



Universidade do Minho

## Mestrado (Integrado) em Engenharia Telecomunicações e Informática

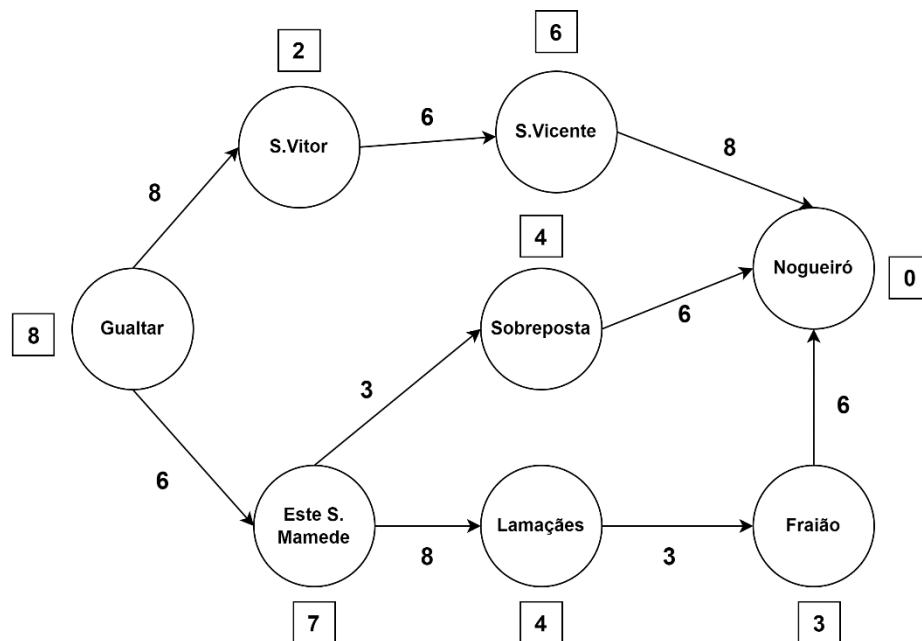
### Inteligência Artificial para as Telecomunicações

## Theoretical-Practical Worksheet No. 2

**Theme:** Informed search algorithms

### Exercise 1

Consider the following graph representing the possible transitions between different parishes in the municipality of Braga, in which the numbers associated with the edges between the parishes represent the costs, and the numbers associated with the parish nodes represent the values of a given heuristic.



Taking into account the graph shown in the previous figure, simulate the execution of the following informed search algorithms, considering the initial state to be the parish of Gualtar and the final/target state to be the parish of Nogueiró.:

- Greedy;
- A\*.
- In a dynamic environment (where changes in flooring, traffic, etc., may occur), what adjustments to the formalisation of the problem should be considered?
- Consider a scenario in which traffic congestion may occur. What changes in formalization, in terms of representing the structure of the problem, should be considered?