J. and Geels, F. (2010) *Transitions to sustainable development: new directions in the study of long term transformative change - Routledge studies in sustainability transitions 1* Routledge, London

Hastrup, K. and Skrydstrup, M. (eds.) (2012)   *Anticipating nature: climate modeling at different scales* Routledge

Heise, U.K. (2008) *Sense of place and sense of planet* Oxford University Press, Oxford, 250pp.

Holling, C.S. (1986) The resilience of terrestrial ecosystems: local surprise and global change pp. 217-232 in, *Sustainable development of the biosphere* (eds.) Clark,W.C. and Mann, R.E., Cambridge University Press, Cambridge, UK, 500pp.

Hudson, P. (1992). *The Industrial Revolution*. London: Edward Arnold

Hulme, M. (2009) *Why we disagree about climate change: understanding controversy, inaction and opportunity* Cambridge University Press, Cambridge, 393pp.

Kagan, J. (2009)   *The three cultures: natural sciences, social sciences and the humanities in the 21st century* Cambridge University Press, Cambridge, 310pp.

Killingsworth, M.J. and Palmer, J.S. (1996) Millennial ecology: the apocalyptic narrative from *Silent Spring* to global warming pp.21-45 in, *Green culture: environmental rhetoric in contemporary America* (Eds.) Herndl, C.G. and Brown, S.C., University of Wisconsin Press, Madison IN, 315pp.

Latour, B. (1993) *We have never been modern* (translation by C Porter) Harvester/Wheatsheaf, New York, 157pp.

Leach, M., Scoones, I. and Stirling, A. (2010) *Dynamic sustainabilities: technology, environment, social justice Taylor & Francis, 232pp.*

Lenton, T.M., Held, H., Krieglar, E., Hall, J.W., Lucht, W., Rahmstorf, S. and Schellnhuber, H-J. (2008) Tipping elements in the Earth's climate system *Proceedings of the National Academy of Sciences* 105(6), 1786-1793

Lenton, T. and Watson, A.J. (2011) *Revolutions that made the Earth* Oxford University Press, 448pp.

Malthus, T.R. (1798/2008) *An essay on the principle of population* Oxford University Books, 200pp.

Meadows, D.H., Meadows, D.L., Randers, J. and Behrens, W.W. (1974) *Limits to growth* Universe Books, 205pp.

Robin, L., Sorlin, S. and Warde, P. (eds.) (2012) *Environmental futures: prediction and precursors for global change thinking* Yale University Press

Rockström, J. et al. (2009) A safe operating space for humanity *Nature* 461, 472-474 [27 Sep 09]

Ross, A. (1991) *Strange weather: culture, science and technology in the age of limits* Verso, New York NY, 275pp.

Schellnuber, H-J. and Wenzel,V. (eds.) (1998) *Earth system analysis: integrating science for sustainability* Springer-Verlag, Berlin, 530pp.

Skrimshire, S. (ed.) (2010) *Future ethics: climate change and apocalyptic imagination* Continuum Press, London

Stager, C. (2011) *Deep future: the next 100,000 years of life on Earth* Thomas Dunne Books, New York, 300pp.

Tarnas, R. (1991) *The passion of the Western mind: understanding the ideas that have shaped our world view* Harmony Books

Module 2:
Certainty and Uncertainty in Environmental Science and Policy

Module organiser: Dr A Breitenbach (PHI)
Module teachers: Dr A Breitenbach and Dr R Read (PHI), with guest lectures by Dr J Barclay, Prof M Hulme (ENV), Dr P Warde (HIS) and Prof S Hargreaves-Heap (ECO)

Scientific assessment of environmental problems faces many uncertainties, and our knowledge of the environmental risks associated with human impact on the environment is far from complete. The insight available to inform environmental decision-making is usually characterised by a very imperfect understanding of the complex systems and processes involved. As a result, policy-decisions will often have to be made before conclusive scientific evidence about associated harms has been provided. But while policy-decisions will often have to be made with considerable urgency, potential error costs of wrong decisions may be large. Moreover, scientific knowledge and social assessments of policy priorities and risks are usually 'co-produced' by actors and institutions with varying interests. This raises complex questions about how, if at all, environmental science can provide a reliable basis for environmental policy-making.

This module is concerned with questions about certainty and uncertainty in environmental science and about the role of environmental science for political decision-making. The module investigates epistemological questions about the possibility of gaining scientific insight into the sources and solutions of environmental problems, and it examines the relationship of such epistemic difficulties to ethical and political questions of how to act in the face of environmental concerns. It draws upon insights from the history and philosophy of science and from science and technology studies to examine how uncertainty and risk may be analysed and communicated in the study of the environment.

Overview:

Weeks 1-6: Certainty and Uncertainty in Environmental Science

The first part of the module is concerned with epistemological questions in the philosophy of environmental science. We examine some of the difficulties associated with the possibility of gaining certainty in environmental science, and we investigate the connections between such epistemological questions and practical concerns in environmental decision-making.

Environmental science faces particular epistemological challenges insofar as it investigates highly complex entities such as ecosystems and the world climate that develop over large time-scales and where the effects of human agency are large. In studying these systems, scientists make use of models that aim to describe the shape and behaviour of some part of the environment. We begin by assessing the role of such models in scientists' efforts to gain knowledge of the nature and development of these systems. Given that models make a number of abstractions and idealizations about the target systems, we investigate how, if at all, models can tell us anything about these systems, how they can provide the basis for reliable predictions and whether they can be explanatory in any way.

Environmental sciences are, in an important sense, applied sciences. They are taken as directly relevant for environmental policy decisions. That is, policy decisions are regarded as informed by knowledge provided by the sciences. The direction of influence may also, however, go the other way. What we take scientists to have proven may be informed by

practical decisions. We examine the interaction between such theoretical and practical considerations. We investigate, for instance, the status and function of the concepts of "ecosystem health" and "stability" in ecologists' attempts at formulating hypotheses about the state of particular ecosystems. While philosophers of ecology disagree about the correct definition of these terms, it can be argued that an understanding of the terms itself presupposes certain practical considerations about what state of an ecosystem we may want to conserve. Furthermore, general question may be raised about the adequacy of the standard model of hypothesis testing in environmental science. While hypothesis testing usually aims at minimising false positives (Type-I errors), in environmental science false negatives (Type-II errors) may have much more dangerous consequences. For instance, it may be more dangerous to believe, falsely, that no global warming is occurring than to believe that it is occurring even if that belief were to be false. We examine the connection between the different epistemic values that underlie scientific hypothesis testing, on the one hand, and practical policy decisions, on the other.

Weeks 1-2:   Dr A Breitenbach on epistemological problems in environmental science
Week 3:   Dr J Barclay on a case study of the analysis risk and uncertainty in volcanology
Week 4:   Prof M Hulme on a critical evaluation of environmental models
Weeks 5-6:   Dr A Breitenbach on the interaction of knowledge and value in environmental science

Weeks 7-12: Risk, Uncertainty and Environmental Policy

The second part of the module addresses the concepts of risk and uncertainty and their roles in the context of environmental policy-making. We introduce the concepts of risk, and the relation of the notions of risk and uncertainty, in order to discuss the epistemic, social and political aspects that influence our use of these concepts in the context of the environmental crisis. Moreover, we investigate different principles of action under risk and uncertainty and discuss their relation to questions of justice.

Having introduced the notions of environmental risk and uncertainty in the environmental sciences, we investigate, on the one hand, traditional approaches to risk assessment and cost-benefit-analysis and, on the other hand, the precautionary principle commonly presented as an alternative guide to decision-making under uncertainty. While cost-benefit-analysis faces serious difficulties when there are uncertainties about the results needed for the calculations of costs and benefits, the precautionary principle is a strategy designed specifically to cope with scientific uncertainties in the assessment and management of risks. The precautionary principle, however, faces important questions concerning its rationality and compatibility with the aims of science and its effectiveness as an action-guiding principle. We assess these competing approaches to environmental policy-making and examine, in particular, reasoning for the precautionary principle in respect of the need to act, or refrain from acting, in certain ways because of systemic uncertainty. We look at these approaches in the context of the climate crises and other ecological challenges and consider critical questions that have been raised, for example, by precautionary thinking in the context of carbon offsetting and trading.

Finally, we assess how different decision principles relevant for environmental policy relate to considerations of environmental justice. For instance, we ask how risks should be distributed over different individuals, groups of individuals or countries. And we investigate whether, and if so how, precautionary thinking may not only be compatible with, but required by, conceptions of inter-generational justice. We examine the relation of risk,

and environmental justice and policy with reference to historical case studies. By focussing on such examples as debates about climate change or the loss of bio-diversity, the risks of nuclear power or the threats of genetically modified crops, we investigate the role that ideas and evidence about environmental risk, on the one hand, and considerations of justice, on the other, have played for the development of particular environmental policies.

Weeks 7-8:   Dr R Read on precaution, risk and environmental policy
Week 9:   Prof S Hargreaves-Heap the precautionary principle
Week 10:   Dr P Warde on a historical case study of the relations of risk perception and environmental policy
Weeks 11-12:   Dr R Read on environmental policy-making and environmental justice

Learning outcomes
On completion of this Module students should be able to:

• to appreciate epistemic concerns surrounding notions of risk and uncertainty in environmental science and policy-making
• to understand the interrelations of the theoretical concerns of science and the practical concerns of policy-making
• to understand that differing epistemic values may underlie concerns in science and policy-making
• to be able to assess critically different approaches to environmental decision-making and their interrelations with concerns about environmental justice

Assessment
The module will be assessed by coursework.

Reading
D. Bailer-Jones, *Scientific Models in Philosophy of Science*, University of Pittsburgh Press, 2009
D. Bailer-Jones, When Scientific Models Represent, *International Studies in the Philosophy of Science* 17: 59-74, 2003
B. Barry, 'Sustainability and Intergenerational Justice', in: A. Light and H. Rolston (ed.), *Environmental Ethics: An Anthology*, Oxford: Blackwell, 2003, pp. 487-499
C. D. Clements, Stasis: The Unnatural Value, *Ethics*, 86 (1976), 136-143
C. F. Cranor, Towards a non-consequentialist approach to acceptable risks, in: T. Lewens (ed.), *Risk: Philosophical Perspectives*, London: Routledge (2007), 36-53
K. Cuddington, The 'Balance of Nature' Metaphor and Equilibrium in Population Ecology, *Biology and Philosophy*, 16 (2001), 463-479
R. Figueroa and C. Mills, 'Environmental Justice', in: D. Jamieson (ed.), *A Companion to Environmental Philosophy*, Oxford: Blackwell, 2001, pp. 426-438
R. Frigg and S. Hartmann, Models in Science, Stanford Encyclopedia of Philosophy, 2006, URL: http://plato.stanford.edu/entries/models-science/
S. M. Gardiner, A Core Precautionary Principle, *The Journal of Political Philosophy*, 14 (2006), 33-60
M. Hesse, *Models and Analogies in Science*, London: Sheed and Ward, 1963
D. J. Rapport, Ecosystem Health: More Than a Metaphor?, *Environmental Values*, 4 (1995), 287-309
D. B. Resnik, Is the Precautionary Principle Unscientific?, *Studies in the History and Philosophy of Biological and Biomendical Science*, 34 (2003), 329-344
P. Sandin, Common Sense Precaution and Varieties of the Precautionary Principle, in: T. Lewens (ed.), *Risk: Philosophical Perspectives*, London: Routledge (2007), 99-112

K. S. Shrader-Frechette and E. D. McCoy, 'How the Tail Wags the Dog: How Value
    Judgments Determine Ecological Science', *Environmental Values*, 3 (1994), 107-120
K. Shrader-Frechette, *Environmental Justice: Creating Equality, Reclaiming Democracy*, Oxford:
    Oxford University Press, 2002

Module 3:
Evaluating Nature

Module organiser: Dr R Wilson (LDC)
Module teachers: Dr R Wilson, Dr T Greaves (PHI), with guest lectures from Prof Ian Bateman (ENV)

In this module, we will examine a broad range of theories of value and the frequently stark contrasts between them. The module aims to equip students with a historically informed understanding of the emergence of different theories and modes of evaluation. It will ask, for instance, whether aesthetic and economic values are irreconcilable or whether, in fact, their historical emergence together under the twinned headings of 'utility' and 'taste' entails that they are mutually re-enforcing. And we will ask, crucially, whether either economic or aesthetic values are in any way ethical or whether such values can only be defined by their distance from ethical considerations.

This last question will have specific relevance to our considerations of the difficulties of evaluating nature. Is it ethically defensible, for example, to value nature as a resource? Ought economic thought to be jettisoned if we wish adequately to evaluate nature? Or is, on the contrary, a genuinely 'ecological' or, indeed, 'green' economics conceivable – and, if so, what would that involve in practice? Addressing these questions will require a thorough grounding in contemporary conceptions of natural capital, cost-benefit analysis, and resource allocation. As well as examining questions of economic theory, we will also explore how ecological economics might work in practice.

The module places economic evaluation alongside different – and sometimes competing – methods of evaluation. In recent years, for instance, there has been a considerable growth of interest in so-called eco-poetics and eco-criticism, and one of the aims of the module will be to provide a thorough grounding in this field. Artistic and, more broadly, aesthetic evaluation of nature has often explicitly opposed itself to what it casts as the dominant economic paradigm and its allegedly utilitarian quantification of natural resources. But how sure are we that art in general and writing in particular is a good way to articulate the value of the natural? Is not art, rather, predicated on ranking the intervention of human artifice higher than natural processes, often to the detriment of the latter? Answering these questions will involve careful scrutiny of the history of ideas, and, in particular, we will need to ask what has happened to the critical and philosophical study of the aesthetics of nature – so prominent in eighteenth-century discussion of the picturesque, for example – and whether it has irreversibly been replaced with artistic response to natural beauty.

Below is a sketch of how seminars for this module might proceed, followed by a short reading list which offers some initial points for orientation in this subject.

Assessment
The module will be assessed by coursework.

Overview

Weeks 1-3: Theory of Value
1. What is a value?
2. Use and ornament: utility and aesthetics from the eighteenth century to today
3. Kinds of values: the competition of values in modernity

Weeks 4-6: Nature and the economy
4. Standard approaches in resource economics
5. Ecological economics: beyond orthodox economics?
6. Land and resource evaluation: applied ecological economics

Week 7: Reading week

Weeks 8-10: Nature to advantage dressed?
8. The aesthetics of nature (1): the picturesque and the sublime
9. The aesthetics of nature (2): eco-poetry and eco-criticism
10. Art and/as the death of nature

Weeks 11-12: Ethics and values
11. Ethical evaluations/evaluating ethically
12. The road to Rome: ought all values to be ethical?

Reading

Bate, Jonathan, *The Song of the Earth* (London: Picador, 2000)

Budd, Malcolm, *The Aesthetic Appreciation of Nature* (Oxford: Oxford UP, 2005)

Buell, Lawrence, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, MA: Belknap Press, 1995)

———, *The Future of Environmental Criticism: Environmental Crisis and Literary Imagination* (Oxford: Blackwell, 2005)

———, *Writing for an Endangered World: Literature, Culture, and Environment in the U.S. and Beyond* (Cambridge, MA: Belknap Press, 2001)

Conrad, Jon M., 'Renewable, Nonrenewable, and Environmental Resources', section 1.0 in *Resource Economics* (Cambridge: Cambridge UP, 1999)

Daily, Gretchen C., ed., Nature's Services: Societal Dependence on Natural Ecosystems (Washington, DC: Island Press, 1997), esp. essays in Part I, 'Economic Issues of Evaluation'

Daly, Herman E. and Joshua C. Farley, chapter 4 in 'The Nature of Resources and the Resources of Nature', in *Ecological Economics: Principles and Applications* (Washington, DC: Island, 2004)

Dewey, John, *Theory of Valuation* (Chicago: U of Chicago P, 1939)

Glotfelty, Cheryll and Harold Fromm, eds, *The Ecocriticism Reader: Landmarks in Literary Ecology* (Athens: U of Georgia P, 1996)

Grafton, R. Quentin, *The Economics of the Environment and Natural Resources* (Oxford: Blackwell, 2004)

Guyer, Paul, 'From Nature to Morality', in *Kant's System of Nature and Freedom: Selected Essays* (Oxford: Clarendon Press, 2005)

———, 'Beauty and Utility in Eighteenth-Century Aesthetics', in *Values of Beauty: Historical Essays in Aesthetics* (Cambridge: Cambridge UP, 2005)

Mabey, Richard, *The Unofficial Countryside*, rev. edn (Stanbridge: Dovecote, 2010; first publ. 1973)

———, *Nature Cure* (London: Chatto & Windus, 2005)

Meeker, Joseph M., *The Comedy of Survival: Studies in Literary Ecology* (New York: Scribner, 1974)

Morton, Timothy, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard UP, 2007)

———, *The Ecological Thought* (Cambridge, MA: Harvard UP, 2010)

Neumayer, Eric, 'Resource Accounting in Measures of Unsustainability: Challenging the World Bank's Conclusions', *Environmental and Resource Economics*, 15 (2000), 257-78

———, 'Scarce or Abundant? The Economics of Natural Resource Availability', *Journal of Economic Surveys*, 14 (2000), 307-35

———, *Greening Trade and Investment: Environmental Protection without Protectionism* (London: Earthscan, 2001)

———, *Weak versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms*, 3rd edn (Cheltenham: Elgar, 2010; first publ., 2003)

Stocker, Michael, *Plural and Conflicting Values* (Oxford: Oxford UP, 1990)

Zapf, Hubert, 'Literary Ecology and the Ethics of Texts', *New Literary History* 39 (2008), 847-868

Zimmerman, Michael, *The Nature of Intrinsic Value* (Lanham, MD: Rowman & Littlefield, 2001)

Optional units:

(1) PHI-M022 Environmental Philosophy*
     (Organiser: Dr A Breitenbach)

(2) PHI-M024 Philosophy of Science*
     (Organiser: Dr D Rizza)

(* PHI-M022 and PHI-M024 runs biennially in alternating years.)

(3) HIS-M002: Skills in Landscape History: Geographic Information Systems
     (Organiser: Dr P Warde)

(4) ART-Mxxx Linking Environmental and Cultural Change: Lessons from the Past
     (Organiser: Dr J Clarke) (*module code TBC*)

(5) ENV-MA04: Earthquake and Volcanic Hazards
     (Organiser: Dr P Burton)

(6) ENV-MA04K: Earthquake and Volcanic Hazards with Fieldcourse
     (Organiser: Dr P Burton)

(7) ENV-MA44: Natural Resources and Environmental Economics
     (Organiser: Dr B Day)

(8) ENV-MA54: Participatory Environmental Decision-Making
     (Organiser: Dr J Chilvers)

(9) ENV-MA58: Paleoclimatology
     (Organiser: Dr M Chapman)

(10)   Any other module of the student's choice at the discretion of the Course Director

Dissertation

Module organiser: Dr A Breitenbach

This module is compulsory for all students taking the course *MA/MSc Environmental Sciences and Humanities*. Students will be required to produce a 10,000-15,000 word dissertation over the summer period, to be submitted by 1st September.

The dissertation may deal with any topic covered by the remit of the course as a whole. The title and scope of the dissertation will be determined by the student together with his or her supervisor. A detailed research proposal will be submitted to the proposed supervisor in early April and must be approved by the course director.

Each student will receive 6 hours of formal supervision during the course of the module. The supervisor will normally be one of the instructors on the course, unless a more suitable member of staff is identified and agrees to act as supervisor.

The topic of the dissertation and faculty location of the supervisor will determine whether the student ultimately receives an MA or MSc degree. Normally a student who is supervised by a member of staff in ENV will receive an MSc, otherwise the student will receive an MA. Co-supervision between schools is encouraged. In such a case, the primary supervisor will determine the type of degree to be awarded.

The dissertation will be marked by one member of the Faculty of Science and one member of the Faculty of Arts and Humanities.

University of East Anglia

LEARNING, TEACHING AND QUALITY OFFICE

PROPOSAL FOR COURSE(S) LEADING TO AN AWARD OF THE UNIVERSITY OF EAST ANGLIA

This document is in three parts:

PART 1: **Summary of the Proposal**

> **This section may be used for publicity purposes, once approval has been granted.**

PART 2: **Business Case**

> **For consideration by the relevant Faculty Executive**

PART 3: **Academic Case**

> **For consideration by the relevant Faculty Learning, Teaching and Quality Committee**

All three parts need to be completed. (There are different sections for fast-track proposals and these are clearly indicated).

For certain specified types of proposal such as change of degree title, change in School of registration, use a separate PART 4 template.

Extracts from this template will be published to form the programme specification.

ROUTE FOR APPROVAL (Please refer to the accompanying guidance notes and use the questions below to help you determine the most appropriate route)

Is the subject area new to the University?	Is the subject area new to School?
If yes, needs PRC and LTC approval	If yes, needs LTC approval

PRC Approval Required		LTC Approval in Principle Required	
Full	X	Fast-Track	

(This section may be used for publicity purposes. Please attach to the Business Case and to the Academic Case.)

S1	**SUBJECT AREA(S) (please state)** Is the subject area new to the University? If yes, needs LTC and PRC approval	This is an interdisciplinary collaboration between ENV, HIS, LIT, PHI. The subjects already exist but the collaboration is new.
	Is the subject area new to the School? If yes, needs LTC approval in principle	See above
	(If yes to either question, the fast-track route is not applicable).	
S2	**PROFESSIONAL AWARD (if any)**	-
S3	**ACCREDITING/VALIDATING BODY (if relevant)**	-

S4	**LEVEL**	Sub-degree (e.g. Cert. Dip.)	PGCert; PGDip
		Undergraduate	
		Integrated Masters	
		Masters	X
		Postgraduate Research	
S5	**AVAILABLE FROM (academic session)** *Insert (mm/yyyy)*	09/2012	
S6	**SCHOOL OF STUDIES**	PHI	

Please complete the following section for each new course being proposed

Course One		
S7	**COURSE TITLE**	MA/MSc in Environmental Sciences and Humanities
S8	**AWARD**	MA/MSc All students will initially follow the joint MA/MSc route throughout the Autumn and Spring Semesters. Whether they will proceed on the MA or MSc routes after the Spring Semester will be determined on the basis of their chosen dissertation topic. Students writing their dissertation on a topic that falls primarily within the humanities will be awarded a MA, while those focussing on a topic primarily within the natural sciences will be awarded a MSc. Where a dissertation is co-supervised by members of different Schools, the type of degree awarded will be determined by the primary supervisor.
S9	**DURATION** (years or months)	12 months
S10	**MODE OF ATTENDANCE** (full-time, part-time,	FT

	distance, other)		
S11	**PLACEMENT(S)/WORK-BASED LEARNING REQUIRED**	YES	
		NO	X
S12	**COURSE HIGHLIGHTS**		

This interdisciplinary course combines approaches in the humanities and the environmental sciences in order to think about the natural environment and our relationship as humans with it. Students will study concepts of, and approaches to, nature and the environment from philosophy, history, literature and the environmental sciences, and will examine their practical relevance for actual examples and case studies.

We anticipate that students will come from a variety of backgrounds. In order to ensure cohesion of the cohort, the course will begin with a one-week "boot camp" which focuses on questions of methodology within the different disciplines combined in the course. The boot camp is co-taught by at least one member of staff from each of the participating Schools. In this way, we seek to ensure cohesion between the four Schools and make this a truly joint course of study right from the start.

Students then take three compulsory core modules and select one further module from a selection of optional units available within the participating Schools. The three core modules focus on (i) different narratives of environmental change in modern history, and the bearing that these varying narratives have on future environmental policy interventions, (ii) questions of risk and uncertainty in environmental science and the role of such science for political decision-making, and (iii) different ways of evaluating nature and their relationships, including ethical aesthetic and economic.

Over the summer, candidates are required to complete a dissertation (10,000-15,000 words) on any topic that falls within the remit of the course. The dissertation is supervised closely by a member of staff, but co-supervision is encouraged.

The course is studied over one year full-time or two years part-time.

The course is truly interdisciplinary, with each of the three core modules being co-taught by staff from at least two of the four Schools involved. In this way, the three compulsory modules will work as interdisciplinary approaches to the core theme of the course, rather than presenting isolated units. The teaching staff are all active in research that falls within the area of the course, thus making it possible for students to engage in a lively and ongoing debate. Students will be encouraged to attend a monthly research seminar currently developed in collaboration between HUM and ENV. This will enable candidates to follow, and take part in, cross-disciplinary approaches to research that is currently being undertaken in their subject.

The collaboration of this course, between the humanities and the environmental sciences, is unique in the UK; although there are a number of MA programmes which offer a variety of approaches to environmental questions from humanities perspectives, none offer a collaboration between the humanities and environmental sciences. The course offers recent graduates from the human, social and natural sciences as well as professionals from within the environmental sector an opportunity to focussed study of environmental issues from a variety of perspectives that cross disciplinary boundaries.

This new course forms part of a major initiative by the University to develop its standing as the primary location for environmental studies from a variety of perspectives, including the humanities as well as the natural and social sciences. Moreover, the course is set up at a time when the University is aiming to realise its wider ambition of becoming an institution that not only

preaches but practices sustainability in academia. We hope that it will attract major attention both within and beyond the academy and will enhance the reputation of the University as a major centre for environmental studies.

S13	**RELEVANT SUBJECT BENCHMARK STATEMENT(S)**	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/philosophy.asp http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/history07.asp http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/english07.asp http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/earthsciences.asp
S14	**ENTRY REQUIREMENTS**	2.1 Honours degree or equivalent English language competence IELTS 7 (Exceptions may be negotiated in particular cases. Staff may determine a student's language competence by asking for samples of written work or an oral interview with the student.)
S15	**CAREER POSSIBILITIES**	See Careers section BC3
S16	**JACS Subject Level Code(s)** To be completed by the Planning Office following approval of the Business Case	
S17	**UCAS ADMISSION CODE** To be completed by the Planning Office following approval of the Business Case	
S18	**FURTHER INFORMATION** *Insert contact address/email/tel no.* AAO	www.uea.ac.uk/env/ www.uea.ac.uk/his/ www.uea.ac.uk/lit/ www.uea.ac.uk/phi/
S19	**Course Director**	Dr Angela Breitenbach
S20	**Course Proposer(s)**	Dr Angela Breitenbach a.breitenbach@uea.ac.uk

Questions for Initiator:
1. Do you want to propose another course? If yes, please complete Sections S7 – S19 (see below) for each related but separate award for which students may register from the outset.
2. Do you want to complete the Business Case yourself or do you want to send the Business Case to another member of staff to complete?
3. Do you also want to complete the Academic Case yourself or do you want to send the Academic Case to another member of staff to complete?

Course Two

(To be completed if there is a related but separate award for which students may register from the outset.)

S7	**COURSE TITLE**	MA/MSc in Environmental Sciences and Humanities (see note on title above)
S8	**AWARD**	MA/MSc (see note on award above)
S9	**DURATION** (years or months)	24 months
S10	**MODE OF ATTENDANCE** (full-time, part-time, distance, other**)**	PT

S11	**PLACEMENT(S)/WORK-BASED LEARNING REQUIRED**	YES	
		NO	X

S12	**COURSE HIGHLIGHTS**	
	Same as above	
S13	**RELEVANT SUBJECT BENCHMARK STATEMENT(S)**	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/philosophy.asp http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/history07.asp http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/english07.asp http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/earthsciences.asp
S14	**ENTRY REQUIREMENTS**	2.1 Honours degree or equivalent (see note on language competence above)
S15	**CAREER POSSIBILITIES**	See Careers section BC3
S16	**JACS Subject Level Code(s)** To be completed by the Planning Office following approval of the Business Case	
S17	**UCAS ADMISSION CODE** To be completed by the Planning Office following approval of the Business Case	

S18	**FURTHER INFORMATION** – *Insert contact address/email/tel no. AAO*	www.uea.ac.uk/env/ www.uea.ac.uk/his/ www.uea.ac.uk/lit/ www.uea.ac.uk/phi/
S19	**Course Director**	Dr Angela Breitenbach

PART 2 – THE BUSINESS CASE
Note: One Business Case (BC0 to BC9) is applicable to all proposed courses

BC0	**THE RATIONALE** (Overview - brief summary)	
BC0.1	**Brief summary of the rationale for the proposal**	
	The course is unique within the UK. Although there are a number of MA programmes which offer a variety of approaches to environmental questions from humanities perspectives, none offers a collaboration between the humanities and environmental sciences. The course will be highly attractive both to recent graduates from the human, social and natural sciences and to professionals from within the environmental sector. This new course will form part of a major initiative by the University to develop its standing as the primary location for environmental studies from a variety of perspectives, including the humanities as well as the natural and social sciences. It ties in with the concurrent development of a regular research seminar in collaboration between the humanities and environmental sciences which will enable candidates to follow, and take part in, the research that is currently being undertaken in their subject. Moreover, the course is set up at a time when the University is aiming to realise its wider ambition of becoming an institution that not only preaches but practices sustainability in academia. It will attract major attention both within and beyond the academy and will enhance the reputation of the University as a major centre for environmental studies.	
BC0.2	**Who (externally) has been consulted about the proposals (e.g. Professional Associations, employers' groups, PSBs; independent academic (required for new course proposal); external examiner (required for fast-track proposals)).** **Please summarise here and attach copies of any responses to this document or insert their comments in this section.**	
	We have approached a number of non-UEA academics and non-academics to ask for their advice on this project. They have been uniformly supportive, thinking it an idea whose time has come. **Independent academics:** **Sverker Sörlin, Professor of Environmental History at the Royal Institute of Technology, Stockholm:** "This is a timely initiative, which will put UEA at the top of British and international higher education in terms of sustainable development. The broad, yet well balanced and clearly focused and selective approach, makes for a solid and high quality programme which combines visionary thinking with a thorough foundation in established and ongoing research, much of it among leading faculty at the UEA itself. One should note in particular the desire to address useful knowledge that seeks out policy applications and relevance for industry and society. The great interdisciplinary here proposed, between all the major fields from the humanities to the natural sciences, is a perfect idea." **Emily Brady, Reader, School of Geosciences, University of Edinburgh, and President of the International Society of Environmental Ethics:** "This new programme is very well-conceived and should appeal to a wide range of students seeking advanced interdisciplinary knowledge in the environmental sciences and the humanities. This kind of approach is becoming more and more important in terms of the	

critical knowledge offered by the humanities for thinking through environmental problems and the way in which the sciences can provide concrete understanding of a range of more conceptual problems."

David Wood, Centennial Professor, Department of Philosophy, Vanderbilt University:

"This is a brilliantly conceived and timely cross-disciplinary course, bringing together geo-historical considerations with policy and value questions, and issues of sustainability in a wholly convincing way. I put together a semester-long graduate course of this sort a couple of years ago at Vanderbilt which was very successful, but this MA course seems to me better thought-through than ours, and more useful to a range of professionally oriented students. It strikes a fine balance between science, social science and questions of value, and it will genuinely improve decision-making on the part of those who take it. The ways in which the various teachers describe the aims of their individual course are relevant, sophisticated and attractive. Putting this MA proposal together required no little flair - I have little doubt that it would be well enrolled."

Robert Macfarlane, Travel and Nature Writer, and Lecturer in English Literature, University of Cambridge:

"This MA course strikes me as an ambitious and impressive course, that is likely both to attract students and to elicit high-calibre work from them. It is timely, in that it joins the ranks of a small number of other new MAs in the country (notably Essex and Exeter) that approach ideas of 'nature' and 'the natural' principally from the perspective of cultural environmentalism. It is also unique: none of these other courses, to my knowledge, combines 'hard' environmental science, philosophy, literature, and policy analysis in this way."

Potential employers:

Tony Juniper, campaigner, writer and sustainability advisor, and former Head of Friends of the Earth:

"There are no environmental solutions to environmental problems, only social and economic ones. If we are to succeed in tackling the greatest challenges of our age, then it will be necessary to produce thinkers with the more rounded perspectives needed to deal with environmental challenges in their modern context. A course like this is long overdue. No one yet offers training of this kind and I am sure that if it is done correctly will quickly make a major impact."

Dr. Rob Tinch, Environmental Futures (Environmental Consultancy, Norwich):

"This strikes me as a really excellent initiative. There is a lot of interest in the humanities/ environmental-sciences interface at the moment, partly because it is increasingly recognised as essential for practical and effective policy making. There are examples across the board - the whole TEEB agenda [The Economics of Ecosystems and Biodiversity] can be seen in this light, but there is also a counter-point to that, currently expressed in a FP7 call ENV.2011.2.1.4-3 'Improved comprehension of the utility of the concepts of value of biodiversity' … essentially it's asking some pretty fundamental questions about how and why humans value biodiversity, and how particular ways of looking at and framing the valuation issue might result in different behavioural outcomes. The way these problems are approached, and the policies used, will influence the results, and we need the skills to recognise and examine that.

There is also a great deal of interest in science-policy interfaces, both at the direct implementation level (see eg http://ipbes.net) and at the research level (see e.g.

	http://www.spiral-project.eu/ - which is just getting off the ground), and rapidly advancing work on integrated assessment combining mapping of ecosystem functions with human use of services (see e.g. http://www.naturalcapitalproject.org/). These are just some examples, but across the board, there is a clear need for bright graduates with wide-ranging experience in environmental sciences, economics and humanities to make sure that future policy making takes a holistic approach to tackling pressing problems that demonstrably involve complex interactions of human and environmental factors, and the course you're proposing would seem ideally suited to that."		
BC0.3	**Is this a Fast-track proposal?**	**YES**	
		NO	**X**
BC0.4	**If Yes, what features of the proposal make it a fast-track?** *Please refer to the New Course Approval Procedure*		

BC1	**ACADEMIC AND RECRUITMENT STRATEGY**	
BC1.1	**How does the proposal fit with School academic plans?**	
	The proposal fits with the 'home' School's (PHI's) plans to focus on Environmental Philosophy as one of its major research and teaching areas. It satisfies the School's ambition to form and consolidate ties with other Schools, in particular ENV. And it presents promise in realising the School's ambition to increase numbers of PGT students.	
	The Faculty's academic plans?	
	The (HUM) Faculty Plan from May 2008 states: "The potentials for cross-Faculty collaboration are considerable and could result in striking innovations in research and teaching. Discussions are underway to combine resources in the Faculty and the School of Environmental Sciences for a new MA/MSc on Discourses of Nature" (p. 2). The development of this new course realises this ambition. It fills what, by the lights of many members from different Schools within the Faculty, has been felt to be a serious need: to build on its interdisciplinary strengths and to initiate and consolidate serious collaboration with the School of Environmental Sciences.	
	The University's Corporate Plan?	
	The course proposal is situated within the University's corporate plan. See section above.	
BC1.2	**Proposed Recruitment Strategy**	
	Recruitment will focus on graduates from a variety of subjects from within the humanities, natural and social sciences and on professionals within the environmental sector, both in the UK and beyond.	
BC1.3a	**Is the proposal commercially sensitive?**	**YES**	
		NO	X
BC1.3b	**If yes, what are the reasons?**	

BC2 – This section is to be sent to AAO. You can do this after you have finished completing the Business Case or do so now. (AAO is requested to return comments within 10 working days of receipt). The Business Case cannot be considered by the Faculty Executive until this section is completed.

BC2	MARKET RESEARCH (to be completed by AAO)	
BC2.1	What other and type of institution offers identical and/or similar courses in the UK?	

<table>
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There are no identical courses at other institutions. The closest analogues are these:

MA in Environment, Culture and Society at Edinburgh:
http://www.ed.ac.uk/schools-departments/geosciences/postgraduate/masters-programme/taught-masters/environment-culture-society

MSc in Environmental Strategy at Surrey:
http://www2.surrey.ac.uk/postgraduate/taught/envstrat/

MA in Values and Environment at the University of Central Lancashire:
http://www.hotcourses.com/uk-courses/online-distance-learning-all-environmental-studies-courses-university-of-central-lancashire/16180339/0/4545/QA.1/any/B,B1,B2,B3,B4,B5,B6,C,C1,C2,C3,C4,C5,C6/county/united+kingdom/all/list.htm

MA Philosophy, Sociology and the Environment at Essex:
http://www.essex.ac.uk/philosophy/prospective/pg/ma_degrees/ma_ph_sociology_and_the_environment.aspx

MA Philosophy, Politics and Environmental Issues at Essex:
http://www.essex.ac.uk/philosophy/prospective/pg/ma_degrees/ma_ph_politics_and_environmental_issues.aspx

MA Environmental Governance: Natural World, Science and Society at Essex:
http://www.essex.ac.uk/coursefinder/CourseDetails.aspx?course=MA++F85124)

MA in Nature at Lampter:
http://www.lamp.ac.uk/philosophy/nature.html

MA in Environment, Development and Policy at Sussex:
http://www.sussex.ac.uk/development/1-2-3-2-1.html

MA/MSc Environment and Development at KCL:
http://www.kcl.ac.uk/schools/sspp/geography/masters/courses/ma/envdev.html

MA/MSc Environment, Politics and Globalisation at KCL:
http://www.kcl.ac.uk/schools/sspp/geography/masters/courses/ma/envpolitics.html

MA in Environment, Policy and Society at the Open University:
http://www3.open.ac.uk/study/postgraduate/qualification/f19.htm

MA in Climate Change Studies at Keele University:
http://www.keele.ac.uk/pgtcourses/coursedetails/climatechangestudies/

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</table>

BC2.2	**Are there any likely international competitors?** (Please give brief details)	
BC2.3	**What is the annual number of applicants currently applying nationally for similar courses?**	N/A, given BC2.1, above. There are no sufficiently similar courses.
BC2.4	**What is the evidence for current and future demands for the course from** · **potential students?** · **Employers (public services, private sector, the professions etc)**	
	There is some evidence of such demand from potential students: e.g. In PHI, academic staff have been approached by UEA students and non-UEA students who ask if there is some kind of Environmental Philosophy or ENV-PHI Masters available. Some PHI UG students have gone on to take Masters courses in ENV, but would appreciate there being more of an overlap with their extant expertise.	
BC2.5	**Can current and projected demand be met from existing provision?**	N/A
	Nationally:	
	Regionally:	
BC2.6	**Where is/what are the competitive advantage(s) for UEA?**	
	UEA has a world reputation in Environmental Science. UEA Environmental Scientists have a wider reach of interests than those in most other leading ENV-type Schools or Departments worldwide: a greater level of interest in philosophy of science, in economics and social science, in policy studies, in environmental narratives etc. These interests dovetail with and could be buttressed by the increasing interest in such areas among Humanities teachers and scholars at UEA. This intersection also draws upon UEA's ongoing historic reputation as a centre of interdisciplinary excellence (a factor explaining why some environmental scientists and humanities-scholars came to UEA in the first place). Finally, the CRU hack in 2009 spawned increased interest among students and the general public in the actual workings, political and historical dimensions etc. of the environmental sciences, with a particular focus on UEA. This degree course could focus such interest in a positive way and harness it into actual increased numbers of students.	
BC2.7	**ADDITIONAL COMMENTS BY AAO:**	
	Your analysis of almost comparable courses is sound and details the type of market you would be moving into. We would be unable to obtain application/accept data at postgraduate level and as such it is difficult to determine the market beyond the competitor analysis you have carried out. Based on the Agriculture focus groups we recently conducted the word Sustainability is relatively popular and with science students a direct reference to science is strong although	

we cannot be certain from this research how this works with the combination of the two disciplines.

We also feel that these titles seem very broad and should be more specific but this is opinion rather than a statement supported by research.

Reply by Angela Breitenbach:

These comments were made in response to our first title options: 'Environmental Sciences and Humanities' and, alternatively, 'Sustainability Sciences and Humanities'.

We have settled on the title 'MA/MSc in Environmental Sciences and Humanities' for the following reasons:

First, the title conveys the core subject matter, the relationship of humans with their environment, and the proposed interdisciplinary approach to the subject. The concepts chosen are recognised as capturing the subject matter both by those with a humanities and those with a science background.

Second, including 'MA/MSc' in the title will make clear that both the humanities and science components are covered and recognised.

Third, the title is clear and memorable. A brief blurb will be added in any advertising material which will give further information on the content of the course and the Schools that are involved.

Following a Course Team meeting and upon consultation with the deans of the HUM and SCI faculties in December 2010, the agreed title is "MA/MSc Environmental Sciences and Humanities".

BC3 – This section is to be sent to the Careers Centre. You can do this after you have finished completing the Business Case or do so now. (Careers is requested to return comments within 10 working days of receipt.) The Business Case cannot be considered by the Faculty Executive until this section is completed.

BC3	**MARKET DEMAND AND RECRUITMENT** **(to be completed by the Careers Centre)**	
BC3.1	**What graduate career opportunities may be available?**	
	Potential for opportunities in think tanks, advisory bodies, local and central government, European and International environmental organisations, sustainability initiatives and consultancies.	
BC3.2	**Who (externally) has been consulted about the proposals (e.g. Professional Associations, employers' groups, PSBs)**	
	None by Careers due to short timeframe for response.	
	ADDITIONAL COMMENTS BY CAREERS:	
	This seems to be a very interesting course, enhanced by UEA's reputation in these areas. It would be beneficial if students were made aware of potential career applications from the academic subjects covered, perhaps through visiting lecturers or other interventions. Also the potential to conduct projects in close conjunction with external organisations where possible. This has clear employability benefits for students. Response by Angela Breitenbach: These are very helpful suggestion, much in line with the ideas of the teaching team. Concrete plans on how to realise them, and which external organisations to get involved, are already on the way and will be finalised before the start of the course.	

To be completed by the course proposer. BC4 may be completed prior to return of BC2 and BC3, but the Business Case cannot be considered until all sections are complete.

BC4	RESOURCES		
BC4.1	**STUDENT NUMBERS AND TUITION FEES**		
BC4.1.1	*Student Numbers*:		
	Proposed student target intake	15	
	FT - Home/EU	10	
	- International	5	
	PT (Heads)		
	DL (Heads)	We may consider DL once the course is up and running.	
	Minimum viable intake (ftes)	10	
	Maximum viable intake (ftes)	30	
	Are the student numbers:		
	a) **available via redistribution within the School?** *(Consult the Head of School)*	**YES**	
		NO	
	b) **available via redistribution with the Faculty?** *(Consult the Dean of Faculty)*	**YES**	
		NO	
	c) **additional numbers required?** *(Consult the Planning Office, ACAD)*	**YES**	**X**
		NO	
BC4.1.2	*Tuition Fees:*		
	Please select the relevant fee schedule:		
	a) Standard Home/EU/International	X	
	b) Full-cost *(Please specify requested fee levels)*		
	c) External Teaching Contract *(Please provide brief details)*		
BC4.2	**EQUALITY AND DIVERSITY**		
BC4.2.1	Does the course and/or School cover a subject area(s) which traditionally attract(s) a very specific or narrow student profile?	**YES**	
		NO	X
BC4.2.2	If yes, what steps will be taken to attract non-traditional students to the course / School? (Aspects to consider include: age, disability, ethnicity (home and international), gender and socio-economic group.)		

Now complete BC5 AND BC6 if the proposal is following the 'full' new course proposal route.

OR

Complete BC5F AND BC6F if the proposal is following the 'fast-track' route.

FOR FULL NEW COURSE PROPOSALS

BC5	What is the impact of the proposal on ACADEMIC STAFF?		
	Staff will be teaching new modules but teaching load will be dealt with by the relevant Heads of School.		
BC5.1	Are new appointment(s) required?	YES	
		NO	X
	If yes, how many of what type (e.g. Teaching and Scholarship, Teaching and Research) and at what level?		
	What is the source of funding for new academic staff?		
BC5.2	If no new teaching appointments are required, are any teaching adjustments required if new modules are to be introduced and if other modules are to be withdrawn? (Please include code, credit value and level/year of any new modules and/or modules to be withdrawn).		
	This will be given further consideration by the participating Schools as the new course evolves.		
BC5.3	Is any course(s) to be withdrawn?	YES	
		NO	X
	If Yes, please specify UCAS Code(s) and session from which course(s) withdrawn?		
BC5.4	Are there any implications outside the sponsoring School (e.g. service teaching, by other Schools of Studies)?		
	No		

FOR FAST TRACK NEW COURSE PROPOSALS

BC5F	What is the impact of the proposal on ACADEMIC STAFF?		
BC5F.1	Are new appointment(s) required?	YES	
	If yes, please complete Full New Course Proposal	NO	
BC5F.2	Are any new modules to be introduced?	YES	

		NO	
	If yes, please include code, credit value and level/year.		
BC5F.3	Is any course(s) to be withdrawn?	**YES**	
		NO	
	If Yes, please specify course and UCAS Code(s) and session from which course(s) withdrawn?		
BC5F.4	Are there any implications outside the sponsoring School (e.g. service teaching, by other Schools of Studies)		

FOR FULL NEW COURSE PROPOSAL

BC6	What is the impact of the proposal on PHYSICAL RESOURCES & OTHER FACILITIES?		
	Apart from teaching rooms, no special equipment will be required.		
BC6.1	What are the recurrent or non-recurrent expenditure to be incurred in respect of:		
	i) Classroom and study facilities?	-	
	ii) Other equipment?	-	
	iii) Consumables?	-	
BC6.2	Computer equipment?	-	
BC6.3	What additional books/journals/electronic resources other than those already available will be required year by year until steady state is reached?		
	Additional books and journals will be ordered within the limits of the Schools' library budgets.		
BC6.4	Are there any other special arrangements on which this new course proposal will depend? (E.g. placements, year abroad).	**YES**	
		NO	X
	If Yes, please give details of likely costs/whether appropriate agreements are in place/have to be drawn up?		

BC6.5	Are there any start-up costs (e.g. any initial publicity and promotion?)	YES	X
		NO	
	If yes, please give details:		
	The usual promotional publicity leaflets and posters		

FOR FAST TRACK NEW COURSE PROPOSALS

BC6F	What will be the impact of the proposal on existing physical resources & other facilities?

BC7 seeks comments from other Divisions which have an interest in new course proposals, for example, because it has an impact on central provision of IT or requires new library books or there are issues regarding regulatory frameworks. This section is for their comments.

Please send the Summary and Business Case completed to date to:

- *Dean of Students*
- *Director of Information Services*
- *Central Academic Division (Academic Registrar)*
- *Director(s) of Faculty Administration*
- *Residences and Services Division*
  and if their comments have not already been obtained:
- *Director of Library Services*
- *Admissions and Outreach Office*
- *Careers Service*

Also send to the Partnerships Office of the Learning, Teaching and Quality Office

Partner Colleges may be informed of the proposal unless it is deemed to be commercially sensitive (see Section BC1.3)

Please complete the relevant section on behalf of the Divisions/Offices for which you are responsible, and return (email) to the Course Proposer <u>within 10 working days</u> of receipt.

Please note that the process cannot proceed to approval until comments have been received. ***Please enter "no comment" if appropriate****.*

This proforma may have been sent to other Divisions/Offices for consultation in parallel.

BC7A	Comments by Dean of Students
	What is the impact of the proposal on support staff and resources in the office for which you are responsible?
	The multi-disciplinary nature of this course may result in additional pressures on the DOS Learning Enhancement Team. I am concerned that a one week 'boot camp' may not provide enough preparation to help some students achieve their academic potential in the elements of the course that may be very unfamiliar, and may demand skills that they do not have - for example, students with a humanities background whose skills in scientific approaches, mathematics and statistics may be very underdeveloped (and vice versa). Response by Angela Breitenbach: The teaching team take the challenge of the interdisciplinary approach of this course very seriously. In addition to the preparatory boot camp, there will be close interaction between the students and staff members from the participating Schools (in particular in the format of the joint monthly research seminar). This will give students an opportunity to approach a member from the relevant School when they encounter problems in any particular discipline with which they are unfamiliar. Moreover, attention will be paid to fostering a sense of community between the students, encouraging them to help each other by passing on background expertise that they have acquired through their undergraduate degree. Please also see the informal course outline attached for a more detailed description of the boot camp.

BC7B	Comments by Director of Information Services
	What is the impact of the proposal on support staff and resources in the office for which you are responsible?

BC7C	Comments by Central Academic Division (Academic Registrar)
	What is the impact of the proposal on support staff and resources in the office for which you are responsible?
	The multiplication of courses and modules adds to the general overhead cost and as courses and modules are added to the UEA portfolio it is desirable that equal attention is given to getting "unwanted old stock" off the books too. This is a very interesting proposal indeed. Is there a robust business case that supports the viability statement based on 10 students?

BC7D	Comments by Director(s) of Faculty Administration
	What is the impact of the proposal on support staff and resources in the office for which you are responsible?

BC7E	Comments by Residences and Services Division
	What is the impact of the proposal on support staff and resources in the office for which you are responsible?
	None at present, but it is important to alert staff to the fact that there is a finite number of UEA bed spaces, and as international student numbers increase, our current guarantee of accommodation to these students may not be sustainable.

BC7F	**Comments by the Director of Library Services**: 20
	What is the impact of the proposal on support staff and resources in the office for which you are responsible?
	From what has been noted (above), we are assuming only modest additional book purchases will be required within the limits of the existing budgets and that no additional journals will be needed.

It is important to note that, if it later transpires that any new journal provision is required, the current policy is for the School(s) to either identify other less-used titles of equivalent cost for cancellation or to provide additional supplementary funding. This is because publisher inflation continues to exceed the headline rate of inflation (RPI) and so the Library has had to put a cap on the overall journals budget in order to protect what is left for book provision.

Response by Angela Breitenbach: Thanks for these comments. We are aware of the potential financial implications of further book and journal purchases. At this stage, we see no need for investment in costly journals. |

This section enables the course proposer to respond to any comments received prior to consideration of the business case for approval.

BC8A	COURSE PROPOSER'S RESPONSE TO SUPPORT STAFF/PHYSICAL RESOURCES COMMENTS AND MARKET RESEARCH/DEMAND COMMENTS (WHERE RELEVANT)
	Please see comments in individual sections.

Once all sections have been completed, the Business Case may be sent for approval

Approval of the Business Case

BC8	APPROVAL/SIGNATURES	Approved Yes/No?	Date
BC8.L1	School Director of Learning, Teaching and Quality:		
BC8.L2	Head of School (on behalf of School Board):		
BC8.L3	Dean of Faculty (on behalf of Faculty Executive):		
BC8.L4	PRC (if relevant)		
BC8.L5	LTC (if relevant)		

BC9 tells you who must now be informed once the business case has been approved.

BC9	Send approved Summary and approver list (BC8) to:
	Chair, Recruitment, Admissions and Marketing Committee
	CAMS Manager/Planning Office (ACAD) for allocation of: • ROU code for each proposed ROU course • JACS code • UCAS admissions code

The Academic Case, for consideration by the Faculty Learning, Teaching and Quality Committee (LTQC) now follows. You may complete this in parallel with the Business Case BUT the approval of the Business Case by the Faculty Executive should precede consideration by the LTQC.

PART 3 – THE ACADEMIC CASE

Please complete sections *AC1 b/c to AC8* for each new course being proposed

AC1a	Faculty	HUM
	School(s)	PHI
	Course Director(s)	Dr Angela Breitenbach

AC1b	Course Title	MA/MSc in Environmental Sciences and Humanities

AC1c	Exit Award(s) and Title	MA or MSC in Environmental Sciences and Humanities PGCert in Environmental Sciences and Humanities

AC2	**(For undergraduate or integrated masters programmes only:)** Please select only from the permitted options		
	Weighting for degree classification:		Exit Award (please indicate: e.g. CertHE, DipHE, PgCert, PgDIP)
	Stage 0		
	Stage 1		
	Stage 2		
	Stage 3		
	Stage 4		
	Stage 5		
	Stage 6		
	Stage 7		PgCert, PgDip (for successful completion of the dissertation and at least 40 credits of other modules)

AC3	**COURSE MANAGEMENT INFORMATION**				
AC3.1	REGULATORY FRAMEWORK (please tick all that apply)				
	CCS for Undergraduate Courses				
	Graduate Diplomas				
	Integrated Master's				
	PGCE				
	Common Master's Framework				X
	Postgraduate Research				
	Certificate/Diploma in Continuing Education				
	Is the course as a whole assessed on a pass/fail basis?	YES		NO	X
	Are any modules assessed on a pass/fail basis?	YES	X	NO	
	If so, how many modules and what is the credit volume for each module?				
	One module, the 'Boot camp', 10 credits.				

AC4	NEW MODULES		
AC4a	Are there any new modules to be introduced?	YES	X
		NO	
	If Yes, then proceed to AC4b		
	If No, then proceed to AC4c		
AC4b	Please complete for: New Core, Compulsory, Option A, Option B, Option C module(s):		

Module Title:	Boot Camp
Level:	MA/MSc
Credit Value:	20*
Semester:	Autumn
Module Organiser	Dr Paul Warde
Module Type (e.g. EX/CW/WW/PR etc):	Attendance
Module marking Scheme:	Pass/fail
Proposed module code:	PHI *TBC*
Module Delivery: (e.g. distance-learning, campus based, work placement)	Campus based
Brief Outline:	The 'Boot Camp' unit encompasses a number of key steps in the degree, covering pre-arrival preparation, an intensive training week, reflection on interdisciplinary work, and preparation for the dissertation. The intensive training module takes place in Week 0 of the first semester over 5 days.** It is focused on familiarising students from a variety of backgrounds with core methodologies in each of the courses' core disciplines. It does not aim to substitute the long training required for mastery of each discipline, but to build awareness of different methods and expectations that the disciplines covered in the course employ. Each day will incorporate a methodological and a conceptual session led by staff from a single or combination of disciplines. Subjects covered will include core theoretical underpinnings of scientific practice (e.g. Induction, deduction, falsification etc.); trust and choice of sources and evidence; approaches to causation; basic statistics; writing

| | | essays and reports in sciences and humanities; presentations in the sciences and humanities.

*Completion of the boot camp and assessments earns 20 credits. This is roughly divided as:
(i) Pre-course preparation with 'The boot camp handbook', including significant texts as primers for the areas to be discussed; material (texts for close reading, statistical graphs etc., examples of research design) that we will use within the sessions themselves, and guides to good practice in research and study in different disciplines. (5 credits)
(ii) The Boot Camp training week (5 credits)
(iii) Reflection and report writing (4 credits)
(iv) Dissertation preparation and spring report/proposal (6 credits)

**Any potential difficulties arising with the timetabling of the boot camp for PT students will be dealt with on a case-by-case basis with the aim of accommodating students who have caring responsibilities or other serious commitments. |
	Core, compulsory or free choice (please state)	Core
AC4b	Please complete for: New Core, Compulsory, Option A, Option B, Option C module(s):	
	Module Title:	Narratives of Environmental Change
	Level:	MA/MSc
	Credit Value:	20
	Semester:	Autumn
	Module Organiser	Dr Mike Hulme
	Module Type (e.g. EX/CW/WW/PR etc):	CW
	Module marking Scheme:	Common Master's Framework
	Proposed module code:	ENV *TBC*
	Module Delivery: (e.g. distance-learning, campus based, work placement)	Campus based
	Brief Outline:	The aim of this Module is to introduce students to a range of different narratives of environmental change which have been influential in Western thought and action over the last 200 years and especially the last 50 years. It aims to show how different narratives of past changes can be used to shape

		different environmental policy futures. The Module draws upon the sub-disciplines of environmental history, cultural geography, futures studies and systems theory and is taught by three experts in these fields. The Module is divided into three parts. In Part 1, through lectures and seminars we introduce students to seven different narratives of environmental change: for example, limits to growth, planetary boundaries, social-ecological resilience. In Part 2, through lectures we introduce four different arenas where environmental policy-making is currently active and show how different narratives of environmental change shape, constrain or inflect the development of environmental policy and the engagement of citizens. In Part 3, the students working in pairs lead a series of assessed seminars on allocated topics which bring together the historical narratives with areas of live policy debate.
	Core, compulsory or free choice (please state)	Core
AC4b	Please complete for: New Core, Compulsory, Option A, Option B, Option C module(s):	
	Module Title:	Certainty and Uncertainty in Environmental Science and Policy
	Level:	MA/MSc
	Credit Value:	20
	Semester:	Autumn
	Module Organiser	Dr Angela Breitenbach
	Module Type (e.g. EX/CW/WW/PR etc):	CW
	Module marking Scheme:	Common Master's Framework M50PA
	Proposed module code:	PHI *TBC*
	Module Delivery: (e.g. distance-learning, campus based, work placement)	Campus based
	Brief Outline:	This module is concerned with questions about certainty and uncertainty in environmental science and about the role of environmental science for political decision-making. The module investigates epistemological questions about the possibility of gaining scientific insight into the sources and solutions of environmental problems, and it examines the relationship of such epistemic difficulties to ethical and political questions about how to act in

		the face of environmental concerns. It draws upon insights from the history and philosophy of science, and from science and technology studies, to examine how uncertainty and risk may be framed, analysed and communicated in the study of the environment.
	Core, compulsory or free choice (please state)	Core
AC4b	Please complete for: New Core, Compulsory, Option A, Option B, Option C module(s):	
	Module Title:	Evaluating Nature
	Level:	MA/MSc
	Credit Value:	20
	Semester:	Spring
	Module Organiser	Dr Ross Wilson
	Module Type (e.g. EX/CW/WW/PR etc):	CW
	Module marking Scheme:	Common Master's Framework M50PA
	Proposed module code:	LDC *(TBC)*
	Module Delivery: (e.g. distance-learning, campus based, work placement)	Campus based
	Brief Outline:	In this module, we will examine a broad range of theories of value and the frequently stark contrasts between them. The module aims to equip students with a historically informed understanding of the emergence of different modes, so to speak, of evaluation. It will ask, for instance, whether aesthetic and economic values are irreconcilable or whether, in fact, their historical emergence together under the twinned headings of 'utility' and 'taste' entails that they are mutually re-enforcing. And we will ask, crucially, whether either economic or aesthetic values are in any way ethical or whether such values can only be defined by their distance from ethical considerations.
	Core, compulsory or free choice (please state)	Core
AC4b	Please complete for: New Core, Compulsory, Option A, Option B, Option C module(s):	
	Module Title:	Dissertation
	Level:	MA/MSc
	Credit Value:	80
	Semester:	Summer
	Module Organiser	Dr Angela Breitenbach

Module Type (e.g. EX/CW/WW/PR etc):		PR
Module marking Scheme:		Common Master's Framework M50PA
Proposed module code:		PHI *(TBC)*
Module Delivery: (e.g. distance-learning, campus based, work placement)		Campus based
Brief Outline:		Students will be required to produce a 10,000-15,000 word dissertation over the summer period. The dissertation may deal with any topic covered by the remit of the course as a whole. The title and scope of the dissertation will be determined by the student together with his or her supervisor. A detailed research proposal will be submitted to the proposed supervisor in early April and must be approved by the course director.

Each student will receive 6 hours of formal supervision during the course of the module. The supervisor will normally be one of the instructors on the course, unless a more suitable member of staff is identified and agrees to act as supervisor.

The topic of the dissertation and faculty location of the supervisor will determine whether the student ultimately receives an MA or MSc degree. Normally a student who is supervised by a member of staff in ENV will receive an MSc, otherwise the student will receive an MA. Co-supervision between schools is encouraged. In such a case the type of degree will be determined by the primary supervisor.

The dissertation will be marked by one member of the Science faculty and one member of the Arts and Humanities faculty. |
| Core, compulsory or free choice (please state) | | Compulsory |

AC4c	DESCRIBE CORE OR COMPULSORY EXISTING MODULES Please complete for existing modules that are Core or Compulsory for this course	
	Module Title:	
	Module Code:	
	Level:	
	Credit Value:	

Semester:	
Module Organiser	
Module Type: (EX / CW / WW / PR etc)	
Module marking Scheme:	
Brief Outline:	

AC5	If the course is a joint course, how will the student experience be managed?
	We anticipate that students will come from a variety of backgrounds. In order to ensure cohesion of the cohort, the course begins with a one-week "boot camp" which focuses on questions of methodology within the different disciplines combined in the course (see AC4b above). The boot camp is co-taught by at least one member of staff from each of the participating Schools. In this way, we intend to ensure cohesion between the four Schools and to make this a truly joint course of study right from the start. All core modules are co-taught by members from at least two of the participating Schools. In this way, the three core modules will work as interdisciplinary approaches to the theme of the course, rather than presenting isolated units. Students will be encouraged to attend a monthly research seminar currently developed in collaboration between HUM and ENV. This will enable candidates to follow, and take part in, cross-disciplinary approaches to research that is currently being undertaken in their subject.

AC6	BOARD OF EXAMINERS				
AC6.1	Is there an existing Board of Examiners?	Yes	X	No	
AC6.2	If YES, which existing board will be responsible for the course?	PHI			
AC6.3	If NO, please enter details for new board of examiners				
AC6.4	Are any new external examiner(s) required?	Yes		No	X
AC6.5	If yes, how many?				

AC7	ACCREDITATION/VALIDATION				
AC7.1	Is accreditation/validation by a Professional and/or Statutory Body required?	Yes		No	X
AC7.2	Please specify which PSB and when accreditation/validation may take place.				

AC8	**COURSE PROFILE AND AWARD REQUIREMENTS**	
	Year 0	
	Core Modules	
	Compulsory Modules	
	Option A	
	Option B	
	Option C	
	Free Choice Modules – Enter number of credits	
	Year 1	
	Core Modules	(1) Boot camp (20 credits) (2) Transitions: past, present and future (20 credits) (3) Certainty and uncertainty in environmental science and policy (20 credits) (4) Evaluating nature (20 credits)
	Compulsory Modules	Dissertation (80 credits)
	Option A	(1) PHI-M022 Environmental Philosophy* (Organiser: Dr A Breitenbach) (2) PHI-M024 Philosophy of Science* (Organiser: Dr D Rizza) (* PHI-M022 and PHI-M024 will run biennially in alternating years.) (3) HIS-M002: Skills in Landscape History: Geographic Information Systems (Organiser: Dr P Warde) (4) ART-Mxxx Linking Environmental and Cultural Change: Lessons from the Past (Organiser: Dr J Clarke) (*module code TBC*) (5) ENV-MA04: Earthquake and Volcanic Hazards (Organiser: Dr P Burton) (6) ENV-MA04K: Earthquake and Volcanic Hazards with Fieldcourse (Organiser: Dr P Burton) (7) ENV-MA44: Natural Resources and Environmental Economics (Organiser: Dr B Day) (8) ENV-MA54: Participatory Environmental Decision-Making (Organiser: Dr J Chilvers) (9) ENV-MA58: Paleoclimatology (Organiser: Dr M Chapman) (10) Another module of the student's choice at the discretion of the Course Director 20 credits each
	Option B	
	Option C	
	Free Choice Modules – Enter number of credits	
	Year 2	
	Core Modules	
	Compulsory Modules	
	Option A	
	Option B	

Option C	
Free Choice Modules – Enter number of credits	
Year 3	
Core Modules	
Compulsory Modules	
Option A	
Option B	
Option C	
Free Choice Modules – Enter number of credits	
Year 4	
Core Modules	
Compulsory Modules	
Option A	
Option B	
Option C	
Free Choice Modules – Enter number of credits	

NOTE: Whilst the University will make every effort to offer the module listed, changes may sometimes have to be made for reason outside the University's control (e.g. illness of a member of staff) or because of low enrolment or sabbatical leave. Where this is the case, the University will endeavour to inform students.

PROGRAMME SPECIFICATION FOR AN AWARD OF
THE UNIVERSITY OF EAST ANGLIA

(The summary section may be used for publicity purposes. The full specification may also be publicly available).

Note: One Programme Specification may be used for all courses (ROUs) in the proposal. Please indicate where there are any differences (including any course (ROU) specific learning outcomes) between courses (ROUs) in the free text and explain how learning outcomes at the programme level (i.e. covering all courses) may be demonstrated.

PS1	EDUCATIONAL AIMS AND LEARNING OUTCOMES
PS1.1	Overview of aims and learning outcomes:
	• To provide students with a range of concepts and approaches that will enable them to think critically about wide-spread ways of thinking about nature and the relationship of humans with their natural environment • To provide students with the skills to employ these concepts and approaches to assess real world questions regarding our human relation to the natural environment • To develop students' skills to an advanced level so that they can engage with questions about nature and the environment from a range of perspectives within the humanities and natural sciences • To provide students with a clear understanding of relevant concepts and methods in ways that will enable them to think independently and conduct research into the interdisciplinary field of history, philosophy, literature and environmental science
PS1.2	Knowledge and Understanding:
	• Knowledge of key concepts and approaches to understanding nature and the relationship between humans and their environment from history, philosophy, literature and environmental science • Awareness of the methodologies through which nature and the environment have been explored from the perspectives of history, philosophy, literature and the environmental sciences • Some understanding of the relationship that exists between these academic traditions and of the central difficulties that have been raised about the relationship • Knowledge of key texts in the field • Knowledge of a range of secondary scholarship and resources relevant to the field
PS1.3	Cognitive Skills:
	• Critically reflect on, and evaluate, information • Critically review scholarly literature • Construct reasoned arguments • Show independence and originality of thought • Communicate complex and pertinent arguments in oral and written form • Employ a sophisticated vocabulary
PS1.4	Subject specific skills (including practical skills):
	• Capacity to analyse and evaluate key concepts and arguments linking history, philosophy, literature and the environmental sciences • Critical sensitivity to the similarities and differences between approaches to questions about nature and the environment in the humanities and the natural sciences • Condensation of complex material in brief and assimilable form • Bibliographic and research skills appropriate to higher level study • IT skills in both research and the production of appropriately formatted texts

PS1.5	General/transferable key skills and attributes:
	• Engage in reasoned critical debate on topics relevant to the course • Communicate effectively with a wide range of individuals in writing and verbal exchanges • Take responsibility for personal and professional learning and development • Develop ability to work in a self-directed manner, to manage time and prioritise workload • Gather, evaluate and connect a wide range of material from different contexts and disciplines • Develop openness to different disciplinary approaches, while staying focussed on answering clear-cut questions • Develop teamwork skills to achieve common goals • Reflect on own learning and make constructive use of feedback

PS2	**TEACHING AND ASSESSMENT STRATEGIES AND METHODS**
PS2.1	(please describe including how these enable students to demonstrate achievement of the learning outcomes):
	The delivery of teaching is divided between lectures, seminars, and individual supervisions. The three core modules will be taught as a combination of lectures and seminars, while the dissertation will be supervised individually. In lectures and seminars, the material will be taught by presentation and discussion of key ideas, concepts, theories and narratives and will be illustrated by real case studies. This combination will give students the possibility to examine the direct practical and real life relevance of theoretical approaches to the questions at the core of the modules. In order to ensure unity to these interdisciplinary modules, there will always be some overlap of teaching staff: i.e. if an environmental scientist is handing over the teaching of one unit to a historian the two will overlap for a period of a week or more in the classroom in order to ensure continuity of method in transition. (This will build on the foundation of the initial Boot Camp.) Structure of the course: In order to ensure cohesion of the cohort, the course will begin with a one-week "boot camp" which focuses on questions of methodology within the different disciplines combined in the course. The boot camp is co-taught by at least one member of staff from each of the participating Schools. In this way, we will ensure cohesion between the four Schools and to make this a truly joint course of study right from the start. Students then take three core modules and select one further module form a variety of optional units available within the participating Schools. The three core modules focus on the historical development of the earth and human societies within it as complex adaptive systems, on questions of risk and uncertainty in environmental science and the role of environmental science for political decision-making, and on a range of theories of the value of nature. The core modules will be assessed by a variety of modes, including coursework, project and oral presentation. Assessment deadlines will be spread over the two Semesters. In the Autumn Semester, deadlines will be co-ordinated between the organisers of Modules 1 and 2. In the Spring Semester, the organiser of Module 3 will set deadlines, taking into consideration the deadlines of optional modules chosen by the students.

	In addition, candidates complete a dissertation (10,000-15,000 words) on a topic of their own choice. The dissertation is written in the summer term and is supervised closely by one of the staff members. The course is studied over one year full-time or two years part-time.

PS3	EQUALITY
PS3.1	How do the admissions criteria ensure equality of opportunity for all applicants?
	The key selection criteria for admission are the academic ability and potential of the applicant. No applicant will be treated less favourably on grounds of sex, marital status, race, colour, ethnic origin, sexual orientation, disability, political or religious beliefs or any other criterion accepted as relevant by the University's Council.
PS3.2	What steps have been taken to ensure an inclusive curriculum?
	This course will embrace the University's dedication to the advancement of learning and the increase in knowledge, both to satisfy the aspirations of individuals and to contribute to economic, social and cultural progress. The study of the relationship of humans with their natural environment, in particular its historical, philosophical and literary dimension, will include a variety of cultural perspectives.
PS3.3	In what ways do learning and teaching and assessment methods ensure inclusivity and equality of opportunity?
	This course will embrace the University's continued development of its quality assurance systems to monitor and identify any differential impact on any student arising from policy or practice in admissions and teaching and assessment.

Please send (email) the whole <u>Academic Case</u> and the <u>Summary</u> (including programme specification) to:

- **the Learning, Teaching and Quality Office** (Assistant Registrars for Ug, Pgt as appropriate)
- **the Equality and Diversity Manager (in parallel) for comment.**

Comments will be returned within 10 working days of receipt.

Please complete the relevant section and return (email) to the Course Proposer within <u>10 working days</u> of receipt.

Sections AC9.1 and AC9.2 may be completed in parallel.

AC9	COMMENTS
AC9.1	Learning, Teaching and Quality Office (UG or PGT Assistant Registrar):
	The course director's responses to these very helpful comments are in italics
	This proposal requires the approval of LTC for an MSc award to be offered by a HUM School.
	It is also recommended that SCI and SSF LTQCs be consulted or made formally aware of the proposal given the highly interdisciplinary nature of the award and also the proposal for a HUM School to offer an MSc.
	A meeting with the teaching team and the HUM and SCI took place on 8th December 2010. ENV involvement in the course was formally approved on 28th September 2011.
	The proposed course fits within the current regulatory framework governing taught Master's degrees. FLTQC may wish to consider the structure of the course, noting that a 90-credit dissertation would mean that any student prevented from taking the dissertation or who is unsuccessful in the dissertation will only be eligible for a PgCert and not a PgDip. The course team may also wish to consider that a student who passes the dissertation and only 30 credits of taught modules will be eligible for a PgDip.
	This proposal has been taken on board and a PgDip will be awarded in the case of successful completion of the dissertation module (which will now be worth 80 credits) in addition to that of 40 credits of taught modules.
	The course profile (AC8) indicates that there are 70 credits of core taught modules. The course team and FLTQC are asked to think very carefully whether this is what is intended. (I note that in AC5 these modules are referred to as compulsory rather than core. *This has been changed to read 'core'.*) The only courses with such strict requirements at Master's level are those which lead to professional registration involving care of vulnerable individuals and it has been the experience of Boards of Examiners in the past that where very strict requirements are in place, the Board has felt fettered in exercising discretion. Having said this, requiring students to pass such a high proportion of the course is the direction of travel of the New Academic Model.
	The teaching team has considered this issue very carefully. We feel that the interdisciplinary nature of the course requires that students pass all core modules. This will ensure that students think of all three core modules as central to the course, and it will prevent them from focussing their attention on one or two disciplinary approaches only. In particular, the aim is to educate students to think of the relationship of humans with their natural environment from a perspective that must include both the natural sciences and humanities, rather than privileging one perspective over the other.
	Students will only be required to pass the core modules on aggregate, rather than having to pass all components of a module (the modules are M50PA rather than M50PC).

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The decision to make all three modules 'core' is in line with the New Academic Model.

The proposals for the management of the joint programme are exemplary, with responsibility for the course being lodged with one Course Director in a single School, with a teaching team drawn from across a number of Schools. This should mitigate against the challenges often encountered in the administration and delivery of a joint programme. It was not clear, however, from the new module outlines which School would be home to these modules *(This has been clarified. The boot camp and Module 2 will be registered with PHI, Module 1 with ENV, Module 3 with LIT.)* – care will need to be taken to ensure that any particular requirements of modules, particularly in the Option Range, (such as referencing style, location for submission, extensions arrangements) are made very clear to students who are studying "out of School" and/or "out of Faculty". *(These issues will be addressed in the boot camp as well as by the relevant module organiser.)* Care will also be needed to ensure that the timetable does accommodate the Option range envisaged and that teaching articulates between Schools. *(Care has been taken to ensure that all optional modules are offered in the Spring Semester. Please also see my note on ensuring co-ordination of assessment deadlines in PS2.1 above.)*

I note that none of the new modules include an examination component, which is welcome as the University seeks to minimise the volume of assessment and examinations in particular. There is, however, no information with PS2.1 as to how the modules / course will be assessed or the range of assessment modes that might be employed. How will assessment be balanced across modules and how will deadlines be coordinated with those of Optional modules? *(Details have been included in PS2.1 above.)*

As with all new course proposals under consideration at this time, the course team and FLTQC may wish to consider how this new course might develop under the New Academic Model.

One change resulting from the suggestions made by the NAM is that the boot camp has now been re-structured as a 20-credit module (rather than a 10 credit module, as originally conceived).

The published information for these courses might benefit from a clearer explanation of the route that must be followed by a student in order to gain an MA or an MSc, perhaps within S12. *(This has been included in S12.)* The Course Director, course team and contributing Schools will need to establish working guidelines as to what constitutes a Science or Social Science dissertation warranting and MSc and what sort of dissertation will lead to an MA. (As previously noted to HUM TPO there will need to be two parallel routes established between which students can transfer.) Processes for confirming to students whether they are heading for an MA or an MSc will need to be established – presumably at the point that the dissertation topic is agreed, although it is recognised that as a topic evolves is may move more towards a science than originally envisaged.

These are very helpful comments that have been considered further by the teaching team.

As noted in S12 above, whether a student will be awarded a MA or MSc will depend on his/her specialisation in the dissertation. Students take three core modules which are all interdisciplinary, and one optional module which will be located in one of the participating Schools. The dissertation, which is worth half of the total credits, will therefore determine where the student specialises. Whether this will be in the arts and humanities or in the sciences will be determined, in the first instance, by

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	the dissertation supervisor together with the student. If there are any doubts as to which route is the more appropriate, the course director and teaching team will be consulted. *We believe that it is important to have all students registered in, and graduate from, the same School (PHI) whether or not they take the MA or MSc route. This will not only avoid potential confusion but also create and foster the sense that all students study on one coherent and unified interdisciplinary course.* Whilst more appropriately the domain of the Equality and Diversity Manager, I did note that section PS3.2 in particular did not provide much indication of the ways in which different cultural perspectives and different voices would be incorporated into the curriculum. Comments within PTES (whilst limited) have drawn attention to a concern that we teach from only one perspective. *We take this comment into consideration but believe that the focus of the core and optional modules is sufficiently wide to include different cultural perspectives.* Joanne Ashman 19 November 2010 Response to comments made by LTC (*comments by Angela Breitenbach in italics*): Will students have advisers in different Schools or just in PHI? *I suggest that we distribute advisees among members of the core teaching team (Angela Breitenbach, Tom Greaves and Rupert Read from PHI, Alex Haxeltine and Mike Hulme from ENV, Paul Warde form HIS, Ross Wilson from LIT).* Concerns were raised about the student experience on a joint degree, which has a broad range of subjects; in particular, there were concerns that the boot camp would not be sufficient to qualify non-science students for taking SCI related modules. *All core modules are interdisciplinary, none is specifically SCI based. Students will not require a highly sophisticated level of mathematical or statistical expertise for taking these modules. The boot camp will nevertheless make students aware of the differences in approach and method between the various disciplines. It does not attempt to bring all students on the same level of background knowledge.* *As noted above (BC7A), the course team take the interdisciplinary nature of the course very seriously. In addition to the preparatory boot camp, there will be close interaction between the students and staff members from the participating Schools (in particular in the format of the joint monthly research seminar). This will give students an opportunity to approach a member from the relevant School when they encounter problems in any particular discipline with which they are unfamiliar. Moreover, attention will be paid to fostering a sense of community between the students, encouraging them to help each other by passing on background expertise that they have acquired through their undergraduate degree.*
AC9.2	Equality and Diversity Manager:
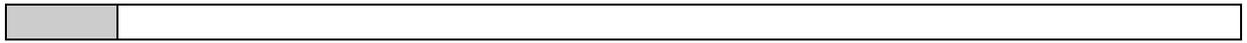
AC10	APPROVALS	SIGNATURE AND DATE
AC10.1	**Head of School**	
	Approved:	
	Approved with amendments:	
	Rejected:	
AC10.2	**Faculty Associate Dean (following Faculty LTQC)**	
	Approved:	
	Approved with amendments:	
	Rejected:	

AC11	CIRCULATION (for office use only)	
	Course Proposer	• Summary • Approvals
	LTQO (for report to LTC)	• Summary • Approvals
	Planning Office	• Summary • Academic Case (including course profile) • Approvals
	Faculty Office	• Summary • Programme Specification • Course profile • Approvals
	Admissions and Outreach	• Summary • Approvals
	Academic Officer of the UUEAS / President of GSA (for taught postgraduate only)	• Summary • Approvals