

Preliminary work for TFG

This document contains the preliminary and background work completed for the TFG project entitled *CREACIÓN DE UNA HERRAMIENTA DE DISEÑO DE TURBINAS DE ALTA PRESIÓN*, supervised by Jorge Saavedra. A rough plan of the methodology to be followed allows for the creation of a superficial outline for the final report. In addition, a timeline is proposed for the work to be completed.

Methodology

The methodology followed in the development of the design tool will follow a rough outline as follows, where the final report will be written progressively as each step is completed:

1. **Preliminary research** on high-pressure turbines and reference design projects.
2. **Initial turbine model** with no pressure losses, with given entry conditions and thrust requirements.
3. Iteration on the initial model by including **pressure losses** as a function of the blade angles.
4. **Optimisation** of the turbine design using [*algorithm to be decided*].
5. Possible inclusion of **additional losses** for more accurate results.
6. **Design tool analysis and conclusion.**

TFG rough outline

1. Introduction
2. Reference studies
3. Hypotheses
4. Tool overview, applications, and input
5. Turbine model
6. Pressure losses
7. Optimisation
8. Results
9. Conclusion

Projected time frames

In order to complete the TFG project within the 2020-2021 academic year (and be able to graduate accordingly), the final defence must be on July 16th at the latest. By dividing the work to be completed among the four following months, the project can theoretically be completed by the end of June, thereby keeping two weeks of margin in case of delays.

MARCH	APRIL	MAY	JUNE	JULY
PROJECT DURATION				GRACE PERIOD
DESIGN TOOL DEVELOPMENT			CORRECTIONS AND DEFENSE	
Preliminary research and initial no-loss model	Development of complete turbine model with pressure losses	Optimisation and finalisation of design tool	Final report, corrections, and defence	

It should be noted that this is only a rough estimate of the work to be completed, and the actual evolution may be different as timescales are reduced or increased to fit the needs of each section, or the available time.