

<i>Course</i>	Master in Civil Construction			<i>Academic year</i>	2021/2022		
<i>Subject</i>	Hydrology and Water Resources			ECTS	5,0		
<i>Type of course</i>	Compulsory						
<i>Year</i>	1st	<i>Semester</i>	1st	<i>Student Workload:</i>			
<i>Professor(s)</i>	Expert Helena Maria Martins Simão			<i>Total</i>	140	<i>Contact</i>	52,5
<i>Area Coordinator</i>	PhD José Carlos Costa Almeida						

Planned

1. LEARNING OBJECTIVES

Provide understanding of hydrological phenomena and tools for quantification of water resources analysis, availability and inventory of needs and requests of emerging water circulation. Provide basic knowledge that enables design in its hydrologic-hydraulic component.

2. PROGRAMME

Introduction

Hydrological Balance and Hydrological Cycle

Watershed

Hydrological Processes: Precipitation, interception, evaporation and evapotranspiration, Infiltration and Surface Runoff

Soil water and underground drainage

Runoff and Hydrological modeling

Management of water resources

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

The syllabus set allows the students to develop instrumental skills (analysis, synthesis, organization, planning and decision-making, basic computer skills that allow the use of the internet as a communication tool and as a source of information regarding the scope of the study), skills personal (teamwork and interpersonal

relations, critical thinking, ethical commitment) and systemic (autonomous learning, entrepreneurship, initiative and critical in the practical application of theoretical knowledge).

4. MAIN BIBLIOGRAPHY

- [1] Dingman, S. L., 1994 – Physical hydrology. Ed. Macmillan Pub. Co., (*)
- [2] Hipólito, J. R. e Vaz, A. C., 2011 – Hidrologia e Recursos Hídricos. Ed. IST Press
- [3] Lencastre A. e Melo Franco, F., 2003 – Lições de Hidrologia. Ed. Fundação Armando Lencastre, UNL (*)
- [4] Patra, K. C., 2001 – Hydrology and water resources engineering. Ed. Alpha Science International (*)
- [5] Vent e Chow, 1964 – Handbook of applied hydrology. Ed McGraw-Hill
- [6] Wanielista, M., Kersten, R., Eaglin, R., 1997 – Hydrology: Water quantity and quality control. Ed. John Wiley & Sons Inc. (*)

() available on IPG Library*

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

Teaching methodology will focus on student learning. Theoretical concepts taught and will be sustained with practical cases. Practical exercises will be offered to develop and apply the techniques taught. In addition, seminars will be taught.

Continuous assessment will be done through active participation in solving exercises and field work where the proposed concepts are applicable transmitted. This review, with a weight of 5% and 25% (assiduity and practical works), will be completed by the end of the semester with a written test with a weight of 70%.

In any assessment methodologies, for approval, the student must obtain a minimum grade of 10 (range 0-20 points).

Ratings above 16 (range 0-20) will have to be defended in oral examination.

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

To achieve the objectives, the proposed methodology in the curricular unit is based on principles of theoretical and practical training.

The methods and teaching techniques, using the affirmative method through technical lectures, demonstration and group interaction, with the teacher's responsibility focused on reinforcing learning and coordination, to contribute to the development of personal training and skills acquisition techniques taught in the area of fluid mechanics.

7. ATTENDANCE

8. CONTACTS AND OFFICE HOURS

9. OTHERS

Date:

Professor,

Area Coordinator,

(Helena Maria Martins Simão)

(José Carlos Costa de Almeida)