



# European Project Semester

## PROJECT OUTLINE

<b>Project dates:</b> October 2017- January 2018	
<b>Title:</b> Developments in industrial Robotics	
<b>Project activity areas:</b> Robotics, industrial automation, artificial vision, robotic machining, fault detection, manufacturing	<b>Keywords:</b> Industrial robots, artificial vision
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### Overview/Project technical background

The advantages of robotization in both manufacturing times and quality of the products explain the choice of many companies for this technique today, and most likely, their number will increase in the near future.

Our recent developments deal with robotic machining especially for the tasks where no high precision is required like polishing or deburring. Compared to the CNC machining, many problems are still unsolved because robots have not been specifically designed for machining. Therefore, this is a very interesting field for current engineering students.

### Studied topics

Many developments must be done to control all the components in the robotic cell. Several themes could be defined according to motivation and skills of the students. Main subjects could be chosen between the several topics listed below:

- Robot trajectories programming. Off-Line and On-Line programming using CAD products like Kuka Simpro or Delcam (Autodesk)
- Adjustment of process parameters in robotic machining especially in polishing using a force control
- Fault detection in a robotic cell – Defects analysis by artificial vision

All these themes are relevant for students coming from mechanical, electrical or computer engineering studies. Then final tasks will be discussed internally with the EPS group according to the background/knowledge of each group member.



Enit robotic cell