



UNIVERSITAT POLITÈCNICA DE CATALUNYA  
BARCELONATECH

Escola Superior d'Enginyeries Industrial,  
Aeroespacial i Audiovisual de Terrassa

# BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING

BACHELOR'S DEGREE THESIS

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## Study of energy efficient manoeuvring strategies for cubesats

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### BUDGET

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# CHAPTER 1

## BUDGET

In this chapter, all the costs related to the project, divided in different groups and including equipment, licenses, human resources and office supplies. Although tangible assets like the electronic equipment depreciate over time, no amortization has been calculated for them, only the price (initial investment necessary to accomplish the project objectives).

### 1.1 Licenses and electronic equipment cost

Here are included the cost of all the equipment and licenses needed for the project's development:

- **Laptop** The laptop used in this thesis for both writing and simulate was bought 2 years ago with a purchase price of 850€.
- **Matlab** A Matlab student license costs 69€ per year, although the one used in this thesis was provided by UPC. Counting approximately 5 months from the start of the thesis, the cost has been estimated as 40% of the license value.
- **Microsoft Office** An annual Microsoft Office license is also priced at 69€. As the Matlab one, this license has been used for 5 months accounting 50% of its cost.
- **LaTeX** Overleaf, the cloud-based LaTeX editor used for the writing of this thesis is free to use.

## 1.2 Staff cost

Human resources associated with the project are only the author's fees, an engineering student who has carried it out and earns 35 €/hour. The duration of this project approaches 600 hours (see Planning).

## 1.3 Office supplies

The costs associated to office supplies taken into account are a notebook, writing materials and a calculator, making roughly 50€.

## 1.4 Total cost

Finally, all the costs can be seen hereunder:

Table 1.1: Total Budget

Concept	Time (h)	Unit Cost (€/h)	Value (€)
<b>Licenses and electronic equipment</b>			
<i>Laptop</i>			850
<i>Matlab</i>			27.6
<i>Microsoft Office</i>			27.6
<b>SUBTOTAL</b>			<b>905.2</b>
<b>Staff</b>			
<i>Engineering college student</i>	600		21 000
<b>SUBTOTAL</b>			<b>21 000</b>
<b>Office supplies</b>			
<i>Calculator</i>			35
<i>Other supplies</i>			15
<b>SUBTOTAL</b>			<b>50</b>
<b>TOTAL</b>			<b>21 955.2</b>