03. OBJECTIVES:

A general trend in the field of steel manufacturing is the development towards high strength grades as well as formability of the steel so that higher structural strength can be achieved and reduce the material thickness in turn weight, e. g. Sheet metal industry.

- The mechanical and chemical properties of the sheet metal are essential for the processing and application of the product.
- A systematic approach is required for selection of the steel so that the performance of the product can be improved. In view of the application of the sheet metal product, the physical and mechanical behavior of the steel is required to be investigated.
- To optimize and controlling the process in sheet metal forming, structural mechanics of the steel is to be evaluated.

In sheet metal forming particularly in drawing process that often requires experimental analysis to predict, analyze and optimize the process behavior. Before the experimental analysis, mechanical and chemical characteristics are to be evaluated for wide range of steel type.

- Objective of the present topic is verification and analysis of the sheet metal forming of a simple deep drawing case for four selected advanced high strength steel type, namely CR1, CR2, CR3 and CR4.
- For sheet material thickness of 0.66 to 2.5 mm has been chosen to facilitate the analysis. Verification is carried out at different theoretical and experimental level.

The final goal is recommendation for the material grade and the mechanical force to be applied and corresponding analysis and conclusions. One particular mechanism addressed is fracture, being essential for product design.