

COURSE OUTLINE

(1) General

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| School: | Social Sciences | | |
| Academic Unit: | Geography | | |
| Level of studies | Postgraduate | | |
| Course Code: | GEO 483 | Semester: | H |
| Course Title: | Aegean Geography: Environment and Threats | | |
| Independent Teaching Activities | Weekly Teaching Hours | Credits | |
| Lecture | 3 | | |
| | <i>Course total</i> | 5 | |
| Course Type: | Optional | | |
| Prerequisite Courses: | None | | |
| Language of Instruction and Examinations | English | | |
| Is the course offered to Erasmus students: | | | |
| Course Website (Url): | https://geography.aegean.gr/geoinformatics/index_en.php?content=8&lesson=483 | | |

(2) Learning Outcomes

Learning Outcomes

Effects of global environmental change and impacts on nature and humans.

Mechanisms and processes that trigger the global environmental crisis.

Concepts of climate change and its impacts on the natural environment.

Causes of a natural disaster and assessing its intensity, distribution and consequences.

Use of new technologies and methods in geo-informatics for managing natural hazards, and assessing and restoring the consequences they cause.

General Competences

1. Search for, analysis and synthesis of data and information, with the use of the necessary technology
2. Adapting to new situations
3. Working in an interdisciplinary environment
4. Respect for the natural environment

- 5. Criticism and self-criticism
- 6. Production of free, creative and inductive thinking

(3) Syllabus

The course explores the influence of the natural environmental processes that can pose risks and cause disasters in nature and in human society. Geological processes (e.g. earthquakes, volcanic eruptions, landslides, tidal waves), atmospheric processes (e.g. tropical cyclones, tornadoes, extreme rainfall, floods, droughts), changes in global biodiversity (local and global extinctions, biological invasions, redistribution of organisms and communities), in relation to climate change and related impacts (e.g. epidemic diseases, wildfires). It is envisaged that global climate change will lead to a changing geography of natural hazards and vulnerable populations. The course will also address problems and actions for reducing the vulnerability of systems through geographic risk assessment and management methods (e.g. crisis and risk management, disaster management information systems, new technologies). Finally, operational emergency response is discussed (e.g. prevention planning, operational organization, impact management, response and disaster recovery, socio-economic systems, civil protection).

(4) Teaching and Learning Methods - Evaluation

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| Delivery: | Face to face. | |
| Use of Information and Communication Technology: | Technologies and methods of geo-informatics for management, assessment and rehabilitation of environmental risks. | |
| Teaching Methods: | Activity | Semester workload |
| | Lecture | 36 |
| | Fieldwork | 8 |
| | Project | 16 |
| | Non-supervised study | 87 |
| | Performance evaluation/Exams | 3 |
| | <i>Course total</i> | 150 |

Student Performance Evaluation

(5) Attached Bibliography

Abbott P.L. 2012. Natural Disasters, 8th edition The McGraw-Hill Companies, Inc. 541 pp.

Alexander D. 1993. Natural Disasters. Chapman & Hall, New York (digital printing 2004, Routledge, London).

Bryant E.A. 2005. Natural Hazards, 2nd ed. Cambridge University Press, Cambridge.

CBD. 2007. Biodiversity and Climate Change. 48 pp. online booklet [<https://www.cbd.int/doc/bioday/2007/ibd-2007-booklet-01-en.pdf>]

Coenraads R. 2006. Natural Disasters and How We Cope. Millennium House, Australia.

European Environment Agency 2010. Mapping the impacts of natural hazards and technological accidents in Europe. An overview of the last decade. EEA Technical report No 13/2010 ISSN 1725-2237 [Available online]

IPCC 2013. Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp, doi:10.1017/CBO9781107415324.

IPCC 2014. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Summaries, Frequently Asked Questions, and Cross-Chapter Boxes. A Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. World Meteorological Organization, Geneva, Switzerland, 190 pp.

Kaloveloni, A., T. Tscheulin, A. Vujić, S. Radenković, and T. Petanidou 2015. Winners and losers of climate change for the genus *Merodon* (Diptera: Syrphidae) across the Balkan Peninsula. *Ecological Modelling* 313:201-211.

Smith, K and Petley. DN 2009. Environmental hazards; assessing risk and reducing disaster. Routledge, Wolverhampton, 5th edn. 383 pp.

Takkis, K., Tscheulin, T., Tsalkatis, P., and T. Petanidou 2015. Climate change reduces nectar secretion in two common Mediterranean plants. *AoB Plants* 7:plv111

Trenberth K.E, Fasullo J. T. and T.G. Shepherd 2015. Attribution of climate extreme events. *Nature Climate Change* volume 5, pages 725-730.

<https://www.nature.com/nclimate/>