

2024/2025

This year the students were split into 7 groups. They are needed to design, fabricate and test pipe notching tools. Some of the pipe notched profiles are as below.



Since the basic structure of the tooling is common, the group decided to use the modular approach concept in their design.



For the first time, students need to apply their knowledge on instrumentation and mechatronics to develop a smart system to the tooling. The following are the list of smart system developed.

Group 1 – TWIN – Tool Wear Intelligent Notifier

Group 2 – Smart clamping

Group 3 – Smart Cycle Counter and Tool Life Monitor

Group 4 – Smart monitoring (Load)

Group 5 – Laser-Based Alignment System for Precise Pipe Notching

Group 6 – Smart monitoring (Temperature and vibration)

Group 7 – LiDAR-Edge - Smart Notching Tool with Distance Based Precision Feedback

Further details about the project and activities throughout the course can be seen in the YouTube channel. <https://www.youtube.com/@metalforginglabusm4247>