



UNIVERSIDADE
CATOLICA
PORTUGUESA



Course: Humanity's Biggest Challenges

SDG #14 (Life Below Water)

Syllabus



Overall Objective

Provide students with an understanding of the different dimensions of human life (economic, social, environment, legal, medical) impacted by the challenges to deliver the goals of SDG #14

Metodologies

- Interactive exhibition with student participation
- Group and individual work of research and problem solving
- Participation of external guests – inspiration
- Case discussion

Others

- Elective course
- Second Semester 2022/23
- 5 ECTS
- Lecture from eight different Professors (from different Schools)
- Taught in English
- Online classes
- Ten classes (three hours each): 15/3; 22/3; 29/3; 12/4; 19/4; 26/4; 3/5; 17/5; 24/5; 31/5.

Topics and Content

Week 1 (Context) Filipa Pires de Almeida - 15th March

Topic: Historic context, Sustainable Development and the SDGs, the SDG #14

- Why are the SDGs so important as a universal language for prosperity?
- 2030 Agenda: SDG per SDG
- Systemic approach of the SDGs: multilevel, multisector, interdisciplinary
- SDG# 14: why is it important?
- The role of organizations and citizens in the SDGs and the SDG#14

Objectives:

- Understand why the SDGs are important as a universal language and a strategy for the future of humanity
- Understand the challenge exposed by the SDG#14 with multiple lenses: the public, private and civil sector
- Inspire for action

Week 2 Jorge Santos Alves - 22nd March

Topic: Portugal and the Sea

- A Sea of Seas
- A Sea of Plants & Animals
- A Sea of Cultures & Languages

Objectives

- To know and understand the historical presence of Portugal in the different oceanic spaces and their geopolitical, economic, and cultural dimensions.
- To know and understand the voyages of plants and animals between continental spaces, by sea, and their echoes today.
- To know and understand the cultural contacts (made of dialogue and conflict) potentiated by the sea.
- To know the Portuguese multiple language loans to/from various languages in different maritime spaces and historical times.

Selected Bibliography

Buchet, C., & Le Bouëdec, G. (eds.). (2017). The Sea in History - The Early Modern World. Boydell & Brewer. doi:10.1017/9781782049098.

Buchet, C., & Rodger, N. (eds.). (2017). The Sea in History - The Modern World. Boydell & Brewer. doi:10.1017/9781782049111.

Cohen, Margaret (ed.). (2021). A Cultural History of the Sea. 6 vols., Bloomsbury Academic.
Lincoln, Paine. (2013). The Sea and Civilization. A Maritime History of the World. Knopf.

Week 3 Sonia Ribeiro - 29th March

Topic: The strategic dimensions of the Ocean

- The 3 timeless strategic dimensions of the Ocean: science, economics and (geo)politics.
- The centrality of the Ocean at the end of the 1st quarter of the 21st century: the multidimensionality of human presence in the ocean.
- The UNCLOS: 40 years later, implications in national and international politics.
- The next 10 years: critical paths and structuring challenges for the ocean.

Objectives:

- Understand the strategic dimensions of the Ocean and its intrinsic interconnection.
- To know and understand the causes and developments that have occurred in the last 4 decades that have led to a renewed interest in the ocean in its multiple dimensions.
- To know and understand the essential points of the UNCLOS in its relationship with the strategic interest that the Ocean (re)acquired in recent decades.
- To know and understand the evolutionary process of national and international policy facing the ocean in recent decades.
- To know and understand the scientific, technological and economic dynamics that foster strategic competition in the oceans and will influence international policy in the coming years.

Selected bibliography

- COM(2007) 575 final - An Integrated Maritime Policy for the European Union, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, Brussels, 10.10.2007
- COM(2014) 254 final/2 - Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, Brussels, 13.5.2014
- MATIAS, Nuno (2005) - O Mar: Um Oceano de oportunidades para Portugal, Edições culturais da Marinha, Caderno Naval nº 13, Lisboa, 2005

Week 4 Ana Gomes – 12th April

Topic: Ocean, biodiversity and biotechnology

- Marine biodiversity: microorganisms, biomaterials and bioactives
- Oceans and human health: nutrition, pharmaceutical, biomedical and dermocosmetic applications
- Contribution of biotechnology to Ocean sustainability: key trends

Objectives:

- To know and understand the wide Ocean diversity as an untapped source of unique microorganisms promoters of different activities and products, of efficient biomaterials for biomedical applications and of multifunctional bioactive compounds.
- To know and understand the bridges between the Ocean and human health via application of its different resources in promotion of health and well-being.
- To understand the role of biotechnology in using and protecting marine biomass more efficiently as well as marine biorefinery in support of societal challenges.
- To identify promising opportunities and challenges for sustainable innovation and development.

Selected bibliography

- Freitas, A.C., Rodrigues, D., Pereira L., Duarte, A.C., Gomes, A.M.P. In press Chapter 18. Seaweed bioactives: nutraceutical and potential functional food applications. In Seaweed Bioactives: Health Benefits and Potential Applications, CRC Press, Taylor & Francis, ISBN 978-1-4987-9698-9
- Freitas AC, Rodrigues D, Carvalho AC, Panteleitchouk T, Pereira L, Gomes AM, Duarte AC. 2015. Chapter 42 - Marine functional foods. In Springer Handbook of Marine Biotechnology. Trends and Industrial Applications, Kim Se-Kwon (Ed). Springer. Hardback/Paper version: ISBN 978-3-642-53970-1.
- Timmis, K. et al. 2017. The contribution of microbial biotechnology to sustainable development goals. Microbial Biotechnology (2017) 10(5), 984–987.

Week 5 (Session with External organisations I) 19th April

- External organisations focusing their work on the challenges of the SDG #14 will be invited to share their experiences and inspire students or action

Week 6 Raquel Campos/Filipa Lancastre - 26th April

Topic: The Blue Economy – Blue entrepreneurship and partnerships for the Ocean

- The Ocean as a source of resources and livelihoods
- The urgency of the Blue entrepreneurship
- Partnerships for the Ocean protection and appreciation
- The specific problem of plastics

Objectives:

- To understand the relevance of the Ocean as a source of resources and livelihoods
- To understand the importance of Blue entrepreneurship in accelerating the Ocean protection and appreciation
- To understand the relevance and challenges of cross-sector partnerships for the Ocean protection and appreciation
- To understand the specific problem of plastics through a case study perspective

Bibliography

Clarke, A. and A. Crane. (2018). Cross-Sector Partnerships for Systemic Change: Systematized Literature Review and Agenda for Further Research. *Journal of Business Ethics* 150, pp. 303–313.

Dijkstra, H., Van Beukering, P., and R. Brouwer (2022). Marine plastic entrepreneurship; Exploring drivers, barriers and value creation in the blue economy. *Sustainable Technology and Entrepreneurship*, vol. 1 issue 3.

Week 7 (Health) Teresa Nazareth – 3rd May

Week 8 (Session with External organisations II) 17th May

- External organisations focusing their work on the challenges of the SDG #14 will be invited to share their experiences and inspire students or action

Week 9 Armando Rocha – 24th May

Topic: The legal protection of the marine environment

- The context of marine environmental legal regulation
- The sources of marine environmental pollution and their legal regulation
- The regulation of marine biological diversity

Objectives:

- To understand the challenges to the protection and preservation of the marine environment through legal means
- To understand the rationale of the legal instruments aimed at targeting marine pollution
- To understand the rationale of the legal instruments aimed at preserving marine biological diversity

Selected bibliography

Rocha, Armando (2022). “Ambiente Marinho”. In C. Amado Gomes & H. Oliveira, *Tratado de Direito do Ambiente*. Lisboa: AAFDL, 2022

Week 10 (Group Assignment presentations) 31st May

- Groups to present their final assignments

Evaluation

The evaluation will consist of two components:

- Individual Online Quizzes in the end of each class (15 quizzes in total) and a Master Quizz on the last session. 40% weight
- Group Work about an organisation to be selected from a pool proposed by the teachers, that will be developed throughout the various classes, with two main outputs: a 4-page report, and 8 slides that will support the final presentation in the last class. The groups to be constituted will be composed of students from the various faculties and "peer evaluation" will be a component of the award of the final grade. 60% weight