Module Title: **Adaptation and Sustainability Concepts and Planning**	**Module Code: EV7102** **Level: 7** **Credit: 30** **ECTS credit: 15**	**Module Leader**: Tim Coleridge **Additional tutors:** Alan Owen Bryce Gilroy-Scott Frances Hill Jane Fisher Louise Halestrap Ruth Stevenson Siobhan Maderson Saskia Pagella

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded combinations:** None

Location of delivery: CAT, DL

The main aims of the module are to enable the student to:

Establish the overarching concepts and theoretical grounding in sustainability and adaptation needed for the programme.

Establish baseline study skills competence and scientific literacy.

Contextualize sustainability and transformational adaptation in view of current environmental changes.

Appreciate the interconnectedness of the factors involved and make informed decisions despite uncertainties.

Discern the wider implications of transformational adaptation on buildings, cities and social structures, food security, water security and land use, trade, resource management, energy provision, governance, health and economic systems through a critical exploration of the primary considerations related to sustainability and environmental change.

Form a thorough understanding of adaptation transformation planning through facilitated self-reflective practical team exercises.

Main topics of study:

- Environmental change and adaptation needed for climatic changes and weather extremes.
- Energy provision.
- Built environment adaptation possibilities (new build & renovation).
- Ecosystem services and biodiversity enhancement.
- Atmospheric carbon reduction.
- Transformational adaptation (vulnerability, risk, resilience and adaptive capacity).
- Health and well-being implications of environmental change.
- Water security and waste.
- Food security.
- Materials (Buildings and Infrastructure).
- Economic fundamentals and non growth economic systems.
- Transportation.
- Land use.
- Population growth and migration implications for transformational adaptation and sustainability.
- Sustainable Cities.
- Systems Thinking.
- Behaviour Change.

Learning Outcomes for the module

At the end of this module, students will be able to:

Knowledge

1. Form a synthesis of knowledge related to the current discourse around transformation adaptation and mitigation strategies, vulnerability, adaptive capacity, ecosystem services and resilience-building in relation to current environmental change;

Thinking skills

2. Critically examine the implications of transformational adaptation to environmental change in the wider context of sustainability, equity and well-being provision, including their interconnectedness and numerous interactions;

Subject-based practical skills

3. Develop a deep understanding of the vital features that go into creating a transformation adaptation plan;

4. Evaluate the ethical dilemmas when problem-solving and decision-making in relation to sustainability and environmental change;

Skills for life and work

5. Effectively communicate to both peers and a wider audience;

6. Reflect critically on learning experiences in order to inform self-development and confidence.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

The factual content of the module is taught through lectures, seminars, practical workshops, presentations, tutorials, and a scenario-building exercise, and throughout this process an active exchange of views and opinions is encouraged.

Both theoretical and practical aspects are covered.

There is a formative learning element to the module to allow the students to receive critical feedback on their work without the pressure of marked assessment.

For distance learning (DL) students, learning will be supported through Internet-based lectures (of the on-site lectures), practical exercises, seminars and tutorials.

All students will have access to Moodle discussion boards and regular Skype seminars, where they can meet with peers and a tutor to discuss any academic issue.

Lectures on-site and through DL highlight key concepts, models and frameworks, and integrate additional resources (such as journal articles). They encourage deep learning through the use of self-assessment questions which encourage students to engage with the topic, which assists understanding of new topics and skills.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated:**
1. Critique Review (3,000 words max.)	**(50%)**	**1,2,5,6**
2. Adaptation Report (3,000 words max.)	**(50%)**	**1,2,3,4,5,6**

Reading and resources for the module:

[Also refer to the other modules reading lists as this module introduces the subject areas of all the modules in the MSc suite.]

Core

Pelling M. (2011) *Adaptation to Climate Change, From resilience to transformation*; Routledge, Abingdon. (*)

Recommended

Adger, W.N., Lorenzoni I., and O'Brien K.L., (2010) *Adapting to Climate Change, Thresholds, Values, Governance*, Cambridge University Press, Cambridge.

Adger, W.N., Paavola J., Huq S., and Mace, M.J., (2005) *Fairness in Adaptation to Climate Change*, MIT Press, Cambridge MA.

Castree, N., Hulme, M. and Proctor, J. D. (2018) *Companion to Environmental Studies*. Routledge.

Ensor J. and Berger R. (2009), *Understanding Climate Change Adaptation, Lessons from community-based approaches*, Practical Action Publishing, Rugby.

Lonsdale, K., Pringle, P. & Turner, B. (2015). *Transformative adaptation: what it is, why it matters & what is needed.* UK Climate Impacts Programme, University of Oxford, Oxford, UK

Roaf, S. (2009) *Adapting buildings and cities for climate change : a 21st century survival guide.* 2nd ed. Oxford: Elsevier. (*)

Schipper E.L.F., and Burton I., editors. (2008), *The Earthscan Reader on Adaptation to Climate Change*, Earthscan, London.

Further relevant journals, websites and other relevant resources will be provided within reading materials that are made available for the module.

(*) Available as an e-book

Indicative learning and teaching time **(10 hrs per credit):**	**Activity**
1. Student/tutor interaction, some of which may be online:	Activity Lectures, Seminars, Tutorials, Presentations, Practical 65 hours

2. Student learning time:	Activity Seminar reading and preparation, Assignment preparation, Background reading, On-line research activities. 235 hours
Total hours (1 and 2):	300 hours