

**Schumacher
College**



**UNIVERSITY OF
PLYMOUTH**

**The Ecological Paradigm
SCH509**

Economics for Transition 2019 / 20

Module Leader: **Andy Letcher**

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Welcome and Introduction

SCH510: The Ecological Paradigm

This module explores the evolution of our understanding of the concept of sustainability, from the Brundtland Report, through triple bottom line accounting, to concerns relating to social and ecological resilience and regeneration. The module involves a deep dive into holistic science and the design principles underlying other-than-human self-organising principles. It explores the degree to which insights can be gleaned from these fields that could be transferable into the socio-economic realms. A core hypothesis is that at the root of our converging crisis is the widening gulf between how natural and human systems are designed and organised. The module will seek to develop within the learning community personal & group inquiry practices to raise awareness of the interdependent relationship between the individual, society and nature.

Teaching and Assessment Team

Programme Leader:	Jonathan Dawson
Location:	Schumacher College
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Student meeting times:	Informal, by negotiation. Formal tutorial in study week at the end of the module

Module leader:	Andy Letcher
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Email:	Andy.lecher@schumachercollege.org.uk
Student meeting times:	Informal, by negotiation. Formal tutorial in study week at the end of the module

Module Aims

This module aims to:

- (a) Differentiate between different concepts of sustainability;
- (b) Apply principles from ecology and Gaia Theory, dynamic systems thinking and complexity science to socio-economic systems illustrated with case studies;
- (c) Develop personal & group inquiry practices to raise awareness of the interdependent relationship between the individual, society and nature & between theory, experience & practice.

Module Assessed Learning Outcomes

At the end of the module the learner will be expected to be able to:

- (1) Critically analyse, compare and contrast theoretical approaches to sustainable development;
- (2) Demonstrate theoretical and experiential understanding of an ecological world view drawn from ecology and systems thinking; chaos and complexity science; and Gaia Theory;
- (3) Apply holistic science theory to case study applications in the socio-economic domain;
- (4) Self evaluate and reflect on own values and behaviours in order to improve professional and personal awareness, practice and team work.

Teaching and Learning Strategy

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	<u>200</u>	(NB: 1 credit = 10 hours or learning; 10 credits = 100 hours, etc)

Students are expected to take full responsibility for their learning, **attend all** scheduled sessions, read appropriate indicated readings, and work on set exercises (formative and summative assessment).

Based on previous experience; students who failed to attend sessions are likely to be unsuccessful or show poor performance. Please ensure that you are engaging with the content and learning activities relating to this module.

Scheme of Work

This module will be assessed by:

Element of Assessment	Module Weighting	Component	Link to Assessed Learning Outcomes
Either: i) a 3,000-word essay or ii) an artistic project (which needs to be agreed in advance with the module leader accompanied by a 1,000 word academic commentary	70%		LO1, LO2, LO3
The summary of a reflective learning journal	30%		LO4

Drafts/outlines need to be submitted by 5.00pm on Friday, October 4, 2019.
Formative feedback will be provided on these by 5.00pm on Monday, October 7, 2019.

Assignments need to be submitted by 5.00pm on Friday, October 11, 2019.

The submission, marking and feedback schedule is as follows

Both assessment assignments

Drafts/outlines	5.00pm on Friday, October 4, 2019.
Formative feedback	5.00pm on Monday, October 7, 2020.
Assignment submission	5.00pm on Friday, October 11, 2019.
Feedback and provisional marks	5.00pm on Friday, November 8, 2020

Marking Rubric

LO1: • Critically analyse, compare and contrast theoretical approaches to sustainable development			
Fail: 0 – 49%	Pass: 50 – 59%	Merit: 60 – 69%	Distinction: 70 – 100%
Does not demonstrate a critical understanding of key theoretical frameworks and debates related to sustainable development. Limited reference to relevant literature.	Demonstrates a partial knowledge and understanding of theoretical approaches to sustainable development.	Demonstrates a sound knowledge and understanding of theoretical approaches to sustainable development.	Demonstrates full and detailed knowledge and understanding of theoretical approaches to sustainable development and is able to critically analyse and compare and contrast approaches.
LO2: • Demonstrate theoretical and experiential understanding of an ecological world view drawn from ecology and systems thinking; chaos and complexity science; and Gaia Theory			
Fail: 0 – 49%	Pass: 50 – 59%	Merit: 60 – 69%	Distinction: 70 – 100%
Fails to demonstrate a theoretical and experiential understanding of an ecological world view. Limited reference to relevant literature.	Demonstrates in some measure a theoretical and experiential understanding of an ecological world view.	Demonstrates in good measure a theoretical and experiential understanding of an ecological world view drawn from ecology and systems thinking; chaos and complexity science; and Gaia Theory.	Demonstrates a thorough and rigorous theoretical and experiential understanding of an ecological world view drawn from ecology and systems thinking; chaos and complexity science; and Gaia Theory.
LO3: • Apply holistic science theory to case study applications in the socio-economic domain			
Fail: 0 – 49%	Pass: 50 – 59%	Merit: 60 – 69%	Distinction: 70 – 100%
Does not apply holistic science theory to case study applications in the socio-economic domain. Limited reference to relevant literature.	Limited use of case studies to demonstrate application of holistic science theory to the socio-economic domain.	Successful use of case studies to demonstrate application of holistic science theory to the socio-economic domain.	Excellent and rigorous use of case studies to demonstrate the application of holistic science theory to the socio-economic domain.
LO4: • Self evaluate and reflect on own values and behaviours in order to improve professional and personal awareness, practice and team work			
Fail: 0 – 49%	Pass: 50 – 59%	Merit: 60 – 69%	Distinction: 70 – 100%

<p>Lacks evidence of reflection on own practice and lacks descriptions of how practice and team work have changed as a result.</p> <p>This is assessed against evidence of:</p> <p>Evaluating own individual practice, in terms of feelings, behaviours and actions. Evaluating one's interaction with others from an inter-personal perspective. Demonstrating an understanding of reflexivity and how it manifests in your own work. Noting the emergence of new understandings and practices in a relational, dialogic sense. Identifying areas for improvement and showing changes in practice.</p>	<p>Limited evidence of reflection on own practice and limited descriptions of how practice and team work have changed as a result.</p> <p>This is assessed against evidence of:</p> <p>Evaluating own individual practice, in terms of feelings, behaviours and actions. Evaluating one's interaction with others from an inter-personal perspective. Demonstrating an understanding of reflexivity and how it manifests in your own work. Noting the emergence of new understandings and practices in a relational, dialogic sense. Identifying areas for improvement and showing changes in practice.</p>	<p>Clear evidence of reflection on own practice, some evidence of reflexive awareness and good descriptions of how practice and team work have changed as a result.</p> <p>This is assessed against evidence of:</p> <p>Evaluating own individual practice, in terms of feelings, behaviours and actions. Evaluating one's interaction with others from an inter-personal perspective. Demonstrating an understanding of reflexivity and how it manifests in your own work. Noting the emergence of new understandings and practices in a relational, dialogic sense. Identifying areas for improvement and showing changes in practice.</p>	<p>Extensive evidence of reflection on own practice and excellent, reflexively-rich, descriptions of how practice and team work have changed as a result.</p> <p>This is assessed against evidence of:</p> <p>Evaluating own individual practice, in terms of feelings, behaviours and actions. Evaluating one's interaction with others from an inter-personal perspective. Demonstrating an understanding of reflexivity and how it manifests in your own work. Noting the emergence of new understandings and practices in a relational, dialogic sense. Identifying areas for improvement and showing changes in practice.</p>
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Outline of module sessions

Semester Week	Week Beginning	Provisional Activities
1	9/9/19	Introduction to the module, to holistic science design principles and to the nature of the converging crises
2	16/9/19	Deep dive into various dimensions of holistic science design principles
3	23/9/19	The social and spiritual divides; points to intervene in systems
4	30/9/19	Initial exploration of healthy human systems and what we can learn in their design from a study of holistic science
5	7/10/19	Independent study week

Please note that this schedule may be subject to alteration; you are advised to use this link: <https://open.schumachercollege.org.uk/course/view.php?id=179>

Hand in Process and Submission of Assessed Work

All assessment assignments must be submitted via an electronic 'drop box' on the Virtual Learning Environment to meet the date and time as published in your Teaching, Learning and Assessment Handbook. Where CDs, DVDs or other project materials are submitted as part of the project, these should, where possible, be submitted in triplicate, enabling both of the main markers and the External Examiner to receive copies. These must be presented by the specified date and time to the postgraduate administration office. In the event the Postgraduate administration team are unavailable a member of faculty will be nominated to accept submissions in advance of each deadline date.

Turnitin

Turnitin (<http://www.turnitinuk.com/>) is an Internet-based 'originality checking tool' which allows documents to be compared with content on the Internet, in journals and in an archive of previously submitted works. It can help to detect unintentional or deliberate plagiarism.

It is a formative tool that makes it easy for students to review their citations and referencing as an aid to learning good academic practice. Turnitin produces an 'originality report' which may be necessary to be attached to your coursework and your tutors will advise you on how to access and use Turnitin where required for

your studies. To learn more about Turnitin go to: <https://help.turnitin.com/Home.htm>

Key teaching materials

These will comprise pre-class readings, follow-up resources, videos, podcasts, digital presentations etc. All these will be posted on our digital resource bank, the Virtual Learning Environment (VLE).

Full details on the module together with information on assessment and feedback can be found here <https://open.schumachercollege.org.uk/course/view.php?id=166>

Late Work/Extenuating Circumstances

If your participation in an examination or assessment has been affected by an extenuating circumstance, then you can ask the University to take this into consideration. You can submit a claim for extenuating circumstances to cover late submission of work, non-submission of work or non-attendance at a time specific assessment, such as an examination, test presentation or performance, or field class.

Information regarding the Extenuating Circumstances policy and how and where to submit Extenuating Circumstance Claims are available here: <https://www.plymouth.ac.uk/student-life/your-studies/essential-information/exams/exam-rules-and-regulations/extenuating-circumstances>

Where there are no valid extenuating circumstances, the following regulations will automatically apply:

- Work submitted after the deadline date/time but within 24 hours of it, will be capped at the pass mark 50%
- Work submitted 24 hours after the deadline will receive a mark of zero.

Students must notify the programme & module leader of any extenuating circumstances as soon as possible.

Sources of Guidance and Support

In the intimate context of Schumacher College where class sizes are small, opportunities for conversations and informal tutorials with staff happen on a daily basis both within and beyond the classroom. In addition, a formal 45-minute tutorial is provided in the study week at the end of each module.

Referencing Protocols and Academic Offences

When writing a report or an essay you are expected to fully reference the materials you have used. The report or essay should be your own work, in your own words.

Plagiarism is an offence under the University regulations on examination and assessment offences. It is important that you familiarise yourself with what constitutes plagiarism, and academic offences. Further information can be found:

<https://www.plymouth.ac.uk/student-life/your-studies/essential-information/regulations/plagiarism>

And <https://www.plymouth.ac.uk/student-life/your-studies/essential-information/exams/exam-rules-and-regulations/examination-offences>

Reading List; Recommended Texts/Support Materials

Key resource list

- Walker B. And Salt D. (2006) *Resilience Thinking*. Island Press, Washington DC
- Berkes F., Colding J. and Folke C. (2008) *Navigating Social-Ecological Systems – Building Resilience for Complexity and change*, Cambridge University Press.
- Gunderson L.H. and Holling C.S. (2002) *Panarchy: Understanding Transformations in Human and Natural Systems*. Island Press, Washington DC
- Stern N. (2006) *Review on the Economics of Climate Change*, [on-line]
http://www.hm-treasury.gov.uk/sternreview_index.htm
- Heinberg R. And Lerch D. (eds) (2010) *The Post Carbon Reader: Managing the 21st Century Crises*. Chs 1,2,3,6 and 15. Watershed Media, California.
- Capra f. (1997) *The Web of Life*, Flamingo, London
- Harding S.P, (2009) *Animate Earth: Science, Intuition and Gaia*
- Goodwin B. (2007) *Nature's Due: Healing Our Fragmented Culture*, Floris Edinburgh
- Lovelock J. (2000) *Gaia: The Practical Science of Planetary Medicine*, Gaia Books.
- Kauffman S. (1993) *The Origins of Order*. Oxford University Press.
- Meadows D.H. (1997) *Places to Intervene in a System*. Whole Earth,
- Arthur W.B. (1999) 'Complexity and the Economy'. *Science* 284: 107-109.
- Omerod P (1998) *Butterfly Economics*. Faber and Faber, London.
- Lent A. and Lockwood M (2010) *Creative Destruction: Placing Innovation at the Heart of Progressive Economics*, IPPR, London

Beinhocker E. (2007) *The Origin of Wealth – Evolution, Complexity and the Radical Re-Making of Economics*, Random House, London
Richardson J et al (2007) *Using Science to Create a Better Place*. EA, Bristol.
www.worldmapper.org Ecological footprints of resource use
www.teebweb.org/ The Economics of Ecosystems and Biodiversity
www.nature.com/news/specials/planetaryboundaries Planetary Boundaries
www.oneplanetliving.org WWF One Planet Living within Earth System Boundaries
<http://www.copenhagendiagnosis.org/> Synthesis of policy relevant climate science
www.lse.ac.uk/complexity Socio-economic applications of complexity science

Module Feedback

We value what our students say: you share your feedback we act upon it. Part of the feedback process includes Module Evaluation. A link to the form and details of where to submit can be found here:

<https://open.schumachercollege.org.uk/course/view.php?id=179>