SOLIDWORKS Motion – 2 days (14h)

1. Introduction to Motion Simulation and Forces

- Basic motion analysis
- Forces
- Results

2. Building a Motion Model and Post Processing

- Creating local mates
- Mates
- Local mates
- Power
- Plotting kinematic results

3. Introduction to Contacts, Springs and Dampers

- Contact and friction
- Contact
- Contact groups
- Contact friction
- Translational spring
- Translational damper
- Post-processing
- Analysis with friction (optional)

4. Advanced Contact

- Contact forces
- STEP function
- Contact: Solid bodies
- Geometrical description of contacts Integrators
- Instability points
- Modifying result plots
- Path Mate Motor

5. Curve to Curve Contact

- Contact forces
- Curve to curve contact
- Solid bodies vs. Curve to curve contact
- Solid bodies contact solution

6. CAM synthesis

- Cams
- Trace path
- Exporting trace path curves

7. Motion Optimization

- Motion Optimisation
- Sensors
- Optimisation analysis

8. Flexible Joints

- Flexible joints
- System with Flexible Joints

9. Redundancies

- Redundancies
- How to check for redundancies
- Typical redundant mechanisms

10. Export to FEA

- Exporting results
- Export of load
- Direct solution in SOLIDWORKS motion

11. Event Based Simulation

- Event based simulation
- Servo motors
- Sensors
- Task

12. Design Projects (Optional)

- Design Project
- Self-guided problem – **Part 1**
- Self-guided problem – **Part 2**
- Problem solution – Part 1
- Creating the force function
- Force expression

Course Objectives : At the end of each course, students will know the capabilities of the software and will be able to use the learned features.
Training Course : Training is given in class at SolidXperts or online where each student has access to a workstation or online product version.
Methodology : Training is based on case studies demonstrated by the instructor. At the end of each lesson, time will be given for exercises.
Competences Evaluation : During the classwork, the instructor will correct the exercises on-demand and explain the solutions to the entire class if needed.
Instructor : SolidXperts trainers are Certified SolidWorks Instructors (CSWI) and authorized by Emploi-Québec.
Course Materials : One or more training manuals are included with the training course.
Attestation : A certificate will be given to each student at the end of the course to attest to the successful completion of the requirements for the course.   **PMT2042-ENG**

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