

**COURSE SPECIFICATION DOCUMENT**

<b>Academic School / Department:</b>	Science, Innovation & Technology
<b>Programme:</b>	Liberal Arts
<b>FHEQ Level:</b>	4
<b>Course Title:</b>	Earth System Science
<b>Course Code:</b>	ENVR 4101
<b>Total Hours:</b>	160 (Lev 3-5) (4 US Credit)
Timetabled Hours:	45
Guided Learning Hours:	15
Independent Learning Hours:	100
<b>Credit</b>	16 UK CATS credits 8 ECTS credits 4 US credits

**Course Description:**

This course introduces the major concepts studied in Earth System Science, addressing the Earth's origins and evolution as an active planet within the solar system. The fundamental processes and interrelationships between the atmosphere, oceans, biosphere and lithosphere are investigated to serve as a basis for understanding natural systems, particularly near or at the Earth's surface, and the ways in which human activities impact those systems. There is mounting concern about global warming, biodiversity, energy and sustainable development, all of which if not governed poses a threat to the delicate balance of the Earth system. Thus the need to understand the Earth as an interrelated system is more so than ever before.

**Prerequisites:**

None

**Aims and Objectives:**

The course looks at examples of human impact on natural systems such as coasts, rivers, ecosystems and global climate and the attempts at their management. It also examines plate tectonics, earthquakes, volcanoes and tsunamis, which as yet are beyond human control. Earth - the 'Blue planet' - is the only planet in the solar system to support life, so it is essential that we preserve it for future generations.

**Programme Outcomes:**

AI, BI, CI, DI

A detailed list of the programme outcomes are found in the Programme Specification. This is located at the archive maintained by Registry and found at:

<https://www.richmond.ac.uk/programme-and-course-specifications/>

**Learning Outcomes:**

By the end of this course, successful students should be able to:

- Identify and describe the main processes that underlie the functioning and the interaction of the natural systems of the Earth.
- Identify how these natural systems impact the human sphere, and vice versa.
- Demonstrate and develop the knowledge thus obtained by solving assignments, presenting topics in class, and through in-class discussions.
- Propose ideas and solutions for solving environmental issues.

**Indicative Content:**

- Oceans
- Atmospheric processes, Climate Patterns, Climate Change
- Weathering & Soil
- Coasts, Rivers
- Drylands
- Glaciers, Permafrost
- Biomes
- Ecological processes
- Environmental Change
- Monitoring and management

**Assessment:**

This course conforms to the University Assessment Norms approved at Academic Board and located at: <https://www.richmond.ac.uk/university-policies/>

**Teaching Methodology:**

This course will be delivered face to face through a combination of lectures and interactive sessions. In addition to classroom activities, there are guided learning elements that are tutor led and arranged through Blackboard. These activities can be asynchronous online sessions, flipped classrooms, set readings with discussion boards or set guest lectures for example. Set activities are monitored by the instructor to ascertain student engagement. Students are encouraged to prepare for class and to play an active part, to raise questions, following-up ideas and interact with a wide range of provided material.

**Indicative Text(s):**

Christopherson, R.W. and Birkeland, G. H. *Geosystems: An Introduction to Physical Geography*. Any edition. Prentice Hall.

Holden, J. *An Introduction to Physical Geography and the Environment*. Any edition. Harlow: Pearson

Miller, G.T. and Spoolman, S.E. *Living in the Environment*. Any international edition. Brooks/Cole.

**Journals**

*Geo: Geography and Environment*. Available at: <https://rgs-ibg.onlinelibrary.wiley.com/journal/20544049> (Accessed: November 2024).

**Websites**

Annenberg Learner. Available at: <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/> (Accessed: November 2024).

See syllabus for complete reading list.

**Change Log for this CSD:**

Nature of Change	Date Approved & Approval Body (School or AB)	Change Actioned by Registry Services
First edition	Nov 2024	