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ESEIAAT - UPC

Study for the computational resolution of conservation equations of mass, momentum and energy. Possible application to different aeronautical and industrial engineering problems: Case 1B

Attachment C - Planning

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1 Planning

According to the project charter the study was divided in five cases: one on conduction, one on convection, one on radiation, another one on the combination of these heat transfer mechanisms and a practical case. However, instead of radiation, the study has focused in more cases regarding convection, which were more related to the application studied.

1.1 Tasks

ID	Work package	Brief task description list
1	State of the art	Research of the current computational methods used in the resolution of the conservation equations.
2	Conduction	Study of a numerical method to solve the energy equation and its application in the resolution of a conduction problem.
3	Convection	Study of a numerical method to solve the generic convection-diffusion equation and its application in the resolution of a problem.
4	Convection 2	Study of a numerical method to solve the momentum equation and its application in the resolution of a problem.
5	Combination	Resolution of a problem that combines the momentum and the energy equations.
6	Practical application	Application of the studied computational methods to a case of study.
7	Conclusions	Writing of the conclusions of the study.

Table 1.1: Tasks of the study

1.2 Gantt chart

The dependencies among the tasks and their time estimation are represented in the Gantt chart 1.1. The global calendar of the study is also represented.

ID	Task Mode	Name	Duration
1		Beginning of the project	0 days
2		State of the art	25 hours
3		**Conduction**	**25 hours**
4		Theoretical approach	10 hours
5		Code development	10 hours
6		Analysis and validation	5 hours
7		**Convection**	**40 hours**
8		Theoretical approach	15 hours
9		Code development	15 hours
10		Analysis and validation	10 hours
11		**Convection 2**	**60 hours**
12		Theoretical approach	25 hours
13		Code development	25 hours
14		Analysis and validation	10 hours
15		**Combination**	**45 hours**
16		Code development	35 hours
17		Analysis and validation	10 hours
18		**Practical application**	**95 hours**
19		Research	20 hours
20		Code development	40 hours
21		Validation	15 hours
22		Analysis	20 hours
23		Conclusions	10 hours

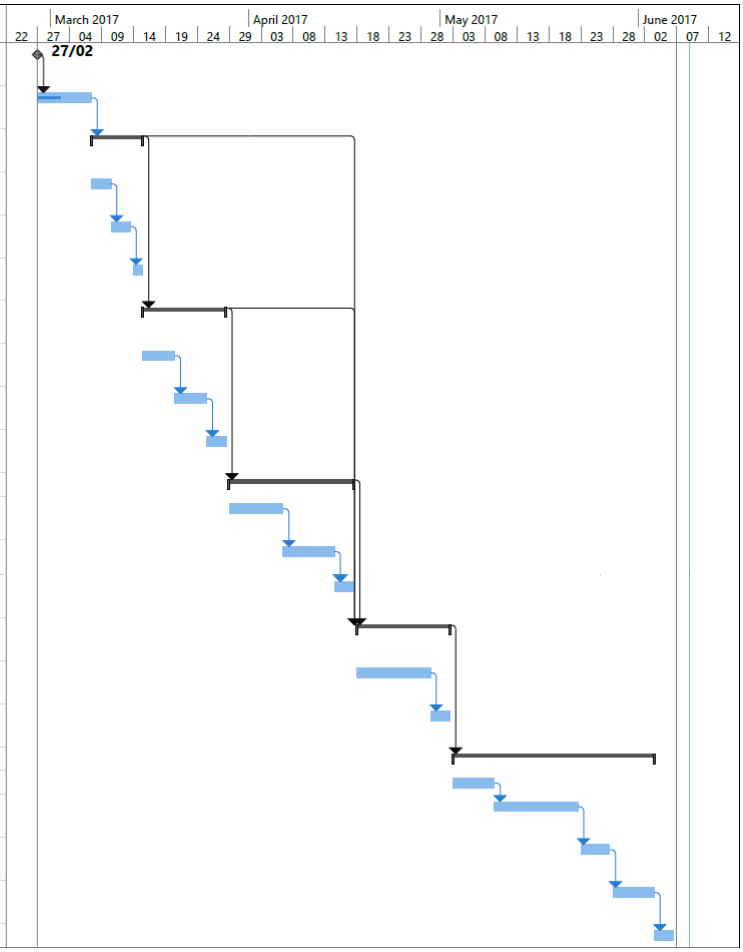

Figure 1.1: Gantt chart