

**UNIVERSITY-COMPANY ACADEMIC COOPERATION PROGRAMME (Appendix I)**  
**SCHOOL CODE: 250**

**I) WORK PLAN (to be filled in by the company)**

Mr/Ms Michele Chiumenti appointed by the company CIMNE (International Center of Numerical Simulation in Engineering) holder of Tax Identification Number ....., in his/her capacity of Tutor of the University-Company Academic Cooperation agreement between the University and the Company, declares the tasks carried by the student Ataollah Ghavaman with National Identity Document no. Y3628317-N will be:

- **Description of the tasks:**

The main tasks of the internship are described as below:

Firstly, the implementation of the constitutive model for the simulation of the different phases of the manufacturing process of the first wall simulation. This constitutive models involve thermo-mechanical model for the hipping process and deactivation algorithm to simulate the cutting and machining process.

Secondly, every single process has been investigated to check the capabilities the implemented models. This task includes the analysis of the computational cost, the mesh, the proper boundary and loading conditions of the problem.

Thirdly, once the model has been validated, calibration procedure is needed to obtain an accurate behavior of the mock-up. This calibration affects to the thermo-mechanical properties provided by F4E Company. A visco-plastic component has been considered to improve the simulation of the behavior of the mock-up.

The post process, analysis and interpretation of the results and validation according to the semi prototype experiment.

- **Place of work:** UPC-C1 Building-Room 111
- **Period of time:** 1<sup>st</sup> of November 2014 – end of July 2015
- **Total number of hours dedicated on this program:** 500 hours
- **Work schedule:**

	Monday	Tuesday	Wednesday	Thursday	Friday
Starting time	10		10		10
Ending time	13		13		13
Starting time	15			15	15
Ending time	17			17	17

- **Specific knowledge the student shall have:**  
 Numerical methods, continuum mechanics, constitutive models, coding
- **Professional training the student will be provided:**  
 Coding pre/post processing, treatment of thermal and mechanical properties, analysis and interpretation of the results
- **Student supervision and orientation procedure:**  
 Supervision will be held by Professor Michele Chiumenti and Professor Jose Manuel Gonzalez Lopez and meetings will being held weekly and occasionally when the work demands.

Date:.....09/06/2015.....

Signed:..........

Tutor of the University-Company Educational Cooperation Programme