Simulation of Al-Si alloy casting system for educational purpose

*… the title should look something like this, give a description of what has been done…*

Malvina Brinella, Osquar Backeb //name of the authors

a TTMVM\_IMTA\_1, malvina@kth.se, KTH //and where they “belong”

b TTMVM\_MDNA\_1, osquar@kth.se, KTH

# Abstract

A summary of what you have done… including the main results and conclusions… (max 100 words)

# Introduction

A reader may wonder why this laboratory exercise was conducted in the first place, describe it in one or two sentences. (max 50 words)

Describe also an application where component casting is used and why. (max 100 words)

# Theory

Here you describe the theory that has been used to do the exercise. Describe (shortly) the thoughts going into designing a cast system. (max 500 words)

# Methodology

## Model setup

Here you present what equations are solved within the software and the assumptions that are made inherent to those equations.

## Conditions

Here you present simple calculations that go into the model as initial and boundary conditions. Present also the material compositions and material data used for the simulation.

## Solution

Describe how the model is solved and what mesh was used. Describe how the model is verified [1] and that it is setup correctly.

# Results

Here you show the results from the simulation, with clear description to what conditions were used according to the methodology. (max 500 words)

# Discussion

Try to reason why the results became this way. Try also to suggest some improvements to the casting system that may give better (and/or cheaper?) results. (max 500 words)

# References

[1] I. B. Celik et al., *J. Fluids Eng.* 130, no. 7 (2008)