QForm introductory course (9 am CET)

Introduction	• General presentation • Overview of the possibilities • Goals of the brief training
Geometry preparation	• 2D and 3D requirements • QShape preparation, symmetry, direct import
Data setup demonstration	• Source data control panel, Workflow • Initial data: Materials, temperature, equipment etc.
Analyzing results	• Fields, graphs, stress, strain • Usual workpiece defects • Saving of images, animations
Coupled deformation tasks	• Model types: General and Separate • Postprocessing calculations
Database	• Equipment, materials, lubricant
Postprocessing calculations	• Tracing: points, lines, array lines • Subroutines
Advanced features	• Simulation parameters: calculation step, mesh properties • Export results
Conclusions	• Questions and answers • Tasks for self-guided work

Goals

- *Initial data setup and launching calculation*
- *Performing geometry preparation*
- *Analyzing the results, postprocessing calculations*
- *Performing tooling analysis*
- *Interaction with the Help manual*

Plan of the course

1. **Introduction** ***(9:00-9:15)***
   - General presentation. Overview of the possibilities
   - Documentation (QForm Manual)
   - License
   - Goals of the training
2. **Preparation of case 3D_case (Lecture and Practice)** ***(9:15-9:30)***
   - Demonstration of simulation setup. Describing initial data.
     (While case is on calculation tell about the interface, point 3)
3. **Interface (Lecture)** ***(9:30-10:00)***
   - Main menu, Toolbar, Playback bar, Simulation control panel, Simulation message log
   - Source data control panel:
     Project, Operations, Geometry, Workpiece parameters, Tool parameters, Stop conditions, Boundary conditions, Blows
     (Necessary to emphasize the importance of setting the correct source data)
4. **Analyzing results (Lecture and Practice)** ***(10:00-10:30)***
   - Fields, graphs, cross cut, animations, export results, measurements *(case 3D_case, All tasks)*
5. **Preparation of case QExample 2D-3D (Lecture and Practice)** ***(10:30-11:00)***
   - Demonstration of simulation setup. Describing initial data
   - Sequence of operations
   - From 2D to 3D
   - Clipping surface

Coffeebreak ***(11:00-11:30)***

6. **Geometry preparation (Lecture and Practice)** ***(11:30-11:50)***
   - 2D geometry requirements, Direct dxf-files import
   - 3D geometry requirements. File extensions. QShape. Direct import
7. **Preparation of 2D surf line (Lecture and Practice)** ***(11:50-12:30,*** *All tasks****)***
   - Tracing undersurface lines. Tracing objects in general
   - Minimum distance to surface field
   - Garfield subroutine. Subroutines in general
8. **Preparation of 2D Disk (Lecture and Practice)** ***(12:30-13:10,*** *All tasks****)***
   - Coupled deformation task. Model types: General and Separate.
   - Postprocessing calculations
   - Assembled tools, Fittings

Coffeebreak ***(13:10-13:25)***

9. Database (Lecture) *(13:25-13:40)*

- Equipment, Deformed materials, Tool material, Lubricant, Environment
- Simulation parameters, advanced features: calculation step, mesh properties

10. Conclusions *(13:40-14:00)*

- Summary of obtained knowledge
- Giving tasks for self-guided work (4 cases)
- Questions and answers