QForm introductory course

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** *(10:00-10:15)*
   - General presentation. Overview of the possibilities
   - Documentation (QForm Manual)
   - License
   - Goals of the training
2. **Preparation of case 3D_case (Lecture and Practice)** *(10:15-10:30)*
   - Demonstration of simulation setup. Describing initial data.
     (While case is on calculation tell about the interface, point 3)
3. **Interface (Lecture)** *(10:30-11:00)*
   - 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)** *(11:00-11:30)*
   - Fields, graphs, cross cut, animations, export results, measurements *(case 3D_case, All tasks)*
5. **Preparation of case QExample 2D-3D (Lecture and Practice)** *(11:30-12:00)*
   - Demonstration of simulation setup. Describing initial data
   - Sequence of operations
   - From 2D to 3D
   - Clipping surface

Coffeebreak *(12:30-12:45)*

6. **Geometry preparation (Lecture and Practice)** *(12:00-12:30)*
   - 2D geometry requirements, Direct dxf-files import
   - 3D geometry requirements. File extensions. QShape. Direct import
7. **Preparation of 2D surf line (Lecture and Practice)** *(12:45-13:15, 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)** *(13:15-13:45, All tasks)*
   - Coupled deformation task. Model types: General and Separate.
   - Postprocessing calculations
   - Assembled tools, Fittings

Coffeebreak *(13:45-14:00)*

9. **Database (Lecture)** *(14:00-14:25)*
- Equipment, Deformed materials, Tool material, Lubricant, Environment
- Simulation parameters, advanced features: calculation step, mesh properties

10. **Conclusions** *(14:25-15:00)*
- Summary of obtained knowledge
- Giving tasks for self-guided work (4 cases)
- Questions and answers