

ASSIGNMENT

MSc MAJOR PROJECT (BMEGEÁTMWD1)

Title: **Thermo-hydraulic analysis of a water cooled injection mould**

Author's name (code): **Ferenc SAMU (AT60EA)**
Curriculum : MSc in Mechanical Engineering Modelling / Fluid Mechanics major

Supervisor's name, title: Dr. Gergely KRISTÓF, associate professor
Affiliation: Department of Fluid Mechanics / BME

Supervisor's name, title: Dr. József G. KOVÁCS, associate professor
Affiliation: Department of Polymer Engineering / BME

Description / tasks of the project:

1. Investigation of the performance of numerical schemes and optimization of numerical controls for conjugate heat transfer problems in ANSYS simulation system.
2. Meshing of an injection mould composed of 3 different material zones (plastic, steel and coolant) by using 3 different mesh resolutions. Analysis of the grid dependency of the results.
3. Elaboration of a fast-running simulation methodology for modelling the periodic operation of the mould.
4. Modelling the change of heat transfer coefficient at the internal surface of the mould due to the shrinking of the plastic product.
5. Analysis of the periodically repeated injection moulding process.
6. Preparation of the project report.

Handed out / Deadline: **6th of February 2012. / 14th of May 2012.**
Budapest, 6th of February 2012.

(L.S.)

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Dr. János VAD, associate professor
Head of Department

Received by:
Budapest, 6th of February 2012.

The undersigned declares that all prerequisite subjects of the Major Project have been fully accomplished. Otherwise, the present assignment for the Final Project is to be considered invalid.

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student



<p>Supervisor's declaration of acceptance:</p>	<p>The submitted Project Report fulfils all requirements of the Department of Fluid Mechanics, Budapest University of Technology and Economics.</p>
<p>Supervisor's proposal for final grade of the thesis:</p>	<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>The proposed final grade* of the Project Report:</p> <p>.....</p> </div> <p>* Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)</p>
<p>Date:</p>	<p>Budapest, 14th of May, 2012.</p>
<p>Name / Signature:</p>	<p>..... Dr. Gergely KRISTÓF, associate professor supervisor</p>

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