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**Ano Letivo** 2023-24

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**Unidade Curricular** PERTURBAÇÃO ANTRÓPICA DOS SISTEMAS MARINHOS

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**Cursos** SISTEMAS MARINHOS E COSTEIROS (2.º Ciclo)

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**Unidade Orgânica** Faculdade de Ciências e Tecnologia

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**Código da Unidade Curricular** 17401004

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**Área Científica** CIÊNCIAS DO AMBIENTE

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**Sigla**

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**Código CNAEF (3 dígitos)** 443

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**Contributo para os Objetivos de Desenvolvimento Sustentável - ODS (Indicar até 3 objetivos)** 13, 14

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**Línguas de Aprendizagem** Inglês

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**Modalidade de ensino**

Presencial

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**Docente Responsável**

Alice Newton

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| DOCENTE      | TIPO DE AULA | TURMAS      | TOTAL HORAS DE CONTACTO (*) |
|--------------|--------------|-------------|-----------------------------|
| Alice Newton | S; T; TP     | T1; TP1; S1 | 15T; 8TP; 1S                |

\* Para turmas lecionadas conjuntamente, apenas é contabilizada a carga horária de uma delas.

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| ANO | PERÍODO DE FUNCIONAMENTO* | HORAS DE CONTACTO | HORAS TOTAIS DE TRABALHO | ECTS |
|-----|---------------------------|-------------------|--------------------------|------|
|     |                           |                   | 0                        | 0    |

\* A-Anual;S-Semestral;Q-Quadrimestral;T-Trimestral

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**Precedências**

Sem precedências

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**Conhecimentos Prévios recomendados**

Seria desejável que os estudantes já tenham tido algumas noções de poluição marinha e de introdução à ecotoxicologia

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**Objetivos de aprendizagem (conhecimentos, aptidões e competências)**

Esta unidade curricular tem como principal objetivo fornecer uma visão sistémica das principais perturbações antrópicas provocadas no ambiente marinho. Para atingir este objetivo principal esta unidade pretende i) conhecer os efeitos que as alterações globais podem vir a ter ii) perceber os conceitos das diretivas relevantes iii) conhecer os efeitos das atividades humanas tais como sobre-exploração, contaminação e poluição; iv) desenvolver o espírito crítico com base em conhecimentos científicos adquiridos ao longo da unidade curricular.

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### Conteúdos programáticos

1. Mudança Global e as principais variáveis ambientais marinhas. 2. Bom estado ambiental (MSFD) e bom estado ecológico (WFD) 3. Avaliação da saúde dos oceanos 4. Contaminantes e poluentes. 5. Superexploração

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### Metodologias de ensino (avaliação incluída)

Os estudantes desenvolvem um tema da sua escolha (Problem Based Learning) e apresentam um poster e um seminário.

Os critérios de avaliação são os seguintes

Classificação do poster 50%

Classificação do seminário 50%

Classificação final= 0,50 x classificação do seminário + 0,50 x classificação do poster

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### Bibliografia principal

United Nations (2022). World Ocean Assessment. Academic Press New York

Elliott, M., Burdon, D., Atkins, J.P., Borja, A., Cormier, R., De Jonge, V.N. and Turner, R.K., 2017. ?And DPSIR begat DAPSI (W) R (M)!?-a unifying framework for marine environmental management. *Marine pollution bulletin*, 118 (1-2), pp.27-40.

Halpern, B.S., 2020. Building on a decade of the Ocean Health Index. *One Earth*, 2 (1), pp.30-33.

EU Marine Strategy Framework Directive

EU Water Framework Directive

THE CONTRIBUTION OF THE UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT TO THE ACHIEVEMENT OF THE 2030 AGENDA

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**Academic Year** 2023-24

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**Course unit** ANTHROPIC DISTURBANCES OF MARINE SYSTEMS

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**Courses** MARINE AND COASTAL SYSTEMS (2nd cycle)  
Common Branch

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**Faculty / School** FACULTY OF SCIENCES AND TECHNOLOGY

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**Main Scientific Area**

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**Acronym**

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**CNAEF code (3 digits)** 443

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**Contribution to Sustainable Development Goals - SGD** 13, 14  
(Designate up to 3 objectives)

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**Language of instruction** English

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**Teaching/Learning modality** Presential

**Coordinating teacher** Alice Newton

| Teaching staff | Type     | Classes     | Hours (*)    |
|----------------|----------|-------------|--------------|
| Alice Newton   | S; T; TP | T1; TP1; S1 | 15T; 8TP; 1S |

\* For classes taught jointly, it is only accounted the workload of one.

**Contact hours**

| T | TP | PL | TC | S | E | OT | O | Total |
|---|----|----|----|---|---|----|---|-------|
| 0 | 0  | 0  | 0  | 0 | 0 | 0  | 0 | 0     |

T - Theoretical; TP - Theoretical and practical ; PL - Practical and laboratorial; TC - Field Work; S - Seminar; E - Training; OT - Tutorial; O - Other

**Pre-requisites**

no pre-requisites

**Prior knowledge and skills**

It would be desirable that students have already had some notions of marine pollution and introduction to ecotoxicology

**The students intended learning outcomes (knowledge, skills and competences)**

The main objective is to provide a systemic view of the main anthropic disturbances caused in the marine environment. To achieve this, students learn to i) understand the effects that global changes may have ii) understand the concepts of the relevant directives iii) understand the effects of human activities such as over-exploitation, contamination and pollution; iv) develop critical thinking based on scientific knowledge acquired throughout the curricular unit. A social-ecological approach is used to introduce the main stressors in the marine environment and their effects, including changes to the marine environment, over-exploitation main pollutants and contaminants. Overall, the syllabus and its organization aim to promote students' autonomy and critical spirit and the integration of theoretical and theoretical-practical concepts, facilitating the achievement of the learning objectives.

**Syllabus**

1. Global Change and the main marine environmental variables.
2. Good Environmental Status (MSFD) and Good Ecological Status (WFD)
3. Assessing Ocean Health
4. Contaminants and pollutants.
5. Over-exploitation

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### Teaching methodologies (including evaluation)

Students develop a topic of their choice (Problem Based Learning) and present a poster and a seminar.

The evaluation criteria are as follows

Poster rating 50%

Seminar rating 50%

Final classification = 0.50 x seminar classification + 0.50 x poster classification

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### Main Bibliography

United Nations (2022). World Ocean Assessment. Academic Press New York

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