

<b>POLI</b> ESCOLA SUPERIOR TECNOLOGIA GESTÃO <b>TÉCNICO</b> <b>GUARDA</b>	<b>SUBJECT DESCRIPTION</b>	<b>MODELO</b> PED.013.03
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Course	Topographic Engineering					
Subject	General Geodesy					
Academic year	2023-2024	Curricular year	3rd	Study period	1st semester	
Type of subject	Compulsory	Student workload (H)	Total: 182	Contact: 82,5	ECTS	6,5
Professor(s)	PhD Eufémia da Glória Rodrigues Patrício					
<input checked="" type="checkbox"/> Area/Group Coordinator <input type="checkbox"/> Head of Department	(select)	PhD Maria Elisabete Soares				

## PLANNED SUBJECT DESCRIPTION

### 1. LEARNING OBJECTIVES

*Qualify the students of concepts to local and global geodesic reference systems and their application in some areas.*

*Qualify the students to the importance of the reference surfaces for the study of the shape and size of the Earth.*

*The students should know how to make a Leveling Geodesic.*

*Qualify the students for the importance of geodetic monitoring in structures of civil engineering and another one deformations land.*

### 2. PROGRAMME

*General concepts.*

*Reference surfaces.*

*Astronomic coordinates Systems.*

*Geodesic Triangulation.*

*Geodesic levelling.*

*Equipotentials Surfaces.*

*Terrestrial Tides.*

*Adjustment of observations with the Square Least Method.*

*Deformations land Control and Deformations Control in building of civil engineering.*

### 3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

*Students will be able to understand questions related to the shape and dimensions of the Earth and the importance of precision in applying topographical measurements. The general concepts on the various models of Earth used are lectured along with the way they represent a point in the diverse systems of coordinates from model to model. Methods and techniques which allow the student to acquire*

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competences are also lectured so that the future professional can use them to take measurements, specially in the Control of Deformations of a Natural Order and in Civil Engineering Projects and in Geodesic Leveling.

#### **4. MAIN BIBLIOGRAPHY**

*Mandatory*

*Appointments made by the discipline teacher and made available in platform, 2018-2019.*

*Matos, J; Casaca, J; Baio, M.; "Topografia Geral", 2005.*

*ASIN, F.M., " Geodesia e Cartografia Matemática ".*

*Cidália Costa, "Apontamentos sobre Ajustamento de Observações Utilizando o Método dos Mínimos Quadrados", Universidade de Coimbra.*

*Cidália Costa; "Apontamentos sobre Controlo de Deformações em Barragens", Universidade de Coimbra. Geodesie e Astronomie Geodésique, vol.1, 1971.*

*Recommended*

*Sousa Cruz, J.J. " Manual de Topografia ".*

#### **5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)**

*Oral presentation with resource audiovisual ways and with the computer programs appropriates.*

*Availability by e-learning contents.*

*Test theoretic–practical; accomplishment of a practical work with a weight of at least 30%.*

*Practical works count toward the time of examination and examination resource. As an option the student.*

*The first work is to develop the theme "Geodesic Triangulation.". The second work consists in performing a Geodetic Leveling. The third work is the development of the topic "Methods of control of deformations of a Natural Order and in Civil Engineering Projects."*

#### **6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES**

*To reach the objectives of this unit, theoretical and practical lectures with teacher-student interaction and practical laboratory work combine with solving practical cases and using tools for topographic measurement in the field.*

#### **7. ATTENDANCE**

*There are no rules for attendance*

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## 8. CONTACTS AND OFFICE HOURS

*Teacher: Eufémia da Glória R.Patrício*

*email: gpatricio@ipg.pt*

*Office nº 78*

*Office hours: Wednesday 1-11h:30 am 13h:30 pm and Friday 11h:30am 13h:30pm.*

*Subject area coordinator: Maria Elisabete Soares*

*Office nº71*

*Email: esoares@ipg.pt*

## 9. OTHERS

*Be careful in the use of computer equipment.*

## DATE

**4 de outubro de 2023**

## SIGNATURES

*Professor(s), Area/Group Coordinator*

Assinatura na qualidade de (clicar)

(signature)

Assinatura na qualidade de (clicar)

(signature)