



UNIVERSITAT POLITÈCNICA DE CATALUNYA  
BARCELONATECH

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

## ESEIAAT

### Bachelor's Thesis

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Study of a descent system for atmospheric re-entry  
and landing of space vehicles

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## Budget

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**Director:** Ortega, Enrique

**Degree:** Bachelor's degree in Aerospace Technology Engineering

**Delivery Date:** 27/04/2020

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# Budget

In order to calculate the total cost of the project, three different factors have been taken into account: academic expenses, software licenses and a hypothetical working salary. Regarding the first one, the development of this bachelor's thesis is included in an academic program of the UPC, which involves enrollment fees [1]. Then, the GPSim simulator has been fully developed in Matlab<sup>®</sup>, which has an annual license [2]. Finally, to assess the cost of labor, it is considered an average salary of 10€/h (junior engineer) and an estimated value of 550 hours invested for the development of the work. The costs of the project are shown in Table 1:

<b>ACADEMIC EXPENSES</b>			
<b>Bachelor's Degree</b>	<b>ECTS</b>	<b>€/ ECTS</b>	<b>EXPENSES [€]</b>
Aerospace Technology Engineering	12	39.53	474.36

  

<b>SOFTWARE LICENSES</b>			
<b>Software</b>	<b>License</b>	<b>€/ Year</b>	<b>EXPENSES [€]</b>
MATLAB <sup>®</sup>	Student	35	35

  

<b>HUMAN RESOURCES</b>			
<b>Position</b>	<b>Hours</b>	<b>€/Hour</b>	<b>EXPENSES [€]</b>
Junior Engineer	550	10	5500

  

<b>TOTAL BUDGET</b>			
<b>6009.36€</b>			

Table 1: Budget of the project.

# References

- [1] UPC, “Preus dels estudis de grau i màsters universitaris.” [Online]. Universitat Politècnica de Catalunya, 2019. [Accessed: 27 April 2020]. Available from: [https://www.upc.edu/sga/ca/matricula/preus/copy\\_of\\_coeficients-estructura-docent-nova#grau](https://www.upc.edu/sga/ca/matricula/preus/copy_of_coeficients-estructura-docent-nova#grau).
- [2] MATHWORKS, “Pricing and Licensing - MATLAB & Simulink.” [Online]. The MathWorks, Inc., 2020. [Accessed: 27 April 2020]. Available from: <https://la.mathworks.com/pricing-licensing.html?prodcode=ML&intendeduse=student>.