The University of Edinburgh

The Moray House School of Education

September 2013

Proposal for a Postgraduate Certificate / Diploma and MSc in Learning for Sustainability

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Taught Postgraduate Programme Proposal Form Cover Sheet

Programme Title	MSc in Learning for Sustainability
Programme qualification	PG Certificate / PG Diploma and MSc
Host School	School of Education
Name of proposer(s)	Professor Pete Higgins Dr. Simon Beames
Name of intended Programme Director	tbc
Duration of study	Postgraduate Certificate (12-24 months) Postgraduate Diploma (12-36 months) MSc (12-48 months)
Mode of study / delivery	Resident at Edinburgh University: Yes Resident at another HE institution: No Collaborative: Yes Distance learning: Yes Flexible training package: Yes
Date of intended first intake	September, 2014
Date approved by School Board of Studies	
Approval of Head of School (signature and date) (This is taken to indicate that all issue of resource have been addressed within the School)	
Date submitted to College Learning and Teaching Committee	

1 Programme Overview

1.1 Rationale

Many issues threaten the future of ourselves and other species on the planet. The most prominent of these is global climate change, but also loss of biodiversity, impacts of manufactured chemicals, inequality and related concerns of human well-being, and economic stability. The proposed MSc in Learning for Sustainability seeks to understand and contribute to the way education addresses these issues, within national and global contexts.

The development of this MSc programme is also driven by recent changes in Scottish schooling policy. The report of the Ministerial Advisory Committee on 'One Planet Schools' submitted its 'Learning for Sustainability' report in December 2012, and recently the Scottish Government accepted all 31 of the recommendations. Among these were the declarations that 'All learners should have an entitlement to learning for sustainability...' and that 'outdoor learning should be a regular, progressive curriculum-led experience for all learners'[1]. This report strongly supports the General Teaching Council for Scotland's new Revised Professional Standards for Scottish Teachers which include 'Learning for Sustainability' in the elements that define initial, in-service and leading teachers[2]. This will be a requirement for all registered teachers in Scotland as of September, 2013.

The University of Edinburgh has recently taken a key role in the development of a UN Recognised Regional Centre of Expertise in Education for Sustainable Development for Scotland[3]. The Centre will be located at, and administered and led by staff at the University. It will have strong collaborative links with other Scottish Universities, Non Governmental Organisations (NGOs), third sector organisations within Scotland, and internationally. The MSc Learning for Sustainability will of course both benefit from and support learning for sustainability through such links, and there will be opportunities for innovative research-led teaching, collaborative partnerships and professional networks that a UN Centre of Expertise offers.

The rationale for this new MSc includes two additional items. First, the Donaldson Review of Teacher Education 'recommendation 44' advocates that each newly qualified teacher has a 'Masters account' opened for them; and second, the Scottish Funding Council has recently announced recurrent provision of 20 fully-funded MSc places in Outdoor Learning and Sustainability Education at the Moray House School of Education, starting in September 2013.

There are three sections in this document:

1. Programme overview
2. Course descriptors
3. Resources

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[1] http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/ACE/OnePlanetSchools
[2] http://www.gtcs.org.uk/about-gtcs/Consultations/consultation-revision-professional-standards.aspx
[3] http://rcescotland.wordpress.com/

1.2 Brief outline of target audience and basic strengths

Because of the policy drivers outlined in the above rationale, the target market for this programme is wide and varied, and is expected to comprise the following:

- Practicing teachers in Scotland
- Education professionals, policy-makers, informal, environmental, outdoor and community educators and activists from within the rest of the UK
- Education professionals, policy-makers, informal, environmental, outdoor and community educators and activists from around the world
- Education professionals and policy-makers from Non-Governmental Organisations NGOs and third sector organisations

The strengths of the proposed MSc in Learning for Sustainability lie in: its swift response to post-Donaldson recommendations; its unique position as a new qualification associated with the GTCS Professional Standards; and its development in parallel with Scottish Government priorities in Learning for Sustainability. The location of a UN Regional Centre for Expertise in Education for Sustainable Development in Scotland will foster developments in the field that will facilitate rich opportunities for professional development and networking. It is currently the only such programme which embeds within it significant outdoor components.

The proposed programme responds to a real need in that:

- It will support teachers in Scotland to respond to the GTCS Revised Professional Standard (including existing practitioners in primary and secondary schools, as well as teachers in training).
- It will fulfil a need for ITE institutions to provide 'learning for sustainability' in their courses, as required by the GTCS.
- It will enable Scotland's existing professional body of primary and secondary school teachers to meet Recommendation 44 of The Donaldson Report and gain masters level credits.

The proposed programme supports MSc students in having an outstanding academic experience in that:

- It provides opportunities for students to study in an institution that delivers world-class education and research in environmental science, environmental education, outdoor learning and sustainability.
- The courses are research-led, informed by contemporary issues, and taught by staff involved in driving political and educational change in this field in Scotland and the UK.
- The programme contributes to the University's Strategic Plan, by enabling wider participation and by providing pathways to postgraduate qualifications for professionals in education in NGOs and for students.
- It brings together a diverse range of participants (teachers, teachers in training, educational professionals in NGOs, community and informal educators) with academic research staff and professionals from the UN

Regional Centre of Expertise In Education for Sustainable Development and this will create invaluable professional networking opportunities for students on the programme.

The proposed programme is structured to meet the needs of full- and part-time students, both domestic and international:

- The courses, building on a successful model of delivery, are typically delivered through either:
  - two intensive weekend sessions with guided study before, between and after each session, or
  - online distance learning
- For full-time students the structure and schedule provides an even study load over two semesters.
- Part-time students can study at weekends and evenings with little if any need to impact their work commitments. They can select courses to spread their studies over up to four years.
- Part-time students can choose to study the PG Diploma or the PG Certificate each of which provides a coherent and relevant CPD opportunity.

The above compelling features, several of them unique, position the programme well to attract both international and domestic students across the target markets. The programme's close relationship with the UN Regional Centres of Expertise in Education for Sustainable Development, provides a strong platform from which to promote the programme.

The programme is directly relevant to the University's global and sustainability commitments and, as such, the programme can expect to both benefit from and enhance the increasing profile of the University's Global Academies and related activity.

1.3 Educational aims of the programme

The MSc in Learning for Sustainability aims to introduce students to the main issues, theories, debates and research methods in the field of Learning for Sustainability. The multi-disciplinary nature of this programme will challenge students to explore the socio-political, economic and environmental dimensions in the various sub-disciplines of global learning, citizenship education, outdoor learning, environmental education and in education for sustainability.

The programme offers participants opportunities to interact with a wide range of other professionals working in the fields of education and sustainability, thereby deepening their networks, knowledge and critical skills. These resources can then be applied in their own institutions and settings.

The main educational aims associated with the MSc in Learning for Sustainability are:

1. Students will be able to demonstrate a critical understanding of the key contemporary concepts, theories, and debates currently influencing Learning for Sustainability.
2. Students will be able to reflect upon, critically analyse, and interpret their own experiences, working practices or professional activities in light of these key concepts, theories and debates.
3. Students will critically examine a range of indoor and outdoor pedagogical approaches to Learning for Sustainability.
4. Students will be able to critically review, consolidate and extend knowledge, skills, practices and thinking on Leaning for Sustainability.
5. Students will be able to critically analyse and conduct research in an area of interest relevant to their own interests, experiences or practice, and engage with processes of extending the academic and practical boundaries of the discipline.
6. Students will interpret, evaluate, and meaningfully engage with complex ethical and/or professional issues, and make informed judgments on topics not yet addressed by current professional codes or practices.

1.4 Programme Coherence

This section provides additional context and explanation about: the overarching purpose of the programme; the relationships between the individual courses; and the contribution of their aims to programme's goals.

The MSc Learning for Sustainability aims to improve the prospects for planetary sustainability by developing leading practitioners and research scholars, and by re-grounding their engagements with the international 'education for' agendas (which include sustainability, environment, citizenship, peace, futures, outdoor and global learning).

These agendas are received by educators as 'floating' policy constructs, the contents and meanings of which shift with cultural, political, economic, organisational and rhetorical circumstances; and they are bundled together or incorporated into each other for similarly arbitrary and superordinate reasons, and with insufficient attention to research evidence or socio-ecological purpose. Educators are thus left searching for absent bases that might provide both rationale and critical evaluative criteria for their study or practice under these policies. Presently, Scottish schooling is an almost archetypal and even experimental case, but scholars and practitioners face these conditions internationally and across educational sectors.

The programme provides its participants with the contemporary theoretical tools and empirical opportunities they need to develop firmer foundations for their practice, scholarship, leadership and research, rooted in their own contexts and experiences.

The programme is underpinned most notably by a proposed relationship between learning and sustainability, which invites participants to see their educational work as the development of uncertain but purposeful and ethical engagements with current socio-ecological conditions. From these, learning for sustainability and perhaps sustainability itself will co-evolve, or at least there will be some arising to

which the educator must remain attentive and adaptable. This contrasts with the tenor of the contemporary policy field, which offers certain but distant and undefined outcomes, ironically in service to immediate gratification.

The programme will not aim to create, edit, elide, hide, bundle, re-name, re-propose and demand the enactment of an established canon of learning for sustainability, environmental and social citizenship. Participants will likely already be facing that. Instead, it aims to help them respond by reconstructing their scholarship and practice through active and critical engagement with three broad and closely interwoven themes:

- The best thinking available about the conceptual apparatus of sustainability, environmental, citizenship and outdoor learning;
- The practice of Learning for Sustainability, supported by (1) actively applying their professional experience to the issues under consideration; (2) field trips, visits, guest speakers and case studies; (3) encouragement and support to undertake dissertation projects with partner organisations;
- The experience of, and immersion in, the 'natural' and human-made environment.

In doing so, it aims to produce world-class practitioners, leaders, scholars and researchers in the field.

Brief overview of programmes and their courses

Postgraduate Certificate (3 x 20 credit courses)

The overarching goal of the Postgraduate Certificate is to affect practice, thinking and policy in Learning for Sustainability by encouraging practical and intellectual experimentation by participants in relation to their existing practice and thinking in the field. The course *Introduction to Learning for Sustainability* begins this process of unsettling and re-grounding, and it is supported by two courses that engage with important educational domains: the outdoors; and the planet as the fundamental but represented material context.

Introduction to Learning for Sustainability
This course aims to critique of aspects of the scientific evidence and social context of the above situation and our responses to it. In so doing participants will consider educational responses to the contested concept of 'sustainability'. This will involve participants considering the breadth and complexity of concepts of 'sustainability', and necessarily challenging and partially re-grounding their present understandings and practices by comparing these with the internationally diverse set of practices that sail beneath the 'flag of convenience' that is 'learning for sustainability' and its variants.

Outdoor Learning
This course supports the core certificate course, Introduction to Learning for Sustainability, by addressing a central pedagogical domain: the outdoors

which is central to an emerging understanding of its significance that has informed the GTCS and Scottish Government's policy concept of 'Learning for Sustainability'. It does not aim to train student-teachers as outdoor specialists, but aims to provide them with some understanding of the benefits, processes and skills related to learning in the outdoors. In doing so it will effect change in participants' practices and thinking about learning for sustainability through the use and/or evaluation of learning in outdoor spaces. Experimentation with these concepts will feed the wider reconsiderations that participants reflect upon in *Introduction to Learning for Sustainability.*

Ecosystems for Educators
This course supports the core certificate course, Introduction to Learning for Sustainability, by addressing a central pedagogical domain: the material limits of the planet and their representation. The main aim of the course is to engage participants in thinking about learning for sustainability by interrogating the influence of cultural understandings of the planet, specifically 'as a provider of services', on their education thinking and practices. There are strong links also to the course, *Outdoor Learning*, in consideration of the extent to which the planet can represent itself or must be approached through scientific or other representations. This is particularly germane in relation to the (apparently) non-local issues that appear in much of the Learning for Sustainability policy field.

Postgraduate Diploma (PG Certificate plus 2 x 20 credit courses, 2 x 10 credit courses)

The central aims of the certificate courses were to affect practice and scholarship, and to ground them in the face of a shifting policy field. That initial unsettling was prompted by exposure to a range of alternative practices and to a range of alternative conceptualisations of taken-for-granted contexts and concepts.

In addition to being stand-alone courses, the Diploma courses seek to use that deconstructive knowledge and experimentation as a potential context. The Diploma courses are grounded in educational practices but clearly explore philosophical and theoretical underpinnings. The courses will evaluate those underpinnings, which are rarely-mentioned, never questioned and yet always implied, by the canon of practice as it is mixed and re-mixed over the years in the 'Learning for Sustainability' policy field.

The overall aims of the Diploma courses are to develop participants as leaders and researchers in the field. They will deepen participating practitioners' understanding to give them the confidence to lead, and to prepare scholars who will consider taking the Masters and developing the field through their research.

Between the Diploma courses a dense theoretical web will be explored, though in relation to practice, and this will require the development of the leadership abilities to argue for practice in terms that go beyond loose empirical or rhetorical claims. The courses *Environmental Philosophy and City-based Outdoor Learning*, and *Education for Environmental Citizenship* also provide strong links with *The Sources of Knowledge* and the subsequent Research Methods course that MSc students will take in preparation for their research.

Education for Environmental Citizenship
The aims of this course are: first, to develop leaders in Learning for Sustainability to the extent that leadership demands a knowledge of the history of the educational field, its contemporary research developments, and an ability to articulate a rationale for a course of action and evaluate its effects; second, the course aims to make visible the aims of the programme by exploring them explicitly; third the course aims to make visible the coherence of the programme by linking to the material covered in the diploma courses. The course asks a small number of central theoretical questions about the assumptions at the heart of educational interest in citizenship, environment and sustainability. Although this is a stand-alone course with independent exemplar material for analysis, each of these questions bears explicitly on at least one of the diploma courses and these links will be explicitly made.

Environmental Philosophy and City-based Outdoor Learning
This course aims to develop leaders and/or research scholars in the field of Learning for Sustainability to the extent that these roles require a command of its philosophical underpinnings, in particular of the diverse ways in which learners might make meanings in and of 'environment'. Built around the use of the urban outdoors to explore such different meaning-makings, the course provides clear linkage with participants' learning from both Outdoor Learning and Ecosystems Educators.

Experiential Education
This course aims to develop leaders in the field of Learning for Sustainability to the extent that they should be able to examine and evaluate a complete philosophical and theoretical framework for pedagogy. The course generalises many of the ideas explored in the courses Outdoor Learning and Introduction to Learning for Sustainability with the well-defined literature about experiential education. There are clear connections to the course, Environmental Philosophy and City-based Outdoor Learning.

The Sources of Knowledge
This is a required course for all MSc students in the School of Education. See full descriptor at section 2.7

MSc (PG Diploma plus 10 credit Planning Research course and 50 credit dissertation)

The final contribution to the overall aims of the programme is the dissertation supported by the course Planning Research. Students will be encouraged and supported to undertake projects that engage with the application of theory in practice. This includes, especially for part-time students, projects related to their on-going professional practice, and projects with a range of partner organisations.

Dissertation partner organisations include:

A. Organisations with which the School and programme team have existing links and relationships such as:
    - General Teaching Council Scotland
    - Field Studies Council

- Learning for Sustainability Scotland: Scotland's UN University Regional Centre of Expertise on Education for Sustainable Development;
- Through LfSS, its member organisations;
- Other UN University Regional Centres of Expertise on Education for Sustainable Development, and their member organisations;
- Environmental Association for Universities and Colleges, its Topic Support Network on learning in HEIs and FE, and its member organisations;
- Scottish Natural Heritage

B. Organisations which contribute directly or indirectly to the programme through guest speakers, field trips, visits and cases studies: Typical examples include: Carbon Conversations, Eco-Schools, Institute for Humane Education, Natural Change Foundation, Out of the Blue, Grassmarket Community Trust, Historic Scotland, Bridgend Growing Communities, Common Cause.

C. The University of Edinburgh itself as it tackles commitments in its Social Responsibility and Sustainability Strategy (2012):

- "work to understand better the causes, impacts and potential solutions to the social, environmental and economic challenges facing the world and its people"
- "communicate and engage with students, staff, international partners, local stakeholders and communities to share knowledge and help bring about positive change"
- "explicitly embed our commitment to social responsibility and sustainability in our policies, strategies and procedures - making the University a stimulating, efficient and effective place to work and study"

In addition to normal supervisory support, the programme will engage with Making the Most of Masters, a partnership project between the universities of Aberdeen, Edinburgh and Stirling providing opportunities and support for masters students to undertake work based projects.

1.5 Programme Structure

The MSc in Learning for Sustainability is delivered at SCQF level 11. The programme comprises a total of 180 credit points. All students are required to take the same seven courses, and the dissertation. An overview of the course structure is shown on the next page.

The majority of the programme is offered on campus, with two of the seven courses offered as on-line / blended learning. One of the on-line courses (*The Sources of Knowledge*) is an existing, validated course, and the other (*Introduction to Learning for Sustainability*) is being developed in partnership with WWF Scotland and with expertise from within the school of education (Hamish MacLeod) and Amy Woodgate (UofE Distance Education Initiative). The latter course is the only one that is entirely new. The remaining two courses draw very heavily from existing courses

in the current Postgraduate Outdoor Education suite. They have been re-conceptualised in such a manner that they can be taught locally (as opposed to on the Isle of Rum or in the Cairngorms, as they currently are).

The components that make up the programme contribute to the University's widening participation scheme by offering a number of pathways, intermediate qualifications, and Continuing Professional Development (CPD) courses. There are three possible exit points: Postgraduate Certificate (60 credits), Postgraduate Diploma (120 credits), and MSc (180 credits).

Postgraduate Certificate Courses	**Method**	**Masters Credits**	**Status**
Introduction to Learning for Sustainability	Blended learning	20	Being written
Ecosystems for Educators	Campus / field	20	Revision of existing course
Outdoor Learning	Campus/ field	20	Current (level 10)

Postgraduate Diploma Courses (all of the above plus the following)	**Method**	**Masters Credits**	**Status**
Education for Environmental Citizenship	Campus / field	20	Current
Environmental Philosophy and City-based Outdoor Learning	Campus / field	20	Revision of existing course
Experiential Education	Campus / field	10	Recently validated
The Sources of Knowledge	Blended learning	10	Current

MSc Courses (all of the above plus the following)	**Method**	**Masters Credits**	**Status**
Planning Research	Campus / field	10	Current
Dissertation	Student research	50	Current

Table 1: Overview of Programme Structure and Course Exit Points

1.6 Timetable

The indicative sequence and timing for the programme is set out below. The actual months each course is offered will depend on semester dates. Generally speaking, part-time students can take courses in any order. However, it is recommended to take *The Sources of Knowledge* and *Introduction to Learning for Sustainability* early on. The *Dissertation* is not timetabled.

September	October	November	December
Outdoor Learning (two weekends)	*Sources of Knowledge* (Blended, online or face to face, five weeks)	*Education for Environmental Citizenship* (two weekends)	*Experiential Education* (one weekend residential)
Introduction to Learning for Sustainability (BL, semester long)			

January	February	March	April
	Environmental Philosophy and City-based Outdoor Learning (two weekends)	<u>Planning Research</u> (Blended, online or face to face)	Ecosystems for Educators (two weekends)

Table 2: Indicative sequence and timing of programme. Courses making up the PG Certificate are shown in plain text, the additional courses making up the PG Diploma in italics, and the MSc research methods course is underlined.

An example of how a part-time student might schedule their participation is shown below.

Part-time Year 1:

September	October	November	December
	Sources of Knowledge (Blended, online or face to face, five weeks)		*Experiential Education* (one weekend)
Introduction to Learning for Sustainability (BL, semester long)			

January	February	March	April
	Environmental Philosophy and City-based Outdoor Learning (two weekends)		Ecosystems for Educators (two weekends)

Part-time year 2:

September	October	November	December
Outdoor Learning (two weekends)		*Education for Environmental Citizenship* (two weekends)	
January	February	March	April
		<u>Planning Research</u> (Blended, online or class contact)	

Tables 3a and 3b: An example of the timing and sequence of the programme for a part-time student over 2 years. Courses making up the PG Certificate are shown in plain text, the additional courses making up the PG Diploma in italics, and the MSc research methods course is underlined.

2 Course Descriptors

2.1 Introduction to Learning for Sustainability

i) Rationale

That in the relatively brief period that Homo sapiens has been the dominant species on the planet we have had a dramatic impact on the fabric and functions of the planet is irrefutable, as is the evidence that this is leading to further and perhaps irreversible effects on planetary systems and climate, loss of biodiversity, ecological impacts of manufactured chemicals, inequality, and related concerns of human well-being and economic stability.

This course aims to critique aspects of the scientific evidence and social context of the above situation and our responses to it. In so doing participants will consider educational responses to the contested concept of 'sustainability'. This will involve participants considering the breadth and complexity of concepts of 'sustainability', and necessarily challenging and partially re-grounding their present understandings and practices by comparing these with the internationally diverse set of practices that sail beneath the 'flag of convenience' that is "learning for sustainability" and its variants.

Although of wide relevance at a national and international level as an introductory Masters-level course in Learning for Sustainability, the course is also a specific response to the General Teaching Council for Scotland's (GTCS) Revised Professional Standards for qualifying and registered teachers, which include explicit and implicit references to Learning for Sustainability, and the Scottish Government's commitment to implement the recommendations of the Ministerial Advisory Group's report on 'Learning for Sustainability'. Despite this however, the course provides sufficient flexibility to accommodate the needs and contexts of a wide range of UK and overseas teachers, and also UK and international professionals and practitioners beyond school teachers, such as teaching staff in higher and further education; trainers working in the public, private and third sectors; community development workers, NGO staff etc. The flexibility will be provided by encouraging participants to relate course themes and activities, including assessment tasks, to their professional practice.

Whilst an Introduction to Learning for Sustainability is being developed as an on-line course it may also be available through class contact on-campus.

ii) Prior Requirements/Place in sequence of study

No prior requirements. Semester 1.

iii) Learning Outcomes

Upon completion of the course, students should have:

- a critical understanding of the core concepts underpinning sustainability, with an emphasis on learning for sustainability;
- developed an awareness of the ways in which sustainability issues are innately interdisciplinary and are relevant across the school and university curricula, including Curriculum for Excellence;

- developed a critical awareness of the roles scientific knowledge plays, or not, in people's understanding of, and 'belief' in, climate change, the need for sustainability etc.
- undertaken a comparative exploration of international curricula, to critically assess successful approaches to learning for sustainability;
- critically engaged with the concept of 'learning for sustainability' to evaluate a range of practices and pedagogical approaches currently used in teaching and learning;
- developed an awareness of theory and practice in organisational change and examined how this could inform how they introduce and develop learning for sustainability in their professional practice;
- examined educational leadership in relation to sustainability
- developed a critical awareness of the ways in which global challenges are publicised and previewed and the educational issues relating to learner 'helplessness'.
- critically assess the success of the transition from local to global learning contexts;

iv) Teaching, Learning & Assessment Strategies

This course will be delivered on-line, and will use a variety of interactive teaching and learning approaches including videos, animation, podcasts, on-line discussion seminars, on-line reading groups, personal reflection tasks, and action learning tasks. The course will culminate with a student research project. A key focus of many of these activities, including the assessments, will be exploration of, and critical reflection on, putting theory into practice. There will be 27 hours of staff contact time through on-line discussions and seminars, and through participative feedback on reflective journals and assessments.

- The course will be delivered over a 12 week block, with both formative and summative assessment points.
- Students will be expected to complete relevant readings and assignment tasks in their own study time
- Students will be expected to keep a personal reflective journal – elements of which they should be prepared to share with their tutor on a weekly basis
- Students will be expected to participate in regularly in on-line activities.
- Students will be expected to undertake a research project at the end of the course for submission as an assessed piece.

v) Indicative Content

- Rationales for teaching and learning within the context of 'Sustainability'
- Interdisciplinarity of sustainability in curricula, including Curriculum for Excellence
- Introductory scientific, political and cultural influences on learning and living for sustainability
- Citizenship, social justice and sustainability in schooling
- Values and participation: Whole-person learning -- engaging the heart, mind and body

- Policies, Strategies, Cultures and Change: introducing, developing and championing learning for sustainability into existing organisational contexts
- Shifting perspectives: The transition from local to regional and global in sustainability and in education.
- Problem-based learning: The 'helpless generation'
- Living for sustainability; affecting meaningful change
- Reflective research assignment – Teaching for sustainability
- Action research assignment

vi) Assessment

In order to pass this course, students will be expected to:

- Mid-course, provide the course tutor with an outline of the intended theme of the planned research paper (300 words) on which formative feedback will be provided by the tutor.
- Mid-course, complete a peer-assessed reflective assignment on 'Teaching for Sustainability' to be produced as a video, podcast, pdf or other on-line media for sharing with peers (25%);
- Provide an overview of the key personal learning outcomes from their weekly reflective journal (25%) and incorporate the emergent themes from this to complete a research paper detailing their action research project (50%) (total 3000 words).

Assessment Criteria

Students should be able to:

- demonstrate a critical understanding of a range of specialised theories, concepts and principles relating to the teaching and learning of sustainability;
- display a critical understanding of a significant range of the key professional skills, techniques and practices associated with teaching and learning for sustainability;
- communicate concepts and principles of sustainability, using appropriate methods, to a range of audiences that may have different levels of knowledge and expertise;
- use a wide range of ICT applications to support and enhance learning for sustainability;
- apply knowledge and understanding in planning and executing a project of research within their own professional context or setting.

vii) Indicative Reading

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viii) Course Co-ordinator
tbc

ix) Credit Rating
20 SCQF Level 11 credits

2.2 Outdoor Learning (EDUA10142)

i) Rationale

Recent UK government reports on the role of outdoor learning in schools have emphasised the educational, social and health benefits of outdoor learning in the development of young people. However, despite the evidence supporting outdoor learning, many schools are not well placed to support this form of learning. Outdoor Learning is offered as an initial step towards assisting teachers to incorporate outdoor learning into their teaching and curriculum planning. It does not aim to train student-teachers as outdoor specialists, but aims to provide them with some understanding of the benefits, processes and skills related to learning in the outdoors. This interdisciplinary course is designed to give students the tools with which to teach across the curriculum in an outdoor context. Course content is closely aligned with the development of 'the four capacities' outlined in Curriculum for Excellence. In terms of educational policy, the course supports the recommendations of Curriculum for Excellence through Outdoor Learning (LTS, 2010).

ii) Prior Requirements/Place in sequence of study

No prior requirements. Semester 2.

iii) Learning Outcomes

Upon completion of the course, students should be able to:

- understand the broad concepts underpinning outdoor learning in the UK;
- have gained experience and understanding of ways in which outdoor learning can be used for various educational purposes;
- be aware of the ways in which Curriculum for Excellence and outdoor learning may inform each other;
- be able to understand and apply principles of experiential learning to teaching young people in outdoor (and indoor) contexts;
- understand principles of place- and community-based education
- have developed an awareness of key issues in education for environmental sustainability
- be aware of safety issues pertinent to teaching and learning with groups of young people in outdoor settings;
- have developed a critical awareness of educational issues relating to outdoor learning and its interdisciplinary applications.

iv) Teaching, Learning & Assessment Strategies

A variety of teaching and learning approaches will be used, including lectures, discussion seminars, workshop tasks, outdoor activities. The course will culminate with student-led outdoor teaching sessions. Although the course will be taught primarily by the course organiser, other staff with outdoor learning expertise may contribute to specific sessions.

- Teaching contact time: 24 hours comprised of practical sessions, classes, and workshops

- Students will be expected to complete relevant readings and assignment tasks in their own study time
- Students will spend some of the teaching sessions outdoors and will be expected to dress appropriately
- The ways in which theory and policy inform practice is a dominant theme of the course. This is reflected in the teaching and, in particular, the two assignments, both of which are inter-linked. The teaching session and the essay both require students to draw on outdoor learning literature and Curriculum for Excellence policy documents.
- An opportunity for formative feed-forward is provided through a tutorial where students can, with the course tutor and classmates, discuss their idea for their teaching session and assignment.
- Content relating to community-based education and education for sustainability is further contextualised and enriched by off-site visits to community agencies (e.g. Out of the Blue, Grassmarket Community Trust, Historic Scotland, and Bridgend Growing Communities).

v) Indicative Content

- Rationales for learning outdoors
- Outdoor learning and Curriculum for Excellence
- Experiential learning in outdoor contexts
- Place- and community-based education
- Sustainability education
- Safety and group management in the outdoors

vi) Assessment

In order to pass this course students will be expected to:

- in pairs, plan, facilitate and evaluate a minor outdoor activity (includes lesson plan and risk management plan – 1000 words equivalent); The teaching session is worth 25% of the final mark;
- and, satisfactorily complete an academic paper outlining the theoretical underpinning of the lesson (3000 words). The essay is worth 75% of the final mark.

Assessment Criteria

Students should demonstrate:

- an understanding of the potential for outdoor pedagogy within the Scottish school curriculum guidelines;
- the ability to plan, facilitate and evaluate an outdoor learning session;
- and, the ability to reflect critically on outdoor teaching and learning in educational contexts.

vii) Indicative Reading

Baker, M. (2005). Landfullness in adventure-based programming: Promoting reconnection to the land. *Journal of Experiential Education*, *27*(3), 267-276.

Beames, S., Higgins, P. & Nicol, R. (2011). *Learning outside the classroom.* New York: Routledge.

Beames, S., Atencio, M. & Ross, H. (2009). Taking excellence outdoors. Scottish Educational Review, 41(2), 32-45.
Cooper, G. (1998). *Outdoors with young people: A leader's guide to outdoor activities, the environment and sustainability.* Lyme Regis: Russell House.
Dewey, J. (1938/1997). *Experience and education.* New York: Simon & Schuster.
Higgins, P. & Nicol, R. (2008). Outdoor education. In T. Bryce & W. Humes (Eds.), *Scottish education: Beyond devolution* (3rd Ed) (pp. 540-545). Edinburgh: Edinburgh University Press.
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Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development.* Englewood Cliffs: Prentice Hall.
Learning and Teaching Scotland. (2009*). Curriculum for Excellence*. Retrieved from http://www.curriculumforexcellencescotland.gov.uk/index.asp
Learning and Teaching Scotland. (2007). *Taking learning outdoors*. Retrieved from http://www.ltscotland.org.uk/takinglearningoutdoors/about/nationaldocuments/partnershipforexcellence.asp
Learning and Teaching Scotland. (2010). *Curriculum for Excellence through outdoor learning.* Retrieved from http://www.ltscotland.org.uk/outdoorlearning/curriculumforexcellence/index.asp
Leonard, A. (2010). *The story of stuff: How our obsession with stuff is trashing the planet, our communities, and our health - and a vision for change.* London: Constable.
Orr, D.W. (2004). *Earth in mind: On education, environment, and the human prospect.* Washington: Island Press.
Scottish Executive. (2004). *Health and safety on educational excursions: A good practice guide.* Edinburgh: Scottish Executive.
Smith, G. & Sobel, D. (2010). *Place-and community-based education in schools.* London: Routledge.
Thorburn, M. & Allison, P. (2010). Are we ready to go outdoors now? The prospects for outdoor education during a period of curriculum renewal in Scotland. *Curriculum Journal, 21*(1), 97-108.
Wattchow, B. & Brown, M. (2011). *A pedagogy of place: Outdoor education for a changing world.* Clayton, Victoria: Monash University.

viii) Course Co-ordinator
Dr. Simon Beames

ix) Credit Rating
20 SCQF Level 10 credits

2.3 Ecosystems for Educators

i) Rationale

An understanding of ecosystems (in the widest sense) must be central to Learning for Sustainability. Despite humankind's our utter dependence on biodiversity and bio-geochemical systems of the earth, the centrality of this in our survival and in the maintenance of a 'healthy' planet is far from a central theme in education, and there seems little social awareness of this, nor emphasis in political decision-making. This is particularly pertinent in light of the global and interdisciplinary issues and concepts that characterise many facets of the Learning for Sustainability policy field.

The main aim of the course is to engage participants in thinking about learning for sustainability by interrogating the influence of cultural understandings of the planet, specifically 'as a provider of services', on their education thinking and practices. The course will examine a range of ecosystems as providers of 'services', and in doing so it will challenge the notion of our species as being in any way separate from the ecosphere and its processes.

The course addresses three closely inter-related themes:

Firstly: Developing an understanding of the geophysical and biological processes that have shaped, and continue to shape, our living planet, and the ways in which ecosystems provide the foundations human life – fresh water, food and shelter as well as contributing to infrastructure, industry, economy, human health and well-being and poverty alleviation. The many ways in which human activity impacts on these processes will also be addressed.

Secondly: Critically examining from both philosophical and educational perspectives the concept of 'ecosystem services' and the ways in which we understand, manage and assign 'value' to ecosystems, biodiversity and their products and services, with a particular focus on how the ways in which we conceptualise and communicate about ecosystems may affect our success in creating the conditions for humans and the rest of the natural world to flourish.

Thirdly: Building on the background knowledge and theory addressed above, considering the practical implications for students' own professional practice in learning and teaching. including but not limited to the place of experiential education.

This course supports the core Certificate course, Introduction to Learning for Sustainability, by addressing a central pedagogical domain: the material limits of the planet and their representation, and will link with the courses, *Outdoor Learning*, which will provide opportunities for direct pedagogical involvement with ecosystems, and *Experiential Education* which will provide a theoretical grounding in this pedagogical approach.

ii) Prior Requirements/Place in sequence of study

No prior requirements. Semester 2.

iii) Learning Outcomes

Upon completion of the course, students should:

- Understand the main physical and biochemical cycles responsible for the evolution and maintenance of the current earth system at a global scale.
- Understand the ecological principles that govern the evolution and maintenance of ecosystems at regional and local scales, and the place of humans within these ecological systems.
- Be able to identify and explain examples of human activities that impact, intentionally or otherwise, on the functioning of ecosystems at local, regional and global scales, such as human settlement, energy use, water use, food production, etc., and the relevance of population growth and aggregate demand.
- Have a critical understanding of the interdependence of natural and human systems and the role of ecosystem services in sustaining and maintaining human life;
- Be able to critically consider the concept of 'ecosystem services' and the ways in which we 'value' and 'manage' ecosystems, including both the potential benefits and risks that may arise from adopting such approaches.
- Be able to make informed and reasoned judgements about the quality, validity and relevance of evidence and arguments grounded in qualitative and quantitative data.
- Have experienced and critically evaluated a variety of 'modern experiential' and 'traditional' field studies techniques during practical investigations of a range of natural and managed terrestrial and aquatic ecosystems.
- Have developed and reflected critically upon personal strategies to address the topics of this course in their professional practice.

iv) Teaching, Learning & Assessment Strategies

The course is offered over two weekend-long sessions. Students are expected to undertake preparatory reading and research before the first weekend, then further reading, work on first assignment and online individual and group activities before the second weekend, after which they work on their second assignment. Teaching time of 27 hours is made up from lectures, seminars, workshops and fieldwork.

A variety of teaching approaches are used. Lectures introduce the main concepts, which are explored in more depth through structured discussions, workshops and reflective, comparative and evaluative activities. Students individually undertake an analysis of an ecosystem case study, and are expected to present learning materials, approaches and arguments to the class in teaching exercises. These activities provide opportunities for peer and tutor formative feedback. A proportion of this course is conducted outdoors with local excursions to sites of interest to explore field-work best practice and technique, as well as evaluating approaches for managing groups in fragile ecosystems or in other locations that require an understanding of land conflict issues. Students will be expected to complete background reading and independent study in order to meet the level

required to complete the course successfully. Specialist speakers will provide additional input.

v) Indicative Content

- Fundamentals of earth systems and ecosystems: principles and processes; resilience and tipping points; change and continuity of time and scale; systems thinking.
- Humans in and of ecosystems? Our ultimate reliance on ecosystems. Human impact on ecosystems: growth; population; technology; ecosystem management.
- Ecosystems services: key features of the concept. Development of concept and how it has changed over time.
- Value and Values: How we conceptualise and value ecosystems. Implications of, and influences on, policy, management, cultural values and attitudes.
- 'The Science tells us…': What 'science' can, and can not, tell us about ecosystems and our relationships with them: critical examination of the use and abuse of qualitative and quantitative data, and tools such as modelling and scenario planning in understanding and communicating about ecosystems.
- Global and local ecosystem services case studies; (i) Woodland (ii) Coastal, (iii) Freshwater, (iv) Peatlands, marsh and bogs
- Experiential environmental education techniques (their use and critical evaluation)
- Design, practice and evaluation of selected outdoor lessons and field techniques

vi) Assessment

The assessment for this course will consist of:

1. Students will produce a public communication or learning activity relating to ecosystem services. The form of the assignment is flexible and could include, for example: an information leaflet, poster or interpretative panel for the public; an educational resource for schools; a lesson plan; a workshop plan; a briefing note for professional colleagues etc. This will be grounded in a specific case study ecosystem of their choice. It will communicate or teach about the relationships between humans and their case study ecosystems. It may include images and text, and will normally be encompassed within no more than four sides of A4 or equivalent. (40%)

2. A 150 word proposal for the above, describing the case study and the planned approach will be submitted before the mid-point of the course and will be formatively reviewed by the course tutor.

3. Students will share drafts of the above assignment during the second weekend and will receive guided peer feedback.

4. Students will undertake a critical reflection on the above piece of work, in which they will justify their choice and framing of the work, their objectives and the approach they have taken; and also consider the extent

to which they have succeeded in their objectives. They will be expected to make particular reference to (a) critiques of ecosystem services (b) the pedagogical approach they have adopted. 2000 words. (60%)

Assessment Criteria
Students should demonstrate:

- An understanding of ecosystem functions and the concept of ecosystem services
- The ability to critique these concepts and the relevance of these critiques to teaching about the relationships between humans and 'nature', and our dependence on the natural world
- the ability to plan, prepare and evaluate a learning activity centred around a specific ecosystem

vii) Indicative Reading

Anderies, J.M., Janssen, M.A. & Ostrom, E., (2004). A framework to analyze the robustness of social-ecological systems from an institutional perspective. *Ecology and Society, 9*(1), 1–28.

Beck, U. (2010). Climate for change, or how to create a green modernity? *Theory, Culture & Society, 27*(2-3), 254–266.

Blackmore, E. & Holmes, T. (2013). *Common Cause for Nature: Values and frames in conservation.* Retrieved from http://valuesandframes.org/download/reports/Common%20Cause%20for%20Nature%20-%20Full%20Report.pdf

Brown, L. (2012). 'Storytelling and ecological management: understanding kinship and complexity'. *Journal of Sustainability Education*. Retrieved from http://www.jsedimensions.org/wordpress/content/storytelling-and-ecological-management-understanding-kinship-and-complexity_2013_02/

Chan, K.M.A., Satterfield, T. & Goldstein, J. (2012). Rethinking ecosystem services to better address and navigate cultural values. *Ecological Economics, 74*, 8-18.

Costanza, R. (2006). Response to McCauley: ecosystems without commodifying them. *Nature, 44*(3), 749-750.

Daily, G. (Ed.) (1997). *Nature's services: Societal dependence on natural ecosystems.* Washington D.C.: Island Press.

Folke, C., Jansson, A., Rockstrom, J., Olsson, P., Carpenter, S., Chapin, S. & Westley, F. (2011). Reconnecting to the Biosphere. *Ambio 40*(7), 719–738.

Gomez-Baggethun, E., de Groot, R., Lomas, P.L. & Montes, C. (2010). The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes. *Ecological Economics, 69*(6), 1209-1218.

Gunderson, H.L. & Holling, C.S. (Eds.) (2002). *Panarchy*. Washington, DC: Island Press.

Hein, L., van Koppen, K., de Groot, R.S. & van Ierland, E.C. (2006). Spatial scales, stakeholders and the valuation of ecosystem services. *Ecological Economics, 57*, 209-228.

Juniper, T. (2013). What has nature ever done for us? London: Profile.

Lebel, L., Anderies, J., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes. T. & Wilson. J. (2006). Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society, 19*(1), 3-20.

Van der Leeuw, S., Costanza, R., Aulenbach, S., Brewer, S., Burek, M., Cornell, S. & Steffen, W. (2011). Toward an integrated history to guide the future. *Ecology and Society, 16*(4). DOI: http://dx.doi.org/10.5751/ES-04341-160402

McCauley, D.J. (2006) Selling out on nature. *Nature, 443*, 27-28.

McNeill, J.R. (2000). *Something new under the sun*. New York: W.W. Norton & Co.

Meadows, D.L. (2006). Tools for the transition to sustainability. In M. Keiner, (Ed) *The future of sustainability* (pp. 161-179). Dordrecht: Springer Netherlands.

Meadows, D.H. (2009). *Thinking in systems: A primer*. London: Earthscan.

Middleton, N. (1999). *Global casino: An introduction to environmental issues*. London: Arnold.

Millennium Ecosystem Assessment Program. (2005). *Ecosystems and human well-being: Synthesis*. Washington, DC: Island Press.

Moberg, F. & Rönnbäck P. (2003). Ecosystem services of the tropical seascape: interactions, substitutions and restoration. *Ocean and Coastal Management, 46*, 27-46.

Norgaard, R.B. (2010). Ecosystem services: From eye-opening metaphor to complexity blinder. *Ecological Economics, 69*(6), 1219-1227.

Reid, W., Mooney, H., Capistrano, D., Carpenter, S., Chopra, K., Cropper, A.,…Shidong, Z. (2006). Response to McCauley: the many benefits of ecosystem services. Nature, 443, 749-750.

Robertson, M. (2012). Measurement and alienation: making a world of ecosystem services. *Transactions of the Institute of British Geographers, 37,* 386-401.

Rounsevell, M.D.A., Dawson, T.P. & Harrison, P.A. (2010). A conceptual framework to assess the effects of environmental change on ecosystem services. *Biodiversity and Conservation, 19*, 2823-2842.

Smout, C. & Stewart, M., (2013). *The Firth of Forth: An environmental history.* Edinburgh: Birlinn.

Seppelt, R., Fath, B., Burkhard, B., Fisher, J.L., Grêt-Regamey, A., Lautenbach, S., Perth, P., Van Oudenhoven, A.P.E. (2012). Form follows function? Proposing a blueprint for ecosystem service assessments based on reviews and case studies. *Ecological Indicators, 21*, 145-154.

Steffen, W., Persson, A., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson K., vedin, U. (2011). The Anthropocene: From Global Change to Planetary Stewardship. *AMBIO, 40*(7), 739–761.

Santone, S. (2013). Sustainability and Economics 101: A primer for elementary educators. *Journal of Sustainability Education.* Retrieved http://www.jsedimensions.org/wordpress/content/sustainability-and-economics-101-a-primer-for-elementary-educators_2010_05/

Stockholm Resilience Centre. (2012). *Insight #3 Adaptive Governance*. Stockholm Resilience Centre. Retrieved from http://www.stockholmresilience.org/21/news--events/research-insights/insights/2-28-2012-insight-3-adaptive-governance.html

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TEEB. (2010). The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB.
Turner, R. & Daily, G. (2008). The Ecosystem Services Framework and Natural Capital Conservation. *Environmental and Resource Economics, 39*, 25-35.
UK National Ecosystem Assessment. (2011). *The UK National Ecosystem Assessment: Synthesis of the key findings*. Cambridge: UNEP-WCMC.
UNEP. (2011). *Valuing ecosystem services: Benefits, values, space and time*. UNEP ESE working paper series, paper No. 3. Retrieved from http://www.bioecontwork.org/pages/UNEP_publications/03%20Valuing%20Ecosystem%20Services.pdf
UNESCO. (2012). *Climate change in the classroom*. Retrieved from http://unesdoc.unesco.org/images/0021/002197/219752e.pdf
Vira, B. & Adams, W.M. (2009). Ecosystem services and conservation strategy: Beware the silver bullet. *Conservation Letters, 2*(4), 158-162.

viii) Course Co-ordinator
Prof. Pete Higgins

ix) Credit Rating
20 SCQF Level 11 credits

2.4 Education for Environmental Citizenship (EDUA11215)

i) Rationale

There is evidence that educators find it difficult to nurture long-standing identities of environmental citizenship with learners. This is an important problem facing responses to issues of ecological crises/sustainability. The course offers a series of theoretical and reflective tools and an opportunity to use them to evaluate educational case studies and the subjectivities of potential learners.

ii) Prior Requirements/Place in sequence of study

No prior requirements. Semester 2.

iii) Learning Outcomes

Upon completion of the course, students will be able to:

- articulate and evaluate contested concepts of environmental citizenship and identity in late modernity;
- critique a range of approaches to interrogating environmental identity and its sources, and critique related published research;
- plan, execute and evaluate a narrative enquiry, and reflect on being a participant in such an enquiry;
- plan and evaluate learning experiences that are informed by concepts of environmental citizenship and identity;
- critically contextualise their own and others' practices in the socio-cultural and institutional fields that inform the development of education for environmental citizenship;
- and, evaluate a range of case study pedagogies for environmental citizenship in the light of the above.

iv) Teaching, Learning & Assessment Strategies

The course will involve lectures, small group and whole-group discussions. Much of this will be based on prescribed reading that must be completed in advance. There will be one outdoor visit. Course members will be expected to contribute actively and to apply their professional experience to the issues under consideration. Students will also be expected to complete additional background reading and independent study in order to meet the level required to complete the course successfully.

v) Indicative Content

Each day's seminars will tackle the following questions:

- To what extent does environmental/sustainability/citizenship education represent a recently globalised education policy field?
- To what extent is it possible to influence environmental behaviour through education
- To what extent is it possible or desirable to learn to be a local and/or global citizen?
- What are the current research agendas in environmental / sustainability / citizenship education?

- What might be the future of education for environmental citizenship?
- To reflect on these questions, the course will engage in narrative enquiry and in the critical evaluation of case studies of pedagogies for environmental citizenship.

vi) Assessment

In order to pass this course students will be expected to satisfactorily complete a written assignment (4000 words) based on narrative inquiry. Narrative inquiry is a wide area of research methods, including life history and (auto-) biographical research. The assignment falls into this broad area but it is quite open. It is an exploration of an individual's environmental citizenship from the perspective of their lived experience (as related to you in an interview). The aspect of environmental citizenship that you wish to pursue is up to you and will also depend on your choice of interviewee.

Assessment Criteria
The School of Education Postgraduate Common Marking Scheme

vii) Indicative Reading

Boeve-de Pauw, J. & Van Petegem, P. (2011). The effect of Flemish Eco-Schools on student environmental knowledge, attitudes and affect. *International Journal of Science Education, 33*(11), 1513-1538.

Brown, J., Ross, H. & Munn, P. (2012). *Democratic citizenship in schools. Teaching controversial issues, traditions and accountability*. Edinburgh: Dunedin Press.

Chase, S. E. (2005). Narrative inquiry: Multiple lenses, approaches, voices. In N.K. Denzin and Y.S Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed) (pp. 651-679). London: Sage.

Dobson, A. & Bell, D. (Eds.) (2006). *Environmental Citizenship.* Cambridge, MA: MIT Press.

Gruenewald, D. A. & Smith, G. A. (Eds.) (2008). *Place-Based education in the global age: Local diversity.* New York: Routledge.

Gray-Donald, J. & Selby, D. (2008). *Green frontiers: Environmental educators dancing away from mechanism.* Rotterdam: Sense.

Jacobson, S. K., McDuff, M. D. & Monroe, M.C. (2006). Conservation education and outreach techniques. Oxford: Oxford University Press.

McKenzie, M., Hart, P., Bai, H. & Jickling, B. (2009). *Fields of green: Restorying culture, environment, and education.* Cresskill, NJ: Hampton Press.

Peter, M. A., Britton, A. & Blee, H. (Eds.) (2008). *Global citizenship education: Philosophy, theory and pedagogy*. Rotterdam: Sense.

PIRC. (2011). *The common cause handbook: A guide to values and frames for campaigners, community organisers, civil servants, fundraisers, educators, social entrepreneurs, activists, funders, politicians, and everyone in between*. Y Plas: Public Interest Research Centre.

viii) Course Co-ordinator
Dr. Hamish Ross

ix) Credit Rating
20 SCQF Level 11 credits

2.4 Environmental Philosophy and City-based Outdoor Learning

(based on Environmental Education: Concept-based Practice)

i) Rationale

Two traditional philosophical concerns involve the enquiry into existence and being (ontology) and how existence and being can be understood (epistemology). The history of western philosophy shows that these concerns have an enduring appeal reaching back to at least the ancient Greeks. However, this 'love of wisdom' has never been as important than it is now, knowing that the survival of the human species requires changes to the way we live our modern lives.

These traditional realms of enquiry pose important questions in a contemporary world characterised by a changing atmosphere, degraded land and seascape, reduced biodiversity, yet infinite beauty. The course will look at standpoints such as realism (to explore the world as it is) and social constructivism (to explore the world as we perceive it) as central components of an ecological ontology intended to improve the relationship between human beings and the planet we inhabit. It will explore epistemological diversity and why different ways of knowing are central to more fully understand this relationship. 'Inquiry as stance' will be explored as a method of enquiry intended to seek out the knowledge and wisdom necessary to develop action competences that promote sustainable living.

This philosophical background provides the basis from which to consider the implications for city-based outdoor learning. The planet is experiencing the largest urban growth in its history and so the way that people experience city environments is central to the quest in learning for sustainability. This course focuses on being outdoors and indoors in city environments to explore how these settings might be used to provide inspiration toward learning for sustainability. Key to this enquiry is the notion of 'presence' and 'phenomenology', which suggest that the way in which people experience the places they inhabit influences their values. Thus the idea of 'presence' becomes central to the issue of our everyday personal and social identity that has wider moral implications for the way we relate to the planet.

This course therefore aims to develop leaders and/or research scholars in the field of Learning for Sustainability to the extent that these roles require a command of its philosophical underpinnings, and, in particular, of the diverse ways in which learners might make meanings in and of 'environment'.

It is rooted in the tradition of reform pedagogy and seeks to explore the relationship between indoor and outdoor learning, motivation and pro-environmental behaviour. It specifically takes note of the proclamation from the United Nations Educational, Scientific and Cultural Organisation (UNESCO) that 'all levels and forms of existing educational and teaching and learning programmes need to be reviewed and re-oriented to address the causes and consequences of climate change' (UNESCO, p. 1). Using this proclamation as a 'sounding board' this course will explore city-based

outdoor learning and the opportunities available in the development of programmes intended to address the transition towards sustainable living.

ii) Prior Requirements/Place in sequence of study
No prior requirements. Semester 2.

iii) Learning Outcomes
Upon completion of the course, students should:

- have critically engaged with various theories under the umbrella term 'environmental philosophy', be aware of the assumptions that underpin these, and their implications for city-based outdoor learning;
- Understand the historical development of environmental education and the emergence of Education for Sustainable Development (ESD) and a range of contested synonyms and definitions;
- have critically engaged with ontological assumptions and epistemological positions in order to formulate a programme of city-based outdoor learning;
- have critically engaged with theories of reform pedagogy and experiential education to understand the role of education as an agent of change;
- have considered a range of thematic approaches to outdoor environmental education and be able to exercise critical reflection in the compilation of a programme of city-based outdoor learning;
- understand the concept of outdoor environmental education from the perspective of different providers and their varying rationales;
- have conceptualised all of the above material and be able to articulate, at least provisionally, a personal stance regarding environmental sustainability as a guiding principle for professional practice;
- have considered a range of educational contexts in which to promote concept-based practice (a school class, a group from an outdoor centre, field study centre, etc).
- and, have taken part in a group to deliver a programme of city-based outdoor learning to operationalise epistemological diversity.

iv) Teaching, Learning & Assessment Strategies
The course will be delivered in mixed mode, with some taught components, group-based discussion activities, visiting speakers, and site visits. The contact time for this course is 27 hours and includes lectures, seminars/workshops, and fieldwork. The emphasis of the course will be on the unity of theory and practice. Course members will be expected to contribute actively and to apply their personal and/or professional experience to the issues under consideration. Students will be expected to complete background reading and independent study in order to meet the level required to complete the course successfully. Furthermore, students will consider a range of educational contexts in order to translate theory into professional practice (e.g. a school class, a group from an outdoor centre, field study centre, etc).

v) Indicative Content

- The use environmental philosophy as a standpoint and guide for city-based outdoor learning.
- The role of 'presence' as a moral guide for practice.
- Recent national and international trends in outdoor environmental education and related subjects.
- Worldviews such as holism and reductionism, realism and social constructivism.
- Outdoor learning (and its synonyms) and the implications for city-based practice.
- The role of experiential learning and concept-based practice in the context of outdoor environmental education.
- Theoretical, personal and professional perspectives on outdoor environmental education.

vi) Assessment

Assessment will be in the form of a written assignment of 4000 words. This covers LOs 1-9. However, this does not include the assessment of LO 10 (although this may inform the other LOs). To maintain flexibility within the mode of assessment the students will prepare a lesson plan for an activity within the scope of the course and deliver the lesson to their peer group. Students will be formatively assessed on this activity by course tutors and will be provided with the opportunity to critically reflect and peer assess each other's lesson plan and exercise.

Task One (no more than 300 words): Choose a place in the city (it is expected that the city will be Edinburgh but part-time students living outside Edinburgh may wish to choose somewhere urban that is convenient for them). Describe the place – here are some examples of how you might describe the place, but add your own:does it have a name? does it have boundaries? what are its features? what is there and what is not there? is it quiet or noisy? maybe it is covered in concrete. maybe it is a greenspace. This section can be descriptive and there is no need to provide references.

Task Two (no more than 500 words). The key thing for task one is that first; you have visited that place; and second, this place has some significance for you. For task two, describe this significance. To do this you should refer to the concepts of presence and phenomenology as presented by, but not restricted to, Nicol (2013). This section should not be descriptive but fully referenced and in accordance with critical academic discourse.

Task Three (no more than 100 words). Choose an imaginary group you would like to take to your place and their educational background (e.g. is your group a school class, a group from an outdoor centre, field study centre etc). How many of them are there? How old are they. Are there any other characteristics of the group that are important to your assignment (e.g. gender, special needs)? This task can be descriptive and there is no need to provide references.

Task Four (3000 words). Choose or design one activity that you will use with your group so that you can develop the significance of this place to address the UNESCO proclamation in the rationale (Paragraph 2 of the course

descriptor above). The challenge is to demonstrate how you can use this place to address the transition towards sustainable living. To do this you need to refer specifically to all four points of Reason's (1998, 2006) extended epistemology (experiential, presentational, propositional and practical knowing) to demonstrate how this activity will encourage your learners to deepen their experience of this place. This task should not be descriptive but fully referenced and in accordance with critical academic discourse.

Use these task headings to structure your assignment in order to demonstrate how theoretical perspectives provide support for and integrate outdoor and indoor learning.

Feedforward: On the last day of the teaching block students will come prepared with:

- a written draft of Task 1 (300 words)
- a 5 minute presentation of draft Task 1

Students will be divided into small groups and will take turns in presenting their work. This will be followed by five minutes of questions and answers. A scribe will be appointed in each group to take notes of any collective wisdom that the process reveals and any problems encountered. The scribe from each group will present their findings in a plenary session and the collective notes will provide feedforward. These will be posted on Learn

Assessment Criteria
Students should:

- identify appropriate primary and secondary sources to understand the relationship between theory and practice relating to outdoor environmental education;
- critically analyse the deployment of theories and methods used in delivering a programme of outdoor environmental education;
- understand the social, economic and political implications for developing a programme of outdoor environmental education;
- assess the implications of epistemological diversity for experiential learning and concept-based practice;
- identify opportunities for developing outdoor environmental education in city-based environments;
- identify tangible links between theories of epistemological diversity with practical activities;
- demonstrate the ability to deploy the knowledge and skills gained during the course in a chosen urban setting
- demonstrate the potential to translate teaching intentions into learning outcomes.

vii) Indicative Reading

Bowers, C.A. (1993). *Education, cultural myths and the ecological crisis*. Albany, NY: State University of New York Press.

Brennan, A. (2010). *Understanding environmental philosophy*. Durham: Acumen.

Capra, F. (1996). *The web of life.* London: Harper Collins.
Cochrane-Smith, M. & Lytle, S. (2009). Teacher research as stance. In S.E. Noffke and B. Somekh (Eds.), *The SAGE Handbook of Educational Action Research*, (pp. 39-49). London: Sage.
Crompton, T. (2010). *Common cause: The case for working with our cultural values.* WWF-UK.
Dewey, J. (1963). *Experience and Education.* London: Collier Books.
Fien, J. (Ed.). (1993). *Environmental education: A pathway to sustainability.* Victoria: Deakin University.
Freire, P. (1996). *Pedagogy of the oppressed.* Harmondsworth: Penguin.
Gray, D., Coucci-Gray, L. & Camino, E. (2009). *Science, society and sustainability: Education and empowerment for an uncertain world.* Abingdon, UK: Routledge.
Horwood, B. (1991). Tasting the berries: Deep ecology and experiential education. *Journal of Experiential Education, 14(*3), 23-26.
Huckle, J. & Sterling, S. (Eds). (1996). *Education for sustainability*. London: Earthscan.
Intergovernmental Panel on Climate Change. (2007). *Fourth Assessment Report. Climate Change 2007: Synthesis Report.* Retrieved from http://www.ipcc.ch/publications_and_data/publications
Jackson, T. (2009). *Prosperity without growth: Economics for a finite planet*. London: Earthscan.
James, S. (2009). *The presence of nature: a study of phenomenology and environmental philosophy.* New York: Palgrave Macmillan.
Jickling, B. & Spork, H. (1998). Education for the environment: A critique. *Environmental Education Research, 4*(3), 309-327.
Jonas, M. E. (2011) Dewey's Conception of Interest and its Significance for Teacher Education. *Educational Philosophy and Theory, 43(*2), 112–129.
Kaplan, S. & Talbot, J. F. (1983). Psychological benefits of a wilderness experience. In I. Altman & J. F. Wohlwill (Eds), *Behaviour and the environment* (pp.163-203). New York: Plenum.
Leopold, A. (1968). *A Sand County almanac.* Oxford: Oxford University Press.
Louv, R. (2005). *Last Child in the Woods: Saving our children from nature-deficit disorder.* Chapel Hill, NC: Algonquin.
Marshall, P. (1995). *Nature's web: Rethinking our place on earth*. London: Cassell.
Merleau-Ponty, M. (2002). *Phenomenology of perception.* London: Routledge & Kegan Paul.
Naess, A. (1988). Self realization: An ecological approach to being in the world. In J. Seed, J. Macy, P. Fleming, & A. Naess, *Thinking like a mountain* (pp. 9-30). Philadelphia: New Society.
Naess, A. (1989). Ecology, community and lifestyle. Cambridge: Cambridge University Press.
Nicol, R. (2013). Entering the fray: The role of outdoor education in providing nature-based experiences that matter. *Educational Philosophy and Theory*.
O'Riordan, T. (1981). *Environmentalism.* London: Pion.
Orr, D. (1994). *Earth in mind.* Washington, DC: Island Press.
Palmer, J. (1998). *Environmental education in the 21st century: Theory, practice progress and promise.* London: Routledge.

Pepper, D. (1986). The roots of modern environmentalism. London: Routledge.
Peters, M. (2009). Editorial: Heidegger, phenomenology, education. *Educational Philosophy and Theory, 41*(1), 1–6.
Reason, P. (1998). *A participatory world.* Resurgence, 186, 42-44.
Reason, P. (2006). Choice and quality in action research practice. *Journal of Management Inquiry, 15(*2), 187-203.
Reid, D. (1995). *Sustainable development: An introductory guide*. London: Earthscan.
Sessions, G. (Ed). (1995). *Deep ecology for the 21st century*. London: Shambhala.
Smyth, J. (1995). Environment and education: a view of a changing scene. Environmental education research, 1(1), 3-19.
Stevenson, R. (2007). Schooling and environmental education: contradictions in purpose and practice. *Environmental education research, 13(*2), 139-153.
Tilbury, D. & Wortman, D. (2004*). Engaging people in sustainability*. Gland, Switzerland and Cambridge, UK: Commission on Education and Communication, IUCN.
United Nations Conference on Environment and Development. (1992). *Earth Summit '92.* London: The Regency Press.
van Manen, M. (1995). On the epistemology of reflective practice. *Teachers and teaching: Theory and practice, 1*(1), 33–50.
van Matre, S. (1990). *Earth education: A new beginning*. Greenville: Institute for Earth Education.
Wattchow, B. & Brown, M. (2011). *A pedagogy of place: Outdoor education for a changing world*. Victoria: Monash University.
WWF. (2012). *Living planet report 2012*. Gland, Switzerland: WWF International.

viii) Course Co-ordinator
Dr. Robbie Nicol

ix) Credit Rating
20 SCQF Level 11 credits

2.6 Experiential Education (EDUA11303)

i) Rationale

Experience-based methods of learning have real significance in outdoor learning and education, more generally. For example, amongst the many educational, social and health benefits, recent UK government reports have highlighted experiential outdoor learning as offering considerable potential to contextualise knowledge from other disciplines (LTS, 2010). However, before teachers and leaders can develop appropriate strategies to facilitate such learning through experience, it is useful for them to understand the philosophical origins and theoretical developments which have shaped the field. They must also be aware of how these ontological and epistemological assumptions underpin and influence their practice as teachers and leaders. Experiential Education is designed to introduce students to the growing body of experiential education literature, and give them the tools with which they can critically analyse their practice in relation to other pedagogical approaches.

ii) Prior Requirements/Place in sequence of study

No prior requirements.

iii) Learning Outcomes

Upon completion of the course, students should be able to:

- understand the philosophical origins and theoretical development of experiential education;
- demonstrate an awareness of the ontological and epistemological assumptions underlying experiential education practice;
- employ understandings of these underpinning assumptions in order to offer an analytical and formative view on theory, practice and research in the field;
- use concepts of experiential education to develop appropriate strategies for learning through experience;
- critically evaluate experiential education teaching and learning strategies;
- critically analyse current research materials (publications, case studies, etc) which investigate the impact of experiential learning processes on physical, emotional, aesthetic and personal and social development.

iv) Teaching, Learning & Assessment Strategies

A variety of teaching approaches will be used. Lectures introduce the main topics which are expanded upon in structured discussions, seminars, and, where possible, student-led tasks. Although the content will be taught primarily by the course organiser, other specialist staff may provide additional input.

- Teaching contact time: 13.5 hours over two days
- Students will be expected to complete background reading and independent study in order to meet the level required to complete the course successfully.

- Formative feed-forward will be offered during the end of course review, when each student will outline their initial idea for their assignment. Comments to students will be provided by the course tutor and, if offered, by fellow classmates.

v) Indicative Content

- Philosophical origins of experiential education
- Theoretical development of experiential education
- Current experiential learning theories and models
- Developing critical awareness
- The role of theory in informing and developing practice

vi) Assessment

In order to pass this course students will be expected to:

Satisfactorily complete a written assignment (2000 words) that considers the degree to which an experiential education course / lesson that you have experienced as a participant or staff member, has actually been 'experiential'. The paper should draws on aspects of the theories and issues covered in the taught component of the course and contextualise them within your own personal (teaching or student) experience. Your work should demonstrate a balanced understanding of the debates and discourses within experiential education literature. This assignment is worth 100% of the final mark.

Assessment Criteria

Students should demonstrate:

- an understanding of the origins, development and processes of experiential learning and its application to the outdoor education and education for sustainability sectors;
- the ability to adopt an informed stance on the assumptions made in experiential education literature, and apply this to analysis of their academic and professional context;
- a critical awareness of the potential of and the wide range of developments in experiential learning.

vii) Indicative Reading

Allison, P. & Wurdinger, S. (2005). Understanding the power, promise and peril of the experiential learning process. *Teacher Education and Practice, 18*(4), 386-399.

Beard, C. & Wilson, J. (2002). *The power of experiential learning.* London: Kogan Page.

Boud, D., Cohen, R. & Walker, D. (Eds.) (2002). *Using experience for learning*. Buckingham: SRHE and Open University Press.

Dewey, J. (1938). *Experience and education.* New York: Macmillan.

Ord, J. (2009). Experiential learning in youth work in the UK: A return to Dewey. *International Journal of Lifelong Education, 28*(4), 493-511.

Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development.* Englewood Cliffs, NJ: Prentice-Hall.

Roberts, J. (2008). From experience to neo-experiential education: Variations on a theme. *Journal of Experiential Education, 31*(1), 19-35.

Roberts, J. (2012). *Beyond learning by doing: Theoretical currents in experiential education.* New York: Routledge.
Smith, T. & Knapp, C. (2011). *Sourcebook of experiential education. Key thinkers and their contributions.* New York: Routledge.
Seaman, J. (2008). Experience, reflect, critique: The end of the 'learning cycles' era. *Journal of Experiential Education, 31*(1), 3-18.
Simpson, S. (2011). *Rediscovering Dewey: A reflection on independent thinking*. Bethany, OK: Wood N' Barnes.
Warren, K., Sakofs, M. & Hunt, J. (Eds). (1995). *The theory of experiential learning: A collection of articles addressing the historical, philosophical, social, and psychological foundations of experiential education.* Dubuque, IA: Kendall/Hunt.
Wurdinger, S. (1997). *Philosophical issues in adventure education*. Dubuque, IA: Kendall Hunt.

viii) Course Co-ordinator
Dr. Simon Beames

ix) Credit Rating
10 SCQF Level 11 credits

2.7 The Sources of Knowledge - Understanding and Analysing Research Literature (REDU11046 SV1)

i) Rationale

This course reflects the need for students to understand fundamental concepts that underpin research in order to be able to critically evaluate the quality and value of the research discussed throughout their programme of study. This course will explore how differing paradigms of research are reflected in research articles and publications. This will involve introducing students to contrasting genres of scholarly writing and to the research paradigms, which underlie and inform the approaches taken in specific studies. Students will gain experience of undertaking some small scale data collection and preliminary analysis in order to understand, through primary experience, the practical challenges of undertaking rigorous research.

Throughout the course the need to develop well-principled grounds for, and practices in, the interpretation of research articles and publications will be fore-grounded. Students will be made aware of the diversity of approaches taken and purposes pursued within the educational literature and the need therefore to remain alert to the fact that a 'one-size' approach might not be appropriate as they read and engage critically with different genres of writing.

The course will also highlight the importance of judging an article both in its own terms and within the wider context of scholarly debate and practice. In addition, the course sets out to frame students' engagement with different types of texts encountered in research on policy and practice within current debates concerning how research ought to be judged. The course will also require students to reflect on how the understandings and skills they are gaining can be deployed in their own studies.

ii) Prior Requirements/Place in sequence of study

No prior requirements. Semester 1.

iii) Learning Outcomes

Upon completion of the course, students should be able to:

- demonstrate critical awareness of current debates concerning the purposes and interpretation of educational research;
- evaluate strengths and weaknesses of different research paradigms and philosophies with reference to their own professional setting;
- demonstrate understanding and skills in the analysis, evaluation and interpretation of specific forms of educational writing;
- collect data with consideration for issues of data management, generalisability and trustworthiness.

iv) Teaching, Learning & Assessment Strategies

The course will involve lectures, small group and whole-group discussions [20 hours]. Much of this will be based on prescribed reading that must be completed in advance. There will be one outdoor visit. Course members will

be expected to contribute actively and to apply their professional experience to the issues under consideration. Students will also be expected to complete additional background reading and independent study in order to meet the level required to complete the course successfully.

v) Indicative Content

- The purposes of educational research and the criteria for judging it.
- Purposes and genres of educational texts, paradigms and methods of research.
- Taxonomy of social research.
- Observation, interviews, ethnography, action research and case studies.
- Data collection, management.
- Sampling, representativeness, and generalisability and trustworthiness as they apply to qualitative research.

vi) Assessment

In order to pass this course students will be expected to complete a 2000 word analytical review of either two or three journal papers evaluating the methodology used and the arguments that the authors are making. Be analytical in your writing: i.e. highlight positive aspects of the work and problematic areas. The task is to analyse differences and similarities of approach taken by the authors. It is not necessarily to find two articles which present opposing points of view and compare them. Support your statements with references, examples and clear logical thought.

vii) Indicative Reading

Allison, P. & Pomeroy, E. (2000). How shall we 'know?' Epistemological concerns in research in experiential education. *Journal of Experiential Education, 23(*2), 91-97.

Boyatzis, R.E. (1998). *Transforming qualitative information*. London: Sage.

Bryman, A. (2001). *Social research methods.* Oxford: University Press.

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* London: Sage.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches.* London: Sage.

Guba, E.G. & Lincoln, Y.S. (2008). Paradigmatic controversies, contradictions and emerging confluences. In Denzin, N.K. & Lincoln, Y.S. (Eds.), *The landscape of qualitative research* (pp. 255-286). London: Sage.

Donaldson, S.I., Christie, C.A. & Mark, M.M. (2009). *What counts as credible evidence in applied research and evaluation practice?* London: SAGE.

Flick, U. (2002). *An introduction to qualitative research* (2nd ed). London: Sage.

Golden-Biddle, K. & Locke, K. D. (1997). *Composing qualitative research*. London: Sage.

Hammersley, M. (Ed). (1998). *Reading ethnographic research* (2nd ed0). London: Longman.

Hammersley, M. (Ed.) (2007). *Educational research and evidence-based practice*. London: Open University / SAGE.

Hughes, J. (1990). *The philosophy of social research*. Harlow: Longman.

Midgley, M. (1978/1996). *Beast and man*. London: Routledge.

Phillips, D. C. (1993). Subjectivity and objectivity: An objective inquiry. In M. Hammersley (Ed.), *Educational research: Current issues.* London: Open University.

Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers* (2nd ed). Oxford: Blackwell.

Yates, L. (2004). *What does good education research look like?: Situating a field and its practices.* Maidenhead: Open University Press / McGraw-Hill.

viii) Course Co-ordinator
Dr. Pete Allison

ix) Credit Rating
10 SCQF Level 11 credits

2.8 Research Methods: Planning Research (REDU11044)

i) Rationale

Students preparing to embark on undertaking their masters dissertation need to be prepared in both theoretical and practical aspects of research methodology and methods. Through this process they also gain a greater understanding of the substantive literature in their specific area of study. However, when it comes to conceptualising, planning, implementing and locating their own research within the relevant literature students require specific skills and advice.

ii) Prior Requirements/Place in sequence of study

Sources of Knowledge. Semester 2.

iii) Learning Outcomes

Upon completion of the course, students should have:

- identified appropriate research questions and how they might be addressed by particular methodological approaches and data collection methods;
- planned a programme of research, showing an appropriate level of critical awareness of issues relating to research reliability and validity, and ethical considerations;
- articulated clearly the kinds of conclusions and recommendations they will be able to make given the research design choices they have made;
- presented a proposal for a research project in accord with the relevant academic conventions.

iv) Teaching, Learning & Assessment Strategies

The course will involve lectures, small group and whole-group discussions [20 hours]. Much of this will be based on prescribed reading that must be completed in advance. There will be one outdoor visit. Course members will be expected to contribute actively and to apply their professional experience to the issues under consideration. Students will also be expected to complete additional background reading and independent study in order to meet the level required to complete the course successfully.

Total Hours: 100

Lecture Hours 5, Supervised Practical/Workshop/Studio Hours 8, Formative Assessment Hours 25, Summative Assessment Hours 25, Revision Session Hours 35, Programme Level Learning and Teaching Hours 2

v) Indicative Content

- Stages in planning research and issues in research design, key terms and texts;
- Approaches to the identification of appropriate research questions;
- Research design - the spectrum to consider, sampling;

- Strategies and instruments for data collection - interviews, questionnaires, documentation, focus groups;
- Issues of validity and reliability and the evaluation of evidence.

vi) Assessment

Each participant will produce a proposal that should specify his/her research question, or a set of related research questions, and justify its/their practical, professional and theoretical significance. It will include a strategy and design for collecting and analysing evidence that is suitable for the research question. Provision for philosophical studies and empirical research will be made.

vii) Indicative Reading

Alvesson, M. & Skoldberg, K. (2009). *Reflexive methodology: New vistas in qualitative research* (2nd ed.). London: Sage.

Bechhofer, F. & Paterson, L. (2000). *Principles of research design in the social sciences.* London: Routledge.

Bell, J. (2005). *Doing your research project: A guide for first-time researchers in education and social science* (4th ed.). London: Open University Press.

Bernard, H. R. (2008). *Social research methods* (3rd ed.). Oxford: Oxford University Press.

Berry, R. (2004). *The research project: How to write it* (5th ed.). London: Routledge Falmer.

Blaxter, L., Hughes, C. & Tight, M. (2006). *How to research* (3rd ed.). London: Open University Press.

Burns, R. B. (2000). *Introduction to research methods* (4th ed.). London: Sage.

Cohen, L., Manion, L. & Morrison, K. (2007). *Research methods in education* (6th ed.). London: Routledge.

Cottrell, S. (2005). *Critical thinking skills.* Hampshire: Palgrave Macmillan.

Crotty, M. (1998). The foundations of social research. London: Sage.

Denscombe, M. (2003). *The good research guide: For small-scale social research projects (*2nd ed.). London: Open University Press.

Denzin, N., & Lincoln, Y. (2008). *Collecting and interpreting qualitative materials* (3rd ed.). London: Sage.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage.

Fielding, J. & Gilbert, N. (2006). *Understanding social statistics* (2nd ed.). London: Sage.

Girden, E.R. (2001). *Evaluating research articles from start to finish* (2nd ed.). London: Sage.

Hammersley, M. (1992*). Social research: Philosophy, politics & practice*. London: Sage.

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

Kumar, R. (2005). *Research methodology: A step-by-step guide for beginners* (2nd ed.). London: Sage.

May, T. (2003). *Social research: Issues, methods and process* (3rd ed.). London: Open University Press.

Neville, C. (2007). The complete guide to referencing and avoiding plagiarism. Berkshire: Open University Press/McGraw-Hill.

Oliver, P.S. (2003). *The student's guide to research ethics*. London: Open University Press.
Potter, S. (2006). *Doing post-graduate research* (2nd ed.). London: Open University/Sage.
Punch, K. (2005). *Introduction to social research: Quantitative and qualitative approaches* (2nd ed.). London: Sage.
Reason, P. & Bradbury, H. (Eds.) (2007). *The SAGE handbook of action research: Participative inquiry and practice* (2nd ed.). London: Sage.
Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers* (2nd ed.). Oxford: Blackwell.
Sim, S. & Van Loon, B. (2004). *Introducing critical theory*. Royston: Icon Books.
Silverman, D. (2006). *Interpreting qualitative data* (3rd ed.). London: Sage.
Silverman, D. (2007). *A very short, fairly interesting and reasonably cheap book about qualitative research.* London: Sage.
Thomas, G. (2009). *How to do your research project: A guide for students in education and applied social sciences.* London: Sage.
Walliman, S. R. (2005). *Your research project: A step-by-step guide for the first-time researcher* (2nd ed.). London: Sage.

viii) Course Co-ordinator
Dr. Rory Ewins

ix) Credit Rating
10 SCQF Level 11 credits

3 Resources

3.1 Competing programmes

The proposed programme has two principal competitors in the UK – both of which are located in the south of England.

London South Bank University – MSc Education for Sustainability

- Fees are the same for Home / EU / Overseas: £5870
- Other qualifications: Certificate, PG Certificate, PG Diploma
- Modes of delivery:
    - Full-time (16 months) and part-time (up to 5 years)
    - On campus or distance / flexible learning from home country

Plymouth University – MSc Learning for Sustainability

- Fees are Home / EU: £4650 and Overseas: £11500
- No other qualifications offered (MSc only)
- Modes of delivery:
    - Full-time (12 months) or part-time (24 months)
    - Residential periods, on-campus evenings, and supported online work

As yet, there is no such MSc programme in Scotland. These two English programmes do not adequately cater for Scottish school teachers and outdoor educators, in terms of modes of location (closer to where they live and work), modes of delivery (out of block and online), and content (Curriculum for Excellence, GTCS Professional Standards). Further, the established and growing international reputation for Scotland's approach to 'learning for sustainability' (as evidenced above, and in a recent UK Commission for UNESCO report[4]), and programme staff involvement in the UNESCO work-stream on 'Re-orienting teacher education to address sustainable development' (also noted above), will ensure international interest.

Our discussions with the GTCS and Education Scotland indicate that the policy-supporting and credit-bearing CPD opportunities within the proposed MSc Learning for Sustainability will be most welcome.

[4] See the report by Martin, S., Dillon, J., Higgins, Peters C. & Scott, W. at:
http://www.unesco.org.uk/uploads/Brief%209%20ESD%20March%202013.pdf
or the published article at:
http://www.mdpi.com/2071-1050/5/4/1522

3.2 The Market

Results from the LfS Demand Survey on our website are drawn from 35 respondents. The following summary offers some indications of the kind of student this degree will attract and the ways in which they would like to study.

What qualification is sought?

- 15 are very interested in the MSc
- 14 are very interested in PG Cert or Dip
- 9 are interested in individual courses for credit
- 15 are in interested in individual CPD courses

Who are the respondents?

- 66.7% are female
- 50% are between 25-34 years old
- 48% are working full-time
- 24% are working part-time
- 24% are studying
- 47% are primary school teachers
- Others dominant groups of respondents are field studies/residential centre workers, community/youth workers, and secondary school teachers
- 66.7% live in Scotland

What kind of study is wanted?

- 75% would study while working
- 62.5% would like a mixture of part-time, online, and on-campus learning
- School holidays and weekends are desirable, and twilight and evening session are not
- 48% would spread their studies over two years

3.3 Financial Income

	Category	Fees	Student number	Total fees	Total fees minus Uni and School top slice
Year 1	Overseas FT	15850	2	31700	
2014-15	EU FT	7800	3	23400	
	UK PT	1950	7	13650	
			Year 1 income	**68750**	**£ 29150**
Year 2	Overseas FT	15850	4	63400	
2015-16	EU FT	7800	4	31200	
	UK PT	1950	8	15600	
	Continuing UK PT	1950	7	13550	
			Year 2 income	**123850**	**£ 52513**
Year 3	Overseas FT	15850	5	79250	
2016-17	EU FT	7800	5	39000	
	UK PT	1950	10	19500	
	Continuing UK PT	1950	15	29250	
			Year 3 income	**167000**	**£ 70809**
Year 4	Overseas FT	15850	5	79250	
2017-18	EU FT	7800	5	39000	
	UK PT	1950	10	19500	
	Continuing UK PT	1950	25	48750	
			Year 4 income	**186500**	**£ 79077**
Year 5	Overseas FT	15850	5	79250	
2018-19	EU FT	7800	5	39000	
	UK PT	1950	10	19500	
	Continuing UK PT	1950	28	54600	
			Year 5 income	**192350**	**£ 81557**

Table 4: Income projection

* Income based on FT home / UE students paying £7,800 per year, FT overseas students paying £15,850, and PT students paying .25 total fees per year over four years.

** "On the basis of a 20% top-slice, the proportion of the overall tuition fee paid by a student which is available to the School to pay for their teaching and assessment is 42.4%.... Put differently, the School receives 53% of the tuition fee, whereupon 80% of monies received are available to pay for teaching and assessment. 100*0.53*0.80=42.4."

(taken from p. 3 of the CPGSC Sustainability Report, Oct. 2011)

3.4 Staffing

The dominant demand on resources will be teaching, assessment, and administration. As indicated above, apart from the 47% taken for the University's central budget, our costing has also factored in the advised 20% top slice of the remaining 53% for administration. It will be possible for the soon-to-be-appointed full-time 'Outdoor Learning' lecturer to absorb some of the planning and preparation for the MSc programme for delivery from September 2014, and some of the teaching and administrative load.

The staff members who will teach on the programme include Simon Beames, Pete Higgins, Robbie Nicol, Hamish Ross, and the incoming lecturer.

Assuming that programme recruitment is strong, we intend to make a case to hire a more permanent staff member to be the programme director and principal tutor in the long term, and this should also be justified on basis of the 20 MSc places awarded to us under the Scottish Funding Council's 'Highly Skilled Workforce' scheme. These are recurrent from 2013 and represent an annual income to the University of £150k. Vice-Principal Sue Rigby has made arrangements to limit top-slicing of this income for the first year.

Apart from basic marketing costs (approx. £2000), some start-up equipment and material will be needed, but this should not exceed £1000.

3.5 Risks

Hazard	Likelihood & Severity	Mitigation Actions
Low recruitment	Low recruitment is possible, but would not be a significant financial risk, as long as student numbers grow over the coming years	Focused marketing and networking
Under resourced teaching staff team	Quite likely, but not severe consequences initially	It may be possible to launch the new MSc with the current staff FTE, but if the initial recruitment was strong and promised to grow, an additional staff member would be needed

Table 5: Risk matrix