Robotics – Content Consultation Document	
Module	Robot Programming
Aim	
Tutor(s)	
Duration	2 days
Date(s)	

Learning Outcomes:

- The learners will be able to read, understand and safely edit programs used to control an industrial robot
- Learners will be able to create new software to safely operate an industrial robot.

Topic	Content	Knowledge	Skills
Safety	**RECAP : Safety overview of industrial robots and their use. Emergency stop, T1 & T2, Run (Auto) function**	**To understand the risks associated with industrial robots**	**Demonstrate adherence to H&S requirements for industrial robots**

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Features & Technology	**RECAP: Overview of a typical industrial robot. Controller (Pendant), Axes and drives, end effector**	**To possess knowledge of the generic structure and functions of an industrial robot**	**N/A**
Coordinate systems	**RECAP: Robot coordinate system overview (world, base, tool)**	**To understand robot coordinate systems.** **To understand robot tool, base and load calibration**	**Competently operate an industrial robot** **Calibrate tool, load and base systems**
Programming commands and concepts	**Manual operation / jogging** **Basic movement commands:** **KUKA: PTP, LIN, CIRC** **ABB: MOVEJ, MOVEL, MOVEC** **Zones** **Velocity setting** **Acceleration setting** **Variables (Global/Local)** **Procedures/Subroutines** **Loops** **Inputs/Outputs (see below)**	**To understand the structure of a robot program** **To understand logical instructions and basic commands** **To understand system variables and parameters**	**Competently operate an industrial robot** **To be able to modify an existing program and test against a defined specification** **To be able to create a new program and test against a defined specification**

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Program control and execution	**Be able to load, view, edit, save and run a complete program in both Test and Auto modes**	**To possess knowledge of the structure and function of a robot system**	**Competently operate an industrial robot** **To be able to archive & restore programs**

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