
Ano Letivo 2022-23

Unidade Curricular APPLIED PRACTICAL FIELD AND LABORATORY TRAINING IN ECOHYDROLOGY

Cursos ECOHIDROLOGIA APLICADA - Erasmus Mundus (2.º Ciclo)

Unidade Orgânica Faculdade de Ciências e Tecnologia

Código da Unidade Curricular 19311000

Área Científica CIÊNCIAS DO AMBIENTE

Sigla

Código CNAEF (3 dígitos) 420

Contributo para os Objetivos de Desenvolvimento Sustentável - ODS (Indicar até 3 objetivos) 6,13,14

Línguas de Aprendizagem inglês

Modalidade de ensino

presencial / remoto

Docente Responsável

Luís Manuel Zambujal Chícharo

DOCENTE	TIPO DE AULA	TURMAS	TOTAL HORAS DE CONTACTO (*)
Luís Manuel Zambujal Chícharo	TC; OT; PL; S; T; TP	T1; TP1; PL1; C1; S1; OT1	4T; 8TP; 22PL; 30TC; 12S; 8OT

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

ANO	PERÍODO DE FUNCIONAMENTO*	HORAS DE CONTACTO	HORAS TOTAIS DE TRABALHO	ECTS
1º	S1	4T; 8TP; 22PL; 30TC; 12S; 8OT	286	11

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

Precedências

Sem precedências

Conhecimentos Prévios recomendados

biologia, ecologia

Objetivos de aprendizagem (conhecimentos, aptidões e competências)

Students will learn:

To select and apply field sampling techniques

To apply field solutions for degraded ecosystems

To process and analyse samples in laboratory

To treat and analyse data

To develop ecohydrologic practical solutions for lakes, rivers and estuaries

Conteúdos programáticos

The course will consist of three parts:

PART 1.1: COASTAL ECOHYDROLOGY training course with techniques of marine and environmental intervention.

PART 1.2: FRESHWATER ECOHYDROLOGY & URBAN and RURAL DEMOSITES: training with key aspects of remediation technologies using for urban and rural ecosystem restoration (Phytotechnologies and phytoremediation course) and novel methods of bioassessment and river restoration (Fish-based assessment and River restoration course). Urban EH demosites: Lodz-Sokolowka River-POLAND (UNESCO demosite)

PART 2:

Rural EH demosites: Sulejow reservoir-Pilica River-POLAND (UNESCO demosite; LIFE EKOROB - best of the 2016 LIFE projects).

coastal ecohydrology - field trip to the Baltic coast and field work at the mouth of the Vistula river.

PART 3:: Student's individual work on reports, essays and preparation for exams for PART 1 & 2.

Metodologias de ensino (avaliação incluída)

The course will be based on practical laboratory classes and field work. Seminars and tutorial classes will be taught to support the practical projects and experiments. Students will be asked to develop a practical project they will present and will serve for evaluation of the course.

Evaluation:

1. A group work written with individual presentation on practical project
 2. A final written exam if group work evaluation is below 10/20 points
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Bibliografia principal

Zalewski M, Wagner-Lotkowska I. & Robarts D. R. (eds). 2004. Integrated Watershed Management & Ecohydrology and Phytotechnology-Manual. UNESCO IHP, UNEP IETC.246pp.;http://www.unep.or.jp/ietc/Publications/Water_Sanitation/integrated_watershed_mgmt_manual

Wolanski, E., L. Chicharo, M.A. Chicharo (2008) Estuarine Ecohydrology. In Sven Erik Jørgensen and Brian D. Fath (Editor-in-Chief), Ecological Engineering. Vol. [2] of Encyclopedia of Ecology, 5 vols. pp. [1413-1422] Oxford: Elsevier.

Chicharo, L. Wagner, I., Chicharo, M. A Lapsinka, M. Zalewski, M. (2009) Practical experiments guide for Ecohydrology (Eds.Chicharo et al.). UNESCO Manual ISBN: 978-989-20-1702-0. Faro, 121 pp

Academic Year 2022-23

Course unit

Courses Applied Ecohydrology - Erasmus Mundus (2.º Cycle)

Faculty / School FACULTY OF SCIENCES AND TECHNOLOGY

Main Scientific Area

Acronym

CNAEF code (3 digits) 420

Contribution to Sustainable Development Goals - SGD (Designate up to 3 objectives) 6,13,14

Language of instruction english

Teaching/Learning modality presential/remote

Coordinating teacher Luís Manuel Zambujal Chícharo

Teaching staff	Type	Classes	Hours (*)
Luís Manuel Zambujal Chícharo	TC; OT; PL; S; T; TP	T1; TP1; PL1; C1; S1; OT1	4T; 8TP; 22PL; 30TC; 12S; 8OT

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

Contact hours	T	TP	PL	TC	S	E	OT	O	Total
	4	8	22	30	12	0	8	0	286

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

biology, ecology

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

Students will learn:

To select and apply field sampling techniques

To apply field solutions for degraded ecosystems

To process and analyse samples in laboratory

To treat and analyse data

To develop ecohydrologic practical solutions for lakes, rivers and estuaries

Syllabus

The course will consist of three parts:

PART 1.1: COASTAL ECOHYDROLOGY training course with techniques of marine and environmental intervention.

PART 1.2: FRESHWATER ECOHYDROLOGY & URBAN and RURAL DEMOSITES: training with key aspects of remediation technologies using for urban and rural ecosystem restoration (Phytotechnologies and phytoremediation course) and novel methods of bioassessment and river restoration (Fish-based assessment and River restoration course). Urban EH demosites: Lodz-Sokolowka River-POLAND (UNESCO demosite)

PART 2:

Rural EH demosites: Sulejow reservoir-Pilica River-POLAND (UNESCO demosite; LIFE EKOROB - best of the 2016 LIFE projects).

coastal ecohydrology - field trip to the Baltic coast and field work at the mouth of the Vistula river.

PART 3:: Student's individual work on reports, essays and preparation for exams for PART 1 & 2.

Teaching methodologies (including evaluation)

The course will be based on practical laboratory classes and field work. Seminars and tutorial classes will be taught to support the practical projects and experiments. Students will be asked to develop a practical project they will present and will serve for evaluation of the course.

Evaluation:

1. A group work written with individual presentation on practical project
 2. A final written exam if group work evaluation is below 10/20 points
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Main Bibliography

Zalewski M, Wagner-Lotkowska I. & Robarts D. R. (eds). 2004. Integrated Watershed Management & Ecohydrology and Phytotechnology-Manual. UNESCO IHP, UNEP IETC.246pp.;http://www.unep.or.jp/ietc/Publications/Water_Sanitation/integrated_watershed_mgmt_manual

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