

<p>POLI ESCOLA SUPERIOR TECNOLOGIA GESTÃO TÉCNICO GUARDA</p>	<h2>SUBJECT DESCRIPTION</h2>	<p><b>MODELO</b> PED.013.03</p>
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Course	Topographic Engineering					
Subject	Topographic Measures Adjustment					
Academic year	2023/2024	Curricular year	3rd	Study period	1st semester	
Type of subject	Compulsory	Student workload (H)	Total: 154	Contact: 75	ECTS	5,5
Professor(s)	Doctor António Figueiredo Monteiro					
<input checked="" type="checkbox"/> Area/Group Coordinator <input type="checkbox"/> Head of Department	Doctor Maria Elisabete Santos Soares <small>(select)</small>					

## PLANNED SUBJECT DESCRIPTION

### 1. LEARNING OBJECTIVES

Qualify the students for topographic observation errors (distances and angles), adjustment of observations with equal or unequal accuracy.

### 2. PROGRAMME

- *Mathematics and statistics methods to adjustment the observations.*
- *Correct angles measurements.*
- *Observations errors and their adjustments: systematic errors, random or accidental errors.*
- *Probability errors theory.*
- *Measurements statistical analysis*
- *Propagation of errors.*
- *Weight and errors in observations with different accuracy.*
- *Practical application of errors theory measurements.*

### 3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

Through its content, this curricular unit contributes to the overall training of the student as a person and as a future professional in the highly specific area of Topographic Engineering. For this reason, the contents train and prepare the students, making them aware of the need to identify and work with the occurrence of errors in the best way possible. The student will develop both operational and instrumental competence. In the end, the student should be able to participate on multidisciplinary teams to carry out work in his/her area with available technology.

### 4. MAIN BIBLIOGRAPHY

- Cruz, S.; “Erros nas medições”.
- Xerez, C. “Topografia Geral”.

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- Shephard, F.; “Surveying”.
- Casaca J., Matos J. e Baio M.; “Topografia Geral”. Lidel – Edições Técnicas.

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

*Oral and multimedia show exposition. Practical works. Availability of e-learning contents. Test theoretic–practical; accomplishment of a practical work with a weight of at least 25% in the final evaluation.*

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

*To reach the proposed objectives, the methodology of the curricular unit is based on principles of theoretical and practical training as well as practice and laboratory training. The pedagogical methods and techniques during the class sessions are theoretical lectures using audiovisual aids and practice with solving exercises, classes in the field to better understand the methods learned and assignments.*

#### 7. ATTENDANCE

*Mandatory attendance in class performance and presentation of practical work*

#### 8. CONTACTS AND OFFICE HOURS

##### CONTACTS

##### **Professor:**

*Name: António Figueiredo Monteiro*

*Email: [amonteiro@jpg.pt](mailto:amonteiro@jpg.pt)*

*Telef: 271 220 111*

*OFFICE N°: 78*

##### **Area Coordinator:**

*Nome: Eufémia da Glória Rodrigues Patrício*

*Email: [gpatricio@jpg.pt](mailto:gpatricio@jpg.pt)*

*Telef: 271 220 111*

*OFFICE N°: 78*

##### **OFFICE HOURS:**

*- Thursday: 9:00h to 11:00h*

#### 9. OTHERS

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**DATE**

**22 de setembro de 2023**

**SIGNATURES**

*Professor(s), Area/Group Coordinator or Head of Department signatures*

Professor

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(signature)

Area/Group Coordinator

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(signature)