At the end of the course trainees should be able to:

1. List causes of shot to shot variation caused by the injection moulding machine hardware
2. List causes of shot to shot variation caused by the plastic material
3. List causes of shot to shot variation caused by the injection moulding process parameters
4. Describe what the terms Cp, CpK, Standard Deviation, Average and Range mean.
5. Write out the equation to calculate the Process Capability Index Cp
6. Write out the equation to calculate the Process Capability Index CpK
7. Calculate the Cp and CpK results from a given set of data.
8. Work out the Standard Deviation from a given set of data using MS Excel.
9. List the common errors made during data collection, part weight measurements.
10. Describe in detail the steps to complete a full tool trial on an injection mould using scientific moulding principles
11. Demonstrate the steps to complete a full tool trial on an injection mould using scientific moulding principles
12. Explain the causes of the following defects in terms of Plastic Material causes, Part Design causes and process parameter causes: Flash, Burn Marks, Short Shots, Sink Marks, Weld Lines, Bubbles, Voids and Gate Blush.
13. Demonstrate how to prevent/ cure the following moulding defects using data from the moulding process/ pressure curve data to analyse and cure the fault: