

Schumacher College

2016 - 2017

Programme Quality Handbook

HOLISTIC SCIENCE

If you require any part of this Student Handbook in larger print, or an alternative format, please contact:

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WITH
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A. Welcome

Welcome and Introduction to Holistic Science

Dear MSc/PG Cert student,

We are delighted to welcome you to the 19th year of the MSc Holistic Science here at Schumacher College. You are now part of an extensive network of over 180 MSc graduates all over the world who would love to hear from you should you ever need their support or assistance with your own journey into the new frontiers you are about to explore.

The roots of the MSc go back to the early days of the college when many participants asked whether their learning here could receive academic accreditation. The nearby Plymouth University knew about us and were very excited to embark on this collaboration, which worked extremely well with many very good Masters level projects completed. After a few years we were ready to expand this collaboration into a fully blown MSc when the renowned biologist, Professor Brian Goodwin, came to work at the college after his retirement from the Open University.

Brian's vision had for some time been to create an MSc that integrated intuitive and rational ways of knowing in exploring a science of qualities rather than just quantities, and Schumacher College provided fertile ground for the realisation of his dream. After a year of preparation, Brian and Stephan (a co-founder of the College who was the tutor for the short course credits), along with a distinguished cast of visiting teachers, launched the course in 1998 with only two students. Philip Franses has taken this lineage on, first as student and now teaching the transformative potential of holistic science with Stephan. The course has gone from strength to strength since those early days, with 16 students in last year's cohort.

Just like a living organism, the MSc develops and evolves. This year we will once again explore new modes of participatory learning, with a carefully selected cast of visiting teachers. This year also sees the sixth year of a part-time route for the MSc, and also of the Postgraduate Certificate (PG Cert) in Holistic Science, which covers the core modules in the first term.

The MSc and the PG Cert in Holistic Science are all about exploring the meaning of wholeness together as a community of learners and as fellow travellers within this mystery-filled universe. May your journey be rich and fulfilling. We look forwards to our time together, and warmly welcome you into the college community.

Stephan Harding and Philip Franses

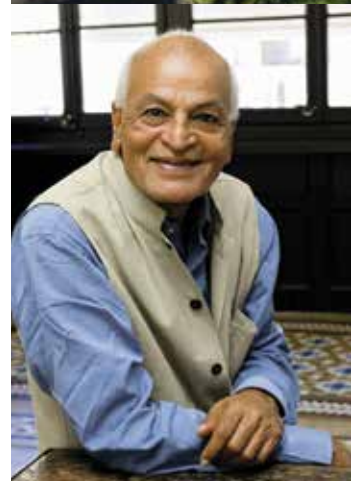
This programme has been designed to equip you with the skills and knowledge base required to work in your chosen specialism or other graduate opportunities. It is also a platform from which you can undertake additional vocational and academic qualifications.

This Programme Quality handbook contains important information including:

- The approved programme specification
- Module records

Note: the information in this handbook should be read in conjunction with the current edition of the College / University Student handbook available at: <https://www.schumachercollege.org.uk/courses/postgraduate-courses/holistic-science> which contains student support based information on issues such as finance and studying at HE along with the University's Student Handbook <https://www.plymouth.ac.uk/your-university/governance/student-handbook> and your Teaching, Learning and Assessment Handbook available on your programme virtual learning environment.

PLEASE NOTE: The Programme Specification contained within this handbook is a definitive document which is created when a programme is approved and, therefore, does not require updating each year, only when approved changes to the programme are made. The Programme Specification will therefore contain dates that are historic. If you have any queries about this document please speak to the Programme Leader for your course.



B. Programme Specification

**Faculty of Science and Technology
School of Geography,
Earth and Environmental Science**

**PG Certificate in Holistic Science
MSc in Holistic Science**

Programme Specification

Approval:

Implementation: September 2012

First Award: December 2013

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1.0 Brief description of the Programmes

1.1 Postgraduate Certificate in Holistic Science

The structure diagram for the Postgraduate Certificate is as follows

Term 1: Core Modules

September- December

SCH5401 (20 credits)
Science of Qualities

SCH5402 (20 credits)
Chaos & Complexity

SCH503 (20 credits)
The Living Earth

HOLISTIC
SCIENCE

1.2 MSc Holistic Science

The structure diagram for the MSc is as follows:

Term 1: Core Modules

September- December

SCH5401 (20 credits)
Science of Qualities

Term 2: Electives

January – March

Students select 2 from
3-4 electives

Elective 1
Optional module
SCH5405 (20 credits)
Contemporary Issues in
Holistic Science

SCH5402 (20 credits)
Chaos & Complexity

Elective 2
Optional module
SCH5406 (20 credits)
Leading in the Midst of
Complexity

SCH5403 (20 credits)
The Living Earth

Term 3:

April- August

**Completion of
Dissertation**

SCH5404 (80 credits)
Holistic Science Dissertation



The Postgraduate Programmes in Holistic Science explore new transdisciplinary methodologies that are increasingly recognised and utilised as valid ways of pursuing scientific enquiry into the dynamics of natural systems. These methodologies recognise that complex systems have “emergent properties” that describe their characteristics as wholes, and that these properties are conditioned, but not determined, by the system’s constituent parts.

The philosophy and ethos of the Programmes are rooted in an ecological and systemic approach within the distinctive holistic, community learning model of Schumacher College that attracts students and visiting teachers from all over the world. It provides a rigorous critique of the current scientific model and demonstrates practical, solutions-orientated pathways for creating an expanded science that can help society to develop low carbon, high well-being and resilient ways of living.

Schumacher College attracts people from all walks of life from across the globe – from business leaders and entrepreneurs to policy makers and social and environmental activists. The Programmes are designed to support a new generation of leaders and activists to co-create a society that lives within planetary boundaries. The MSc Programme, now in its nineteenth year, has a proven track record of attracting people at different stages in their life who want to make a positive contribution to an ecological society through enhancing their knowledge, acquiring practical skills for sustainable living and ecological citizenship whilst sharing experiences with people from North and South. Over the nineteen-year life span of the MSc we have found that deep transformational learning takes place when our students live and learn together in a small communal setting in which everyone contributes to the daily life-affirming tasks of cooking, cleaning and growing food. We have found that the college’s community setting encourages the development of close academic bonds between students and teachers which allows teachers to nurture and closely monitor each student’s particular learning journey as they explore the intellectual and experiential dimensions of wholeness.

2.0 Distinctive Features

- introduces new trans-disciplinary methodologies for exploring natural systems;
- students take a questioning attitude to the way they approach the world as scientists and work as reflective practitioners in all they do;
- students continuously connect their scientific exploration to their own lives and learning journeys;
- students are encouraged to spend a great deal of time outdoors cultivating their capacities to notice and experience the workings of the natural world;
- students cook, clean, and garden together sustaining the environment in which they learn as a community so that learning and living are not separated;
- students have access to individual and small group tutorials with core faculty and visiting teachers as the need arises so that an unusually high level of personal attention to each student is achieved;
- Schumacher College attracts people from all over the globe and provides opportunities to create lasting networks beyond the Programmes;
- students have the opportunity to become involved with many local initiatives and projects tackling issues of sustainability

2.1 New paradigm thinking and practice

The MSc is the first Programme worldwide to offer an academic qualification in Holistic Science. It has been running successfully in partnership with Plymouth University since 1998. The aim of the MSc Programme is to produce postgraduates with the ability to apply holistic research methodologies to a wide range of scientific, technical, and social problems. The skills acquired by students are generic and transferable, since they arise out of acquaintance with the procedures of different disciplines, and provide flexibility of approach to practical issues. The PG Certificate will give students access to the foundational aspects of holistic science without progression to the elective modules and to the dissertation module.

Synergies with the College's Postgraduate Programme in Economics for Transition (currently in its first year) and the Postgraduate Programme in Ecological Design Thinking (initiated in 2014) will be created where possible whilst ensuring each Programme remains distinctive with their own clear target audiences.

2.2 Unique holistic educational model

The Postgraduate Programmes in Holistic Science are community-based residential Programmes based at Schumacher College, a contextually appropriate place for the study of holistic science. The learning environment at the College has been designed to embody and nurture holistic and ecological values. As a practical expression that living and learning be part of one whole, staff and course participants are jointly responsible for daily tasks such as cooking, gardening and cleaning. All Postgraduate students engage in these tasks as full members of the learning community.

As well as having access to first-rate educational resources, students benefit from interaction with internationally renowned visiting teachers, and a diversity of short-course participants, who bring with them a wealth of professional and personal experiences.

Schumacher College is located on the 500 hectare Dartington Hall Estate, which consists of a farm, woodlands, hedgerows and a frontage on the river Dart. The Estate is an invaluable resource for MSc dissertation research.

Schumacher College has a proven track record and international reputation for offering a unique holistic educational approach based on experience of 25 years. The innovative approach to teaching and learning at Schumacher College is summarised below.

“The Gandhian philosophy of learning at different levels and the Tagorean principles of ‘practice research’ are powerful tools in the personal transformation of those who attend the College. Staff and participants – as a single community – interact and share in the gardening, cooking, cleaning and reflection that form the rhythms of the day. The power and gravitas of the model has attracted pioneering scholars and thinkers from around the world to teach and participate in the learning”.¹

Key elements of the approach include:

- community living and working within the residential setting of Schumacher College;
- acknowledging and developing the whole person – intellectual, emotional, ethical and practical;
- valuing transdisciplinary approaches and different ways of knowing (analytical, sensory perception, feelings and emotions, and intuition);
- emphasis on embodiment and practical action in participants' own lives;
- engaging with a range of teaching and learning methods from lectures and seminars to participatory, experiential learning methods and reflective inquiry;
- developing a technology enhanced learning approach, which complements the Schumacher College approach to transformational learning through living and working together, with online learning and networking;
- attracting participants, teachers and practitioners from all over the world.

¹ Phillips, A (2007) *Holistic Education: Learning from Schumacher College*, Green Books, p. 7.



'Schumacher College has created a unique learning environment where discussions take place in an atmosphere that is intellectually very intense and challenging, but is emotionally very safe. When I teach at the College, I feel almost like being among family, and this strong feeling of community emerges after being together for not more than a week or so. To most scholars such a situation is extremely attractive. For we who teach here this is a unique place to examine our work in depth and to try out new ideas in a safe environment'. Fritjof Capra (2007)² Author of *The Web of Life* (1997), Flamingo, London,.

2.3 Elective modules

Starting in 2013, masters students will have the opportunity to select two electives from a suite of generic elective modules that have been specifically tailored for the MSc and for the MA in Economics for Transition. The topics covered by the electives in 2017 are:

- Contemporary Issues in Holistic Science
- Leading in the Midst of Complexity
- Ecophilosophy
- Ecospsychology
- Economics and Development
- Ecological Design
- Food and Agriculture
- Sustainable Enterprise

These electives are three-week residential courses that attract teachers and practitioners of international repute from all over the world. In any one year, students choose two out of three or four of these electives. These courses, which are also open to the general public, attract students of all ages from all walks of life and provide a mutually stimulating environment for both Postgraduate students and short course participants.

2.4 Flexible learning

Based on the feedback from the on-line survey (see ADC documentation, submitted 30th January 2012), there is interest in building part-time options into the MSc Programme.

2 Phillips, A (2007), *op.cit.* pp. 9 – 10.

3.0 Entry Requirements

1. Normally a first degree in a social or natural science, or a background that is equivalent.
2. Good academic and personal references from people with extensive acquaintance with the applicant.
3. Evidence of intellectual clarity during interview.
4. Clearly formulated purpose for taking the course, focused interests and a clear idea of what the applicant wants from the MSc Programme and Schumacher College.
5. Clear understanding of the ethos and philosophy of the College.
6. Readiness and ability to live and work in a communal setting.
7. Where it is not the first language, competence in English is required to level B2 of the CEFR e.g. IELTS score 6.5 overall with minimum of 5.5 attained across all four competences of reading, writing, listening and speaking)

In addition to considering individual candidates according to these criteria, the prospective postgraduate group is considered as a whole, for which Schumacher College strives to create a balance of interest, gender and background. It is expected that each student group will be internationally diverse, comprising students who are potential leaders and catalysts for change in their own fields.



3.1 Admissions Procedure

The responsibility for selecting participants lies with Schumacher College, although all candidates need to conform to Plymouth University's minimum entry requirements for Masters level students. The Head of Holistic Science is now able to exert his/her own discretion when minimum academic entry requirements are not met, given that several students without degrees have graduated from the MSc Programme, some with Distinction.

To decide if a candidate without a first degree is eligible for a given Programme, the core faculty consider whether the candidate has previously taken the opportunity to articulate, publish, teach or disseminate their ideas and experience in some way as a measure of their confidence and capacity to reflect on, organise and communicate their learning. In certain cases, an essay question or similar requirement may be set to test the candidate's suitability for the Programmes.

Since much of the course is taught in a residential context, it is particularly important that candidates receive a personal interview to assess their suitability, both academic and social. This means that personal interviews are carried out at the College, or, as appropriate, by telephone or on Skype. At this stage, prospective students will be introduced to the philosophy and ethos of their intended Programme.

Applicants complete an application form, and, as part of this procedure, write a supporting statement giving the reasons for applying to their intended Programme, sometimes giving examples of relevant previous work. In addition to this, applicants submit two references from suitable professionals or academics, and one personal reference. Applications should reach Schumacher College by the specified application deadline preceding entry. To sum up, students applying to Schumacher College need to:

1. Complete the application form and write a personal statement
2. Supply three references, two academic or professional and one personal
3. Be interviewed at Schumacher College or by telephone or Skype
4. Satisfy the prior qualification requirements
5. Satisfy Schumacher College that their full course fees can be paid
6. Complete student registration forms

Places are offered on condition that the students can pay the full course fees and, where applicable, can meet all UK immigration conditions of entry.

4.0 The Aims of the Programmes

4.1 PG Certificate in Holistic Science

- 4.1.1 To cultivate an approach to the natural world that deals rigorously with the understanding of complex wholes and their emergent properties while including qualities and values as essential components of an extended science.
- 4.1.2 To acknowledge and develop the whole person as a participant in the process of gaining reliable and scientifically rigorous knowledge of the world.
- 4.1.3 In addition to cultivating cognitive and intuitive skills, to cultivate transferable employment skills and personal skills.
- 4.1.4 To produce postgraduates who can make a contribution to current efforts to develop ecologically and socially sustainable ways of living.

4.2 MSc in Holistic Science

- 4.2.1 To cultivate an approach to the natural world that deals rigorously with the understanding of complex wholes and their emergent properties while including qualities and values as essential components of an extended science.
- 4.2.2 To acknowledge and develop the whole person as a participant in the process of gaining reliable and scientifically rigorous knowledge of the world in ways that enable and demonstrate a capacity for practical action in the world.
- 4.2.3 In addition to cultivating cognitive and intuitive skills, to cultivate transferable employment skills, personal skills.
- 4.2.4 To produce postgraduates who can make a significant contribution to current efforts to develop ecologically and socially sustainable ways of living by the application of rigorous holistic thinking and action.
- 4.2.5 To enable students to apply holistic science principles to a wide variety of disciplines and to use holistic science research methodologies within a dissertation project.



5.0 Intended Learning Outcomes

5.1 Intended Learning Outcomes, PG Certificate:

A. Setting

(A1) Operate in complex, unpredictable environments where exact knowledge is unobtainable – for instance in the evaluation of the health of ecosystems and other open living systems that are highly sensitive to context by applying the participatory relational approach of holistic science.

B. Knowledge and Understanding

(B1) Demonstrate detailed theoretical and experiential understanding of the holistic science approach (part/whole relationships, phenomenology, Goethian science, Free Choice Profiling, resilience thinking, complexity theory and Gaia theory) and contextualise it within the world view of mainstream science.

(B2) Articulate coherent arguments for expanding the dominant reductionist/mechanistic paradigm in mainstream science based on concepts and approaches from holistic science.

(B3) Demonstrate knowledge of theoretical frameworks, main debates, tools, methods, and case studies in holistic science.

C. Cognitive Skills

(C1) Demonstrate an ability to use key concepts from holistic science to critically evaluate and propose alternative approaches to existing theoretical discourses in mainstream science, including genomics, developmental biology, community ecology, Earth System science and the realm of human organizations as complex systems.

(C2) Able to create transformative learning experiences for others in unfamiliar contexts by synthesizing key ideas, concepts and experiential learning methodologies from holistic science.

(C3) Assimilate and critically assess current research, techniques and practices in holistic science and know when they are effective to use alongside traditional reductive scientific techniques

(C4) Enquire into and apply appropriate advanced methodological approaches in holistic science and critically evaluate their effectiveness

D. Performance and Practice

(D1) The ability to manage own learning, and to make use of scholarly reviews and primary resources (e.g. refereed research articles and/or original materials appropriate to the discipline of holistic science)

(D2) Reinforce ethics and values in practice, identify and articulate dilemmas and work proactively with others to formulate solutions

(D3) Co-create, within a team setting, different approaches to the application of insights from holistic science that enable the transition to a low carbon and resilient future

E. Personal and Enabling Skills

(E1) Self-evaluate own values and behaviours through personal and reflective inquiry to improve personal and/or professional practice and team work

(E2) Communicate information, ideas, problems and solutions to both specialist and non-specialist audiences

(E3) Combine intuition with reason to connect known and unknown areas within holistic science to enable adaptation and change

(E4) Apply learning to improve personal and professional practice and team work

<p>Teaching and Learning Methods Interactive workshops/group work Tutorials and feedback Independent study and reading Student presentations and peer-to-peer learning Coursework, research and dissertation feedback</p>	<p>Assessment SCH5401: Portfolio SCH5402: Portfolio SCH5403: Portfolio</p>
<p>Teaching and Learning Methods Presentations – course teachers and visiting teachers Interactive workshops/group work Seminars Online discussion forum Tutorials and feedback Case studies and field trips Independent study and reading Student presentations and peer-to-peer learning Coursework, research and dissertation feedback</p>	<p>Assessment SCH5401: Portfolio SCH5402: Portfolio SCH5403: Portfolio</p>
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<p>Teaching and Learning Methods Experiential practice (such as deep ecology exercises) Reflective inquiry and action reflection cycles Participatory methodologies (such as open space) Interactive workshops Small group learning sets</p>	<p>Assessment SCH5401: Portfolio SCH5402: Portfolio SCH5403: Portfolio</p>



5.2 Intended Learning Outcomes, MSc

A. Setting

(A1) Operate in complex, unpredictable environments where exact knowledge is unobtainable – for instance in the evaluation of the health of ecosystems and other open living systems that are highly sensitive to context by applying the participatory relational approach of holistic science.

(A2) Use techniques and information sources from the holistic science core modules to explore complex, specialized contexts arising in the elective modules.

(A3) Act with initiative in decision making whilst keeping in view the living context of the particular research question with which the student is engaged.

B. Knowledge and Understanding

(B1) Demonstrate detailed theoretical and experiential understanding of the holistic science approach (part/whole relationships, phenomenology, Goethian science, Free Choice Profiling, resilience thinking, complexity theory and Gaia theory) and contextualise it within the world view of mainstream science.

(B2) Articulate coherent arguments for expanding the dominant reductionist/mechanistic paradigm in mainstream science based on concepts and approaches from holistic science.

(B3) Demonstrate knowledge of theoretical frameworks, main debates, tools, methods, and case studies in holistic science.

(B4) Demonstrate understanding of the interrelationships between the discipline of holistic science as presented in the core modules and the disciplines studied in the electives modules.

(B5) Assimilate current research, techniques and practices from the holistic science core modules and apply this knowledge effectively in a specific research context.

C. Cognitive Skills

(C1) Demonstrate an ability to use key concepts from holistic science to critically evaluate and propose alternative approaches to existing theoretical discourses in mainstream science, including genomics, developmental biology, community ecology, Earth System science and the realm of human organizations as complex systems.

(C2) Able to create transformative learning experiences for others in unfamiliar contexts by synthesizing key ideas, concepts and experiential learning methodologies from holistic science.

(C3) Assimilate and critically assess current research, techniques and practices in holistic science and know when they are effective to use alongside traditional reductive scientific techniques

(C4) Enquire into and apply appropriate advanced methodological approaches in holistic science and critically evaluate their effectiveness

(C5) Flexibly and creatively apply knowledge from the holistic science core modules to unfamiliar contexts presented in the elective modules in order to generate transformative solutions.

(C6) Identify a suitable research topic, plan and develop portfolio design, explore the ethical dimensions, analyse the issue using an appropriate methodology and synthesise findings.

D. Performance and Practice

(D1) The ability to manage own learning, and to make use of scholarly reviews and primary resources (e.g. refereed research articles and/or original materials appropriate to the discipline of holistic science)

(D2) Reinforce ethics and values in practice, identify and articulate dilemmas and work proactively with others to formulate solutions

(D3) Co-create, within a team setting, different approaches to the application of insights from holistic science that enable the transition to a low carbon and resilient future

(D4) Demonstrate the ability to adapt performance to the multiple and varied contexts encountered in the elective modules.

(D5) Draws on innovative practice and adapts this skilfully to the research topic

E. Personal and Enabling Skills

(E1) Self-evaluate own values and behaviours through personal and reflective inquiry to improve personal and/or professional practice and team work

(E2) Communicate information, ideas, problems and solutions to both specialist and non-specialist audiences

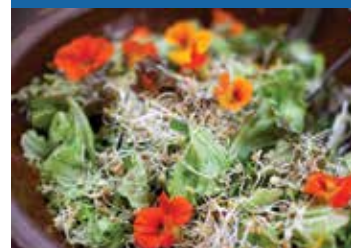
(E3) Combine intuition with reason to connect known and unknown areas within holistic science to enable adaptation and change

(E4) Apply learning to improve personal and professional practice and team work

(E5) Identify capabilities that support effective communication of new material encountered in the complex and specialised contexts of the elective modules.

(E5) Develop and demonstrate the ability to bring both intuition and reason to bear in the research portfolio, particularly with a view to developing innovative methodologies for holistic science practice

<p>Teaching and Learning Methods Interactive workshops/group work Tutorials and feedback Independent study and reading Student presentations and peer-to-peer learning Coursework, research and dissertation feedback</p>	<p>Assessment SCH5401: Portfolio SCH5402: Portfolio SCH5403: Portfolio Two of the following electives: SCH5405: Portfolio - SCH5406: Portfolio SCH5407: Portfolio SCH5408: Portfolio SCH5409: Portfolio - SCH5410: Portfolio SCH5411: Portfolio - SCH5412: Portfolio</p> <p>SCH5404: Dissertation</p>
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6.1 The Teaching and Learning Approach at Schumacher College

The essence of the teaching and learning approach for the Programmes is that these take place within a small, intimate and beautiful communal setting in which students and faculty work and learn together in a highly integrated way. The close academic contact between students and staff in all aspects of college life enables a depth of learning that is not normally available to modern Postgraduate students. Each student is constantly asked to reflect on their initial and evolving inquiry questions and to explore their process of inquiry with a focus on how their questions are related to and changed by the material they encounter on their Programme. This work takes place amongst the whole group, in small groups and during individual tutorials with faculty. Students are encouraged to use a range of assessment options, including writing, designing and delivering presentations and creating artistic projects, so that each student uses at least one non-written mode of assessment during their MSc experience. Students are encouraged to view, read and discuss each other's work and give feedback on standards amongst themselves and with faculty. Students are assessed continuously with formative feedback on proposals and drafts before final submission of portfolios, essays and dissertations, with summative feedback after final submission. The learning process emphasises the development of the whole person by means of transdisciplinary learning, in which analytical and intuitive approaches are equally valued. The emphasis is on the use of information for transformation and wholeness.

6.2 Relevance to Plymouth University's Teaching and Learning Strategy

The Postgraduate Programmes in Holistic Science are aligned with the University's Teaching and Learning Strategy 2009-2012 in a number of key areas including:

- Teaching and learning approaches that are holistic, inspirational and innovative
- Enabling students to develop knowledge and skills in the field of scientific, social and environmental enterprise
- Offering a learning environment that promotes active and reflective learning and personal development
- Offering flexible delivery of modules
- Encouraging students to develop skills and experience through learning outside the formal curriculum.
- For the MSc, working with the Plymouth University Faculty to create opportunities for students to learn about, acquire and practice research skills
- Including international issues in the core curriculum
- Attracting international students and promoting global ecological citizenship
- Embedding sustainability within the core curriculum as well as encouraging student practice of sustainability in all areas of their lives (as professionals, citizens, consumers, investors)
- Developing provision for technology enhanced learning (TEL) through our distance learning programme. This will enable us to engage with a wider community of teachers, mentors and other professionals to enrich the student experience
- Promoting opportunities for students to learn from engagement with local communities, enterprises and portfolios
- Experiential learning is incorporated throughout the course
- Students have autonomy to pursue their own specific learning trajectory
- Teaching is informed by relevant research related to holistic science

6.3 Summary of Teaching and Learning Methods: Description, Rationale and Examples Linked to Core Modules

Teaching & Learning Methods	Description, Rationale and Examples	Modules (SCH)			
		5401	5402	5403	5404
Presentations	Presentations by faculty and visiting teachers provide students with knowledge, theories and methodologies from experts in the field. These are supplemented by reading lists and audio visual materials.	√	√	√	
Workshops	Workshops provide a forum for discussion, role play, peer-to-peer learning and team working. Students work with conflicting ideas and build confidence and skills in group facilitation and presentation.	√	√	√	√
Seminars	Students present their own work with the support of the group. Encourages active learning and peer-to-peer learning.	√	√	√	
Tutorials	Individual tutorials allow students to discuss a specific portfolio, respond to feedback and reflect on learning and practice.	√	√	√	
Case Studies & Field Trips	Case studies in class and visits enable students to link theory to practice and work through examples.	√	√	√	
Simulations, Exercises & Role Play	Encourages pro-active learning through experience; provides opportunities to link theory to practice and engage with different perspectives. Exercises develop skills in applying tools, methods and research methodologies.	√	√	√	
Independent Study	Independent study and reading enables students to develop skills in working autonomously and to identify, plan and carry out a portfolio.	√	√	√	√
Coursework, Research & Dissertation Feedback	Students are given the opportunity for individual feedback from tutors on drafts of essays and other work before submission for assessment. This enables students to respond to feedback, develop knowledge and critical skills; as well as refining communication skills.	√	√	√	√
Student presentations	Develops skills in communication, debate, dialogue and team work as well as providing opportunities for peer-to-peer learning and engaging with different perspectives.	√	√	√	
Learning Journal	Students may keep a learning journal in order to actively engage with the College's holistic learning model (intellectual, emotional, ethical and practical). This is optional and is not assessed.				
Teaching & Learning Methods	Description, Rationale and Examples	Modules			
		5401	5402	5403	5404
Research Skills, Methods and Dissertation	Research methods and skills are taught as an integral part of the core taught modules. For example, Goethian Science and Free Choice Profiling (SCH5401); Participatory Action Research (SCH5402) and simple integrative mathematical modelling of complex systems, including ecological communities and the Earth (SCH5402 and SCH5403). MSc students may optionally decide to attend the social research methods workshops run by the MA Programme.	√	√	√	√
Reflective Inquiry	Reflective inquiry learning sets encourage students to take ownership of learning and encourage continual cycles of reflection, refinement, action and experimentation.	√	√	√	√
Participatory Learning Methods	A wide range of methods (ranging from deep ecology exercises to open space group dynamics) are used to enable experiential and embodied learning and to link theory to practice.	√	√	√	
Personal Development Planning	Theoretical frameworks (such as the Max Neef Framework for Human Needs and the Arne Naess Normative Derivational System) and reflective inquiry methods enable students to reflect on their own values, purpose and behaviours and the role they can play in society as holistic scientists.	√	√		

6.4 Assessment Methods

The approach to assessment taken in the Programmes involves the students negotiating with core faculty about the precise way in which they will meet the learning outcomes of their particular Programme. These negotiations take place within the defined assessment structure outlined in the table below.

A mixed range of assessment methods have been devised to ensure that the learning outcomes of the Programmes are adequately assessed and generally reflect the same structure approved for the Postgraduate Programme in Economics for Transition. This will include opportunities for formative assessment such as constructive feedback on drafts of assignments and peer to peer feedback on presentations, as well as summative feedback from core faculty after submission.

The capacity to judge the standard of work submitted, one's own and others', is developed with students from the outset of the programme. Group sessions are explicitly devoted to the inquiry - "how do I know when I am doing good work? How do I recognise good work when I read it, see it, hear it and experience it? What distinguishes adequate work from outstanding work?" Students are expected to work as peers with each other and faculty as a community of practice making explicit the criteria by which standards are discerned and articulated using the written guidelines in the student handbook.

Because students present their ideas to their fellows as their work develops, they are encouraged to make connections between their inquiries and to cooperate in joint inquiries wherever that makes sense. In such team submissions, students reflect on their work together as well as on the particular contribution each member has made to the project.

Module	Assessment Elements	Indicative Weighting	Credits	Assessment Methods		
Core	100% coursework			Academic Essay	Oral Presentation	Artistic Project
Science with Qualities SCH5401	(i) Coursework	100%	20	required	optional	optional
Chaos and Complexity SCH5402	(i) Coursework	100%	20	required	required	optional
The Living Earth SCH5403	(i) Coursework	100%	20	required	required	optional
Electives	100% coursework			Academic Essay or Academic Commentary	Oral Presentation	Artistic/ Design Project
Contemporary Issues in Holistic Science SCH5405	(i) Coursework	100%	20	required	optional	optional
Leading in the Midst of Complexity SCH5406	(i) Coursework	100%	20	required	optional	optional
Ecophilosophy SCH5407	(i) Coursework	100%	20	required	optional	optional
Ecopsychology SCH5408	(i) Coursework	100%	20	required	optional	optional
Economics and Development SCH5409	(i) Coursework	100%	20	required	optional	optional
Ecological Design SCH5410	(i) Coursework	100%	20	required	optional	optional
Food and Agriculture SCH5411	(i) Coursework	100%	20	required	optional	optional
Sustainable Enterprise SCH5412	(i) Coursework	100%	20	required	optional	optional
Dissertation	100% coursework			Assessment Methods		
SCH5404	Dissertation	100%	80	Dissertation	Oral Presentation	Artistic/ Design Project
				required	optional	optional

6.4.1 Core and Elective Module Assessment

Formative feedback on portfolios for all modules (core and elective) is given to students individually by means of tutorials with core faculty as often as a student requires before the deadline for submission. Summative feedback is given to each student for each of their module portfolios once a final mark has been given.

MSc students are guided during individual tutorials to choose their two elective modules based on their relevance for their particular learning journeys.

Work produced for core and elective module assessment is marked by the core faculty, who independently arrive at their own marks. A maximum of five representative portfolios for each module that have achieved high, medium and low scores are then sent to the External Examiner for moderation of the core faculty marks before final marks are agreed.

Originally assessment also included exams and vivas. However, one of our External Examiners suggested that these were counterproductive and not in keeping with the ethos of the college because the communal living and learning situation at the college gives teaching staff ample opportunities for formative feedback and continuous assessment of the small number of students. External Examiners since this change was implemented have been satisfied that academic standards have been maintained.

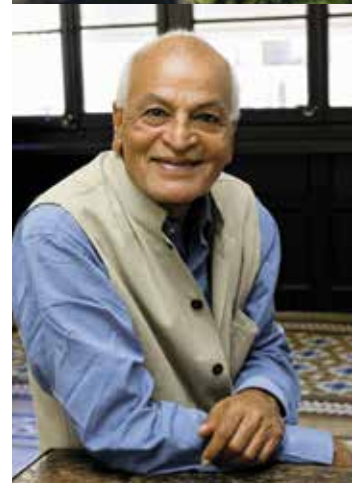
Portfolio: For their portfolios, students are required to submit from the following range of assessment methods:

- an academic essay
- a design or artistic project (such as a documentary film, original musical compositions, poems and plays) with an academic commentary
- an oral presentation with an academic commentary/essay
- an artistic/design project and an oral presentation with an academic commentary

In cases where artistic/design work or an oral presentation are involved, it is a requirement that the students write an academic commentary explaining how this work relates to the module in question. The length of this commentary is usually around 1,000 words.

We ensure that students take advantage of the range of assessment methods available to them by explicitly requiring that their core module portfolios include a range of assessed submissions. This ensures that each student makes at least two non-written submission as part of their Programme.

The marks allocated to each portion of a specific module portfolio are negotiated individually with each student bearing in mind the intended learning outcomes for the particular module in question, and also bearing in mind the need to ensure that there is a rigorous and balanced range of assessment modes across each student's programme. During the negotiation process, a learning contact is drawn up with each student which specifies the assessment formats to be produced for a given module, together with the weightings for each particular assessment element. The final submitted mark will be a single aggregate mark for each module portfolio.



6.4.2 MSc: Dissertation Assessment

The Project Tutor, based at Plymouth University, and the Head of the MSc in Holistic Science at Schumacher College, identify a University dissertation supervisor for each student. This supervisor will be the student's primary supervisor, with secondary supervision provided by the core faculty at Schumacher College. Ordinarily this supervisor will be chosen from within Plymouth University. However, where a student's choice of research topic falls outside the expertise available within Plymouth University, there is latitude for an external supervisor to be appointed (subject to the terms of the revised Memorandum of Understanding). This external supervisor, contracted as an Associative Lecturer, will provide the primary supervision for the student but there will also be a University supervisor appointed in order to oversee the supervision process and with whom the student should regularly keep in contact. Students are required to maintain close academic contact with their Plymouth University dissertation supervisor through visits and email.

The Head of Holistic Science will arrange with the MA in Economics for Transition Faculty for MSc students who want to focus their dissertations specifically in the social sciences to join the MA students on their one-day workshop in Term 1 and a three to four-day workshop in Term 2 on research methodologies in the social sciences, to be taught by the MA's Project tutor.

The core faculty will discuss with MSc students the process for selecting and designing a suitable research topic for their dissertation. These students are required to submit a proposal outlining their dissertation project and proposed methodology by the end of January in the second term. This proposal does not form part of the assessment, but must be approved by the core faculty and the University dissertation supervisor before work commences. MSc students are encouraged to select their own dissertation topic but can also draw from a communal pool of portfolios prepared in advance by the core faculty and/or Plymouth University supervisors. Examples of indicative dissertation topics include: Combining qualitative and quantitative measures of ecosystem health; the dynamics of Gaian processes: does robust behaviour emerge at the 'edge of chaos'?; The medicinal properties of plants; applications of concepts from complexity theory to management and organisational change; the application of concepts from holistic science to education for sustainability; waste management from a holistic perspective.

The dissertation (15,000–20,000 words) is blind marked by the Plymouth University supervisor and by the Schumacher College core faculty, and is moderated by the External Examiner. Students are able to submit an artistic project, or a formal presentation accompanied by a written academic commentary of a length agreed with the student by the University dissertation supervisor and the college core faculty.

6.5 PG Certificate: Indicative Timeline for Full-Time Programme Delivery and Assessment.

Code	Delivery	Assessment
SCH5401 Science of Qualities	Sept – Oct	Draft SCH5401 portfolio (not assessed) by end of Term 1 SCH501 Deadline for portfolio: January 31st
SCH5402 Chaos and Complexity	Oct – Nov	Draft SCH5402 portfolio (not assessed) by end of Term 1 SCH5402 Deadline for portfolio: January 31st
SCH5403 The Living Earth	Nov – Dec	Draft SCH5403 portfolio (not assessed) by end of Term 1 SCH5403 Deadline for portfolio: February 28th

6.6 MSc: Indicative Timeline for Full-Time Programme Delivery and Assessment

Code	Delivery	Assessment
SCH5401 Science of Qualities	Sept – Oct	Draft SCH5401 portfolio (not assessed) by end of Term 1 SCH501 Deadline for portfolio: January 31st
SCH5402 Chaos and Complexity	Oct – Nov	Draft SCH5402 portfolio (not assessed) by end of Term 1 SCH5402 Deadline for portfolio: January 31st
SCH5403 The Living Earth	Nov – Dec	Draft SCH5403 portfolio (not assessed) by end of Term 1 SCH5403 Deadline for portfolio: February 28th
SCH5404 Dissertation		Draft SCH5404 Dissertation Proposal (not assessed) by end of January SCH5404 Deadline for dissertation: August 31st
Elective Module 1	Dates tbc	Draft portfolio (not assessed) by 1 week after end of module or longer if two consecutive courses taken Assessed Portfolio by 2 weeks after end of module or longer if two consecutive courses taken
Elective Module 2	Dates tbc	Draft portfolio (not assessed) by 1 week after end of module or longer if two consecutive courses taken Assessed Portfolio by 2 weeks after end of module or longer if two consecutive courses taken



7.0 Programme Structure and Pathways

The structure of the Programmes is based on three 20 credit core modules (totalling 60 credits), which constitute the named PG Certificate, and, for the MSc, an additional 40 credits of electives and an 80-credit dissertation (including an element of research methodology).

The **core modules** are:

- SCH5401: Science of Qualities
- SCH5402: Chaos and Complexity
- SCH5403: The Living Earth

Elective modules

MSc students are required to choose two generic elective modules, which are currently also open to members of the general public. Three to four of these are offered each academic year, but occasionally a given elective module may need to be cancelled. These modules are 20-credit three-week residential courses in Term 2. The elective modules provide the opportunity to examine areas of relevance to holistic science and its applications in greater depth with specialist visiting teachers. Students work with the core faculty to integrate their learning into the MSc in Holistic Science.

The **generic elective modules** are:

- SCH5405 Contemporary Issues in Holistic Science
- SCH5406 Leading in the Midst of Complexity
- SCH5407 Ecophilosophy
- SCH5408 Ecopsychology
- SCH5409 Economics and Development
- SCH5410 Ecological Design
- SCH5411 Food and Agriculture
- SCH5412 Sustainable Enterprise

7.1 Programme Pathways

The award pathways of the Programmes allow the following:

PG Certificate in Holistic Science:

Satisfactory completion of the core 60 M level credits.

- Students can gain the Post Graduate Certificate in Holistic Science with the completion of the 60 credit core modules within one academic year.
- Students awarded the named Certificate can return to top-up to the Masters qualification in the following year through the part-time route detailed below.

MSc Holistic Science

Satisfactory completion of 180 M level credits comprising Core Modules, 2 Electives and Dissertation.

- The preference is that students enrol onto the Masters Programme and complete within one academic year. Where this is not possible students have the opportunity to complete their programme on a part time basis. The part time route normally involves completion in two years according to the schedule below. Exceptionally, alternative part time routes may be considered.
- Normal Part-time Schedule.
- Students complete the core modules in Academic Year 1 and the electives and dissertation in Academic Year 2.

Term 1: Core Modules

September- December

Term 2: Electives

January – March

Students select 2 from 3-4 electives

Term 3:

April- August

Completion of Dissertation

SCH5401 (20 credits)
Science of Qualities

Elective 1
Optional module
SCH5405 (20 credits)
Contemporary Issues in Holistic Science

SCH5402 (20 credits)
Chaos & Complexity

Elective 2
Optional module
SCH5406 (20 credits)
Leading in the Midst of Complexity

SCH5403 (20 credits)
The Living Earth

SCH5404 (80 credits)
Holistic Science Dissertation



Non-EEA students requiring visas are not permitted at this time to enrol for part-time study. This will be subject to review if UK immigration rules change.

A student enrolled to take a full-time Programme may not change to part-time. The University will consider a full-time student's extenuating circumstances where they are unable to complete within one academic year, whereupon the University's academic regulations will apply.

7.2 Achievement

To qualify for an award a student must have achieved the required number of credits, as set out in this document, and have satisfied Programme-specific requirements.

A student will be awarded a Postgraduate Certificate with Distinction provided that s/he has achieved a credit-weighted average mark of 70% or above across all the modules.

A student will be awarded a Postgraduate Certificate with Merit provided that s/he has achieved a credit-weighted average mark of 60% or above across all the modules.

A student will be awarded a Masters degree with Distinction provided that s/he has achieved a credit-weighted average mark of 70% or above across all modules (including the dissertation/major project) and the mark for the dissertation/major project module is not less than 70%.

A student will be awarded a Masters degree with Merit provided that s/he has achieved a credit-weighted average mark of 60% or above across all modules (including the dissertation/major project) and the mark for the dissertation/major project is not less than 60%.

Where a student withdraws or is required to withdraw from a Programme, the Award Board will confer the highest award to which s/he is entitled.

8.0 Exemptions/special academic regulations

Students cannot apply for exemption from any modules through APEL (Assessment of Prior Experiential Learning) or APCL (Assessment of Prior Certificated Learning).

Final Award Title	MSc in Holistic Science / PG Cert in Holistic Science
Level	7 / 7
Intermediate Awards Level	PG Cert / N/A
Awarding Institution	Plymouth University
Teaching Institution	Schumacher College
Accrediting Body	N/A
Appropriate Benchmarks	N/A
UCAS Code	N/A
JACS code	
Date of production:	
Date of most recent approval:	
By:	

9.0 Module Records

MODULE CODE:	SCH5401	MODULE TITLE:	Science with Qualities		
CREDITS: 20	FHEQ Level: 7	JACS CODE: F900			
PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no			
SHORT MODULE DESCRIPTOR: This module examines the fundamental principles of modern science and their limitations. It also explores new directions in science that combine quantitative and qualitative approaches.					
ELEMENTS OF ASSESSMENT Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		
SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College					
Professional body minimum pass mark requirement: N/A					
MODULE AIMS: The aim of this module is to engage in the philosophy and methodology of holistic science in order to develop a participatory relationship with nature.					
ASSESSED LEARNING OUTCOMES: (1) Evaluate and critically reflect on the reasons for extending modern science to include qualitative epistemologies. (2) Define and critically evaluate key insights from holistic science using various examples from philosophy, Goethean science and biology. (3) Apply the principles and methods of holistic science to advanced research in any area.					
DATE OF APPROVAL:		04/2012	FACULTY/OFFICE:		Academic Partnerships
DATE OF IMPLEMENTATION:		09/2012	SCHOOL/PARTNER:		Schumacher College
DATE(S) OF APPROVED CHANGE:		Click here to enter a date.	TERM:		Autumn term (September- December)
SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT <i>Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.</i>					
ACADEMIC YEAR: 2016/2017			NATIONAL COST CENTRE: 111		
MODULE LEADER: Dr Stephan Harding			OTHER MODULE STAFF:		

SUMMARY of MODULE CONTENT

(i) Philosophical inquiry

To articulate the importance of organising ideas in the development of scientific world views. The use of hermeneutic inquiry in the construction of an holistic understanding of natural phenomena. Principles of phenomenology, realism, and analytical empiricism as applied to an understanding of the natural world.

(ii) Methodologies of intuitive and holistic understanding

Methodology of reductionism illustrated by examples from the history of science and biology.

Goethean science applied to a variety of phenomena, including colour, morphology and landscape.

Application of the Free Choice Profiling methodology to qualitative evaluation in various domains.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lecture	40	
Seminar	15	
Tutorial	6	
Demonstration	0	
Practical classes and workshops	15	
External visit	24	
Guided independent study	100	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	200	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1 C2	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Dr Stephan Harding	Date: 21/06/2016	Approved by: Dr Stephan Harding	Date: 21/06/2016
<p>Recommended Texts and Sources:</p> <p>Abram, D. (1996). <i>The Spell of the Sensuous</i>. Pantheon Books.</p> <p>Bortoft, H. (1996). <i>The Wholeness of Nature</i>. Floris Books.</p> <p>Bortoft H.(2012). <i>Taking Appearance Seriously</i>. Floris Books</p> <p>Colquhoun, M. and Ewald, A. (1996) <i>New Eyes for Plants</i>. Hawthorn Press.</p> <p>Hoffmann, N. (2007). <i>Goethe's Science of Living Form</i>. Adonis Press.</p> <p>Holdrege, C. (2014) <i>Thinking Like a Plant</i>. Lindisfarne Books</p> <p>Seamon, D. and Zajonc, A. (eds.) (1998). <i>Goethe's Way of Science</i>. SUNY</p> <p>Sheldrake R. (2012). <i>The Science Delusion</i>. Coronet</p> <p>Tarnas, R. (1991). <i>The Passion of the Western Mind</i>. Ballantine.</p> <p>Tarnas, R. (2008). <i>Cosmos and Psyche</i>. Plume.</p> <p>Varela, F. Thompson, E. M and Rosch, F. (1993). <i>The Embodied Mind</i>. MIT Press.</p> <p>Wertheim, M. (1997). <i>Pythagoras' Trousers: God, Physics and the Gender Wars</i>. Fourth Estate</p>			

MODULE CODE: SCH5402	MODULE TITLE: Chaos and Complexity
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CREDITS: 20	FHEQ Level: 7	JACS CODE: F900
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PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no
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SHORT MODULE DESCRIPTOR: An exploration of theoretical and practical principles of chaos and complexity theories using mathematical modelling and experiential enquiry.

ELEMENTS OF ASSESSMENT *Use HESA KIS definitions*

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
To develop the student's skill in the use of complexity theory for investigating the dynamic principles that underlies the emergence of distinctive order at various levels of organisation.

ASSESSED LEARNING OUTCOMES:

- (1) Demonstrate familiarity with the basic mathematics of chaos and complexity theories.
- (2) Define and critically evaluate the essential characteristics of emergent properties.
- (3) Articulate how complexity theory can be used to investigate the notion that science can provide us with complete knowledge and control.
- (4) Articulate a range of ways in which chaos and complexity theories help to envision and enact alternatives to rigid hierarchical human organisational structures.
- (5) Demonstrate familiarity with how chaos and complexity theories can open up a more participatory view of the Universe.

DATE OF APPROVAL:	04/2012	FACULTY/OFFICE:	Academic Partnerships
DATE OF IMPLEMENTATION:	09/2012	SCHOOL/PARTNER:	Schumacher College
DATE(S) OF APPROVED CHANGE:	Click here to enter a date.	TERM:	Autumn term (September- December)

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2016/2017	NATIONAL COST CENTRE: 111
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MODULE LEADER: Philip Franses	OTHER MODULE STAFF:
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<p>SUMMARY of MODULE CONTENT</p> <p>Key features of chaos and complexity theories and their scientific applications in chemistry, biology and human social systems. Non-linear dynamics, unpredictability and self-organisation in complex systems as formative principles in nature. Life at the 'edge of chaos'. Health as an emergent property of complex systems. Principles of form and function in cells and the genome as the foundation of coherent order within organisms. Applications of chaos and complexity theories to human organisations and creative groups. The epistemological and social implications of chaos and complexity theories. The implications of chaos and complexity for our sense of creativity, explored through a participatory pedagogy.</p>

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lecture	33	
Seminar	18	
Tutorial	6	
Demonstration	0	
Practical classes and workshops	9	
External visit	0	
Guided independent study	134	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	200	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
	C2			
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Dr Stephan Harding	Date: 21/06/2016	Approved by: Dr Stephan Harding	Date: 21/06/2016
<p>Recommended Texts and Sources:</p> <p>Capra, F. (1997). <i>The Web of Life</i>. Flamingo.</p> <p>Franses P. (2015) <i>The Time, Light and the Dice of Creation: Through Paradox in Physics to a New Order</i>. Floris</p> <p>Goodwin, B. (1997). <i>How the Leopard Changed its Spots</i>. Phoenix</p> <p>Goodwin, B. (2007). <i>Nature's Due</i>. Floris Books.</p> <p>Shaw, P. (2002). <i>Changing Conversations in Organizations: A Complexity Approach to Change</i>. Routledge.</p> <p>Sole, R. and Goodwin B (2001). <i>Signs of Life: How Complexity pervades Biology</i>. Basic Books.</p> <p>Stewart, I. (1997). <i>Does God Play Dice?</i> Penguin.</p> <p>Walker, B. and Salt, D. (2006). <i>Resilience Thinking</i>. Island Press.</p>			

MODULE CODE: SCH5403	MODULE TITLE: The Living Earth
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CREDITS: 20	FHEQ Level: 7	JACS CODE: F900
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PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no
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SHORT MODULE DESCRIPTOR: The module examines the principles of complexity and emergent order at the level of the Earth. Studies in biogeophysical processes and models of integrative global dynamical processes will be used to critically review how globally stable states can emerge from complex biological and geophysical interactions.

ELEMENTS OF ASSESSMENT Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
To explore the self-organising dynamics of ecological communities and the Earth System (Gaia) using a combination of complex systems analysis and experiential approaches to the natural world.

ASSESSED LEARNING OUTCOMES:
 (1) Articulate the coherent scientific principles that underlie the dynamics and evolution of ecological communities and the Earth System (Gaia).
 (2) Articulate how Gaia theory combined with the deep ecology approach can lead to a more participatory view of the Earth.
 (3) Critically evaluate the differences between the Gaia hypothesis, Gaia theory and biogeochemistry, based on an understanding of cybernetic principles.

DATE OF APPROVAL:	04/2012	FACULTY/OFFICE:	Academic Partnerships
DATE OF IMPLEMENTATION:	09/2012	SCHOOL/PARTNER:	Schumacher College
DATE(S) OF APPROVED CHANGE:		TERM:	Autumn term (September- December)

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2016/2017	NATIONAL COST CENTRE: 111
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MODULE LEADER: Dr Stephan Harding	OTHER MODULE STAFF:
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SUMMARY of MODULE CONTENT
 An introduction to deep ecology as the basis for a philosophical and experiential exploration of the living earth. Daisyworld and beyond. How globally stable states can emerge from complex interactions between life, rocks, atmosphere and oceans. The carbon cycle at different time scales and its effects on Earth's temperature. Biological modification of the Earth's albedo. Critical steps in the evolution of the Earth. Symbiogenesis and symbiosis as integrative principles in the evolution of the Earth. The regulation of atmospheric oxygen as a Gaian process. The role of biodiversity in maintaining the health of ecological communities and the Earth. Climate change from a Gaian perspective. Experiencing the life of Gaia through a science-based participatory pedagogy.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lecture	44	
Seminar	10	
Tutorial	6	
Demonstration	0	
Practical classes and workshops	9	
External visit	12	
Guided independent study	129	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	200	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
	C2			
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Dr Stephan Harding	Date: 21/06/16	Approved by: Dr Stephan Harding	Date: 21/06/2016
Recommended Texts and Sources:			
Abram, D. (1990). The perceptual implications of Gaia. In A. H Badiner (Ed.), <i>Dharma Gaia: A harvest of essays in Buddhism and ecology</i> . Parallax.			
Capra, F. (1997). <i>The Web of Life</i> , Flamingo.			
Gunderson, L.H. and Holling, C.S. (2002) <i>Panarchy: Understanding Transformations in Human and Natural Systems</i> . Island Press, Washington DC.			
Harding, S.P. (2009). <i>Animate Earth: Science, Intuition and Gaia</i> . Green Books. 2 nd ed.			
Lenton, T. and Watson, A. (2011). <i>Revolutions That Made The Earth</i> . OUP.			
Lenton, t. (2016) <i>Earth System Science. A very Short Introduction</i> . OUP			
Lovelock, J. E.(2000). <i>Gaia: The Practical Science of Planetary Medicine</i> , Gaia Books.			
Lovelock, J.E.(1995). <i>The Ages of Gaia</i> (2nd ed.) OUP.			
Lovelock, J.E. (2007). <i>The Revenge of Gaia</i> . Penguin, Allen Lane.			
Kump, L.R., Kasting, J.E. and Crane, R.G. (2010). <i>The Earth System</i> . Pearson Prentice Hall.			
Margulis, M. and Sagan, D. (1987). <i>Microcosmos</i> . Allen and Unwin.			
Margulis, M. (1984). <i>Early Life</i> . Jones and Bartlett.			
Margulis, M. (1998). <i>Symbiotic Planet</i> . Weidenfield and Nicholson.			
Volk, T. (1997). <i>Gaia's Body</i> . Springer Verlag.			
Walker, B. and Salt, D. (2006). <i>Resilience Thinking</i> . Island Press.			
Ward, P. and Brownlee, D. (2000). <i>Rare Earth</i> . Copernicus.			

MODULE CODE: SCH5409	MODULE TITLE: Economics and Development
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CREDITS: 20	FHEQ Level: 7	JACS CODE: L190
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PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no
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SHORT MODULE DESCRIPTOR: This module will examine the process of development to date, providing a critique of today's dominant paradigm and models and will explore various alternative emerging development paths and strategies that are more socially just and ecologically sustainable.

ELEMENTS OF ASSESSMENT Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
 (1) Analyse and critique the theoretical underpinnings of the dominant neoclassical approach to development;
 (2) Explore new more socially and ecologically oriented approaches to economic development
 (3) Explore the experience of the range of alternative approaches that are emerging

ASSESSED LEARNING OUTCOMES: (additional guidance below)
 (1) Articulate and critique the dominant neoclassical approach to economic development;
 (2) Analyse new more socially and ecologically oriented theoretical approaches to economic development
 (3) Critically appraise the range of emerging alternative approaches to economic development

DATE OF APPROVAL:	04/2012	FACULTY/OFFICE:	Academic Partnerships
DATE OF IMPLEMENTATION:	09/2012	SCHOOL/PARTNER:	Schumacher College
DATE(S) OF APPROVED CHANGE:		TERM:	Autumn term (September-December)

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2016/2017	NATIONAL COST CENTRE: 111
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MODULE LEADER: Jonathan Dawson	OTHER MODULE STAFF:
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<p>SUMMARY of MODULE CONTENT</p> <p>Current concepts of development and sustainability. The history of globalisation. Impacts of globalisation in terms of equity, power imbalances, global warming, farming, biodiversity and the environment in general. The effects of ecological crises on national economies, especially those of the South. The role of global institutions in driving the process of globalisation. New approaches to development, combining ecology, social equity, fulfilment of human needs and participation. The self-organising principles of ecosystems and how they can be used in the development of sustainable agricultural practice. The emergence of more equitable and sustainable alternative development models.</p>
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SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lecture	44	
Seminar	20	
Tutorial	4	
Demonstration	0	
Practical classes and workshops	0	
External visit	12	
Guided independent study	120	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	200	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
	C2			
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Jonathan Dawson	Date: 20/06/16	Approved by: Jonathan Dawson	Date: 20/06/16
Recommended Texts and Sources:			
<p>Amin, S.P., Bond, D.M., Dembele and Sharife K. (2009). <i>Aid to Africa: Redeemer or Coloniser?</i>, Fahamu Books & Pambuzuka Press.</p> <p>Anderson, S. (2000). <i>Views from the South: The Effects of Globalization and the WTO on Third World Countries</i>, International Forum on Globalisation, Food First.</p> <p>Bello, W. (2001). <i>The Future in the Balance: Essays on Globalization and Resistance</i>, Food First.</p> <p>Cavanagh, J. (2004). <i>Alternatives to Economic Globalisation - A Better World is Possible</i>, International Forum On Globalization, Berrett-Koehler Publishers.</p> <p>Chambers, R. (1997). <i>Whose Reality Counts?: Putting the First Last</i>, Intermediate Publications, London.</p> <p>Chambers, R. (2008). <i>Revolutions in Development Inquiry</i>, Earthscan, London.</p> <p>Danaher, K. (2005). <i>Globalize This!: The Battle Against the World Trade Organization and Corporate Rule</i>, Common Courage Press.</p> <p>Escobar A. (2011). <i>Encountering Development: The Making and Unmaking of the Third World</i> . Princeton University Press</p> <p>Khor, M. (2002). <i>Intellectual Property, Biodiversity and Sustainable Development: Resolving the Difficult Issues</i>, ZED Books, London.</p> <p>Norberg-Hodge, H. (2000). <i>Ancient Futures: Learning From Ladakh</i>, Wisdom Books</p> <p>Patel, R. (2008). <i>Stuffed and Starved: Markets, Power and the Hidden Battle for the World Food System</i>, Schwartz Publishing.</p> <p>Rosenberg, J. (2001). <i>The Follies of Globalisation Theory</i> , Verso.</p> <p>Sachs, W. (Ed.) (2009). <i>The Development Dictionary: A Guide to Knowledge as Power</i>, ZED Books, London.</p> <p>Shiva. V. (1989). <i>Staying Alive: Women, Ecology and Development</i>, South End Press</p> <p>Swilling, M. and Annecke. E. (2012). <i>Just Transitions: Explorations of Sustainability in an Unfair World</i>. Juta, Cape Town.</p>			

MODULE CODE: SCH5405	MODULE TITLE: Contemporary Issues in Holistic Science
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CREDITS: 20	FHEQ Level: 7	JACS CODE: F900
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PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no
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SHORT MODULE DESCRIPTOR: Rapid developments in mainstream science are converging on key insights in holistic science. This module allows students to explore a range of these convergences together with their various social and ethical implications.

ELEMENTS OF ASSESSMENT *Use HESA KIS definitions*

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
The module aims to examine novel material and concepts in holistic science that shed new light on a variety of areas within mainstream science, together with an exploration of the ecological and ethical implications of such a unified perspective.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

- (1) Explain how insights from holistic science can create new understandings within key areas of mainstream science.
- (2) Articulate how notions about quantities and qualities became dissociated from each other during the development of Western science.
- (3) Present modern ideas in science, psychology and spirituality using the notion of the universe as a unified whole.
- (4) Articulate and reflect upon the ethical and ecological implications of these new insights in relation to the principles of holistic science.

DATE OF APPROVAL:	04/2012	FACULTY/OFFICE:	Academic Partnerships
DATE OF IMPLEMENTATION:	09/2012	SCHOOL/PARTNER:	Schumacher College
DATE(S) OF APPROVED CHANGE:		TERM:	Autumn term (September- December)

DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2016/2017	NATIONAL COST CENTRE: 111
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MODULE LEADER: Dr Stephan Harding	OTHER MODULE STAFF
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<p>SUMMARY of MODULE CONTENT</p> <p>Students will explore a selection of scientific issues from the perspective of holistic science, including: the connections between matter and consciousness; quantum physics and its ontological implications, nature as an 'extended mind'; emergent properties and the behaviour of complex systems; ecology; evolution and animal behaviour.</p>

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lecture	33	
Seminar	18	
Tutorial	6	
Demonstration	0	
Practical classes and workshops	9	
External visit	0	
Guided independent study	134	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	200	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
	C2			
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Dr Stephan Harding	Date: 21/06/16	Approved by: Dr Stephan Harding	Date: 21/06/2016
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Recommended Texts and Sources:

- Abram, D. (2011). *Becoming Animal*. Vintage Press
- Bateson, G. (2002). *Mind in Nature*. Hampton Press
- Bateson, G. (2004). *Angels Fear: Towards an Epistemology of the Sacred*. Hampton Press
- Bekoff, M. (2008). *The Emotional Lives of Animals*. New World Library
- Charlton, N.G. (2008). *Understanding Gregory Bateson*. SUNY
- Harding, S.P. (2009). *Animate Earth: Science, Intuition and Gaia*. Green Books
- Ingold, T. (2011). *Being Alive: Essays on Movement, Knowledge and Description*, Routledge
- De Quincey, C. (2010). *Radical Nature: The Soul of Matter*. Perk Street Press
- Rothenberg, D. (2005). *Why Birds Sing*. Allen Lane.
- Rothenberg, D. (2012). *Survival of the Beautiful*. Bloomsbury
- Sheldrake, R. (2005). *A New Science of Life*. Icon Books
- Sheldrake, R. (2012). *The Science Delusion*. Coronet

MODULE CODE: SCH5406	MODULE TITLE: Leading in the Midst of Complexity
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CREDITS: 20	FHEQ Level: 7	JACS CODE: N990
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PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no
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SHORT MODULE DESCRIPTOR: This course offers a new approach to leadership and group facilitation using principles from an ecological and participatory worldview. Skills are developed in understanding systemic patterns and group dynamics, cultural narratives, communication skills, action-learning and other practices. Students work on case studies to model, practice and critique the methodologies presented.

ELEMENTS OF ASSESSMENT Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- (1) To demonstrate the application of key principles of systemic thinking drawn from ecology, complexity theory, organisational theory, and Eco psychology to leadership and group dynamics for sustainable change.
- (2) Compare and contrast with other leadership approaches.
- (3) Introduce and practice a range of tools and methods in ecological leadership and group facilitation (e.g. systemic mapping; pattern breaking; active listening; reflective inquiry; conflict resolution);
- (4) Apply to case studies to model, practice and critique the methodologies used.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

- (1) Demonstrate critical theoretical and experiential understanding of new approaches to leadership and group facilitation rooted in an ecological worldview.
- (2) Compare and contrast with other leadership approaches applied to sustainable change.
- (3) Self evaluate and reflect on own and others' qualities, strengths and challenges as a leader in order to improve practice;
- (4) Participate effectively with a group as a leader or member.
- (5) Apply skills and knowledge of a range of leadership and facilitation tools and methods to case studies.

DATE OF APPROVAL:	04/2012	FACULTY/OFFICE:	Academic Partnerships
DATE OF IMPLEMENTATION:	09/2012	SCHOOL/PARTNER:	Schumacher College
DATE(S) OF APPROVED CHANGE:		TERM:	Autumn term (September- December)

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2016/2017	NATIONAL COST CENTRE: 111
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MODULE LEADER: Professor Patricia Shaw	OTHER MODULE STAFF:
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SUMMARY of MODULE CONTENT
Introduction to principles of an ecological and participatory worldview; applications of complexity theory to leadership and group dynamics for sustainable change; compare and contrast this approach to more 'mechanistic' leadership approaches; experiential practice in creating tools and methods for leadership based on students' own developing insight and experience.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lecture	33	
Seminar	18	
Tutorial	6	
Demonstration	0	
Practical classes and workshops	9	
External visit	0	
Guided independent study	134	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	200	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
	C2			
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Dr Stephan Harding	Date: 21/06/16	Approved by: Dr Stephan Harding	Date: 21/06/2016
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Recommended Texts and Sources:

- Conaty, P., Lewis, M. (2012) *The Resilience Imperative: Cooperative Transitions to a Steady-state Economy*. Gabriola Island, BC: New Society Publishers
- Crawford, M. (2010) *The Case for Working with Your Hands: Or Why Office Work is Bad for Us and Fixing Things Feels Good*. London: Penguin
- Heron, J. (1998). *Co-operative Inquiry*, Sage, London
- Ingold, T. (2013) *Making: Anthropology, archaeology, art and architecture*. London: Routledge
- Kaplan, A., Davidoff, S. (2014). *A Delicate Activism: A Radical Approach to Change*. Cape Town: The Proteus Initiative.
- Kolb, D. A. (1984) *Experiential Learning: experience as the source of learning and development* New Jersey: Prentice-Hall
- Marshall, J. (1999). 'Living Life as Inquiry', *Systemic Practice and Action Research* Vol 12, No. 2.
- McGilchrist, I. (2009). *The Master and His Emissary: The Divided Brain and the Making of the Western World*. New Haven, CT: Yale University Press.
- Murray, R. (2010) *Cooperation in the Age of Google: What is the way forward for the co-operative sector?* Manchester: Co-operatives UK
- Hanh, T. N. (2007) *The Art of Power*. New York, HarperCollins
- Palmer, J. P., Zajonc, A., Scribner, M. (2010). *The heart of higher education: a call to renewal*. San Francisco: Jossey Bass.
- Reason, P. And Bradbury, H. (eds) (2008). *The Sage Handbook of Action Research*, Sage Publications, London. Chapter 43.
- Rooke, D. and Torbert, W.R. (2008). 'Seven Transformations of Leadership', *Harvard Business Review*
- Shaw, P. (2002). *Changing Conversations in Organizations*, Routledge, London.
- Shaw, P., Stacey, R. (2006). *Experiencing Risk, Spontaneity and Improvisation in Organizational Change: Working Live*. Taylor & Francis: Abingdon.
- Shotter, J. (2012). 'More than cool reason: "Witness-thinking" or 'systemic thinking' and "thinking about systems"', *International Journal of Collaborative Practices*, 3(2012), pp. 1–13.

MODULE CODE: SCH5404	MODULE TITLE: Holistic Science Dissertation
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CREDITS: 80	FHEQ Level: 7	JACS CODE: F900
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PRE-REQUISITES: none	CO-REQUISITES: none	COMPENSATABLE: no
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SHORT MODULE DESCRIPTOR: This module provides students with the opportunity to develop and demonstrate their capacity for independent study in the application of research and reporting skills to an appropriate topic.

ELEMENTS OF ASSESSMENT *Use HESA KIS definitions*

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (formally scheduled)	0%	C1	100%	P1	0 % or Pass/Fail (delete as appropriate)
E2 (OSCE)	0%	C2	%	P3	0% or Pass/Fail (delete as appropriate)
T1 (in-class test)	0%	A1	%		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: SCH/Schumacher College

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
Provide an opportunity for students to plan and to pursue in depth a topic of their own interest. Extend students' powers of critical evaluation and original thought. Develop the skills and confidence necessary to carry out research in the selected topic.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
 (1) Identify a suitable research topic, formulate research questions plan and develop a research design.
 (2) Make use of scholarly reviews and primary resources appropriate to the discipline. (3) Analyse the research problem using an appropriate and ethical methodology.
 (4) Prepare a clear, well presented report or project and/or artefact which communicates the ideas, problems, solutions and results in an accessible manner to both specialist and non-specialist audiences.

DATE OF APPROVAL:	04/2012	FACULTY/OFFICE:	Academic Partnerships
DATE OF IMPLEMENTATION:	09/2012	SCHOOL/PARTNER:	Schumacher College
DATE(S) OF APPROVED CHANGE:	Click here to enter a date.	TERM:	Autumn term (September- December)

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2016/2017	NATIONAL COST CENTRE: 111
MODULE LEADER: Dr Stephan Harding	OTHER MODULE STAFF Philip Franses, Jonathan Dawson, Tin Crabtree, Seaton Baxter, Bethan Stagg and Plymouth University academics and external supervisors as appropriate.

<p>SUMMARY of MODULE CONTENT Indicative research topics may include: Goethian science, ecosystem and Earth system dynamics, medicinal properties of plants, complexity theory and organisations, bio-cultural diversity, philosophy of holistic science. Includes an optional 1 day workshop in Term 1 and a 3-4 day workshop in Term 2 both on social science research methods.</p>
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SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]		
Scheduled Activities	Hours	Comments/Additional Information
Lecture	20	
Seminar	18	
Tutorial	20	
Demonstration	0	
Practical classes and workshops	0	
External visit	0	
Guided independent study	742	Preparation for scheduled activities using Virtual Learning Environment, module reading list and class materials; preparation for assignments. Detailed formative assessment will be given to students on a one to one basis.
Total	800	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component Weighting	Comments include links to learning objectives
Written exam	E		% Total = 0%	
	T		Total = 0%	
Coursework	C1	Portfolio	Total = 100%	The assessment will be a portfolio consisting of a combination of academic activities agreed upon discussion with the module leader. The portfolio will address all the learning outcomes.
	C2			
Practice	P1		0% Total = 0%	
	P2		0% Total = 0%	
	P2		0% Total = 0%	

Updated by: Dr Stephan Harding	Date: 21/06/2016	Approved by: Dr Stephan Harding	Date: 21/06/2016
Recommended Texts and Sources:			
<p>Bryman, A. (2008). <i>Social Research Methods</i>. 3rd edn. Oxford: Oxford University Press.</p> <p>Hoffman, N. (2007). <i>Goethe's Science of Living Form; The Artistic Stages</i>. Adonis Press.</p> <p>Mason, J. (2002). <i>Qualitative Researching</i>. 2nd edn. London: Sage.</p> <p>Moser, C.A. and Kalton, G. (1993). <i>Survey Methods in Social Investigation</i>. 3rd edn. Heinemann.</p> <p>Reason, P. And Bradbury, H. (eds.) (2008). <i>The Sage Handbook of Action Research</i>, Sage Publications, London.</p> <p>Shaw, P. (2002). <i>Changing Conversations in Organizations: A Complexity Approach to Change</i>. Routledge.</p> <p>Wemelsfelder F. (1997). The scientific validity of subjective concepts in models of animal welfare. <i>Applied Animal Behaviour Science</i>, (53), 75-88.</p>			

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