

# Process and Control Troubleshooting and Tuning

## Short Intensive Course – Programme Outline

This course is aimed at instrumentation and control engineers, instrument technicians, process engineers, operations supervisors and control room operators. The objective is to provide a common understanding and methodology for all persons involved in supporting hydrocarbon and other processing operations. No pre-existing knowledge is assumed apart from familiarity with chemical, oil and gas processes and their operation. The course is entirely practical and includes several hands-on sessions, utilising a dynamic simulation of many common control loop characteristics, faults and problems. It can be run over an intensive two days (as illustrated below) or a less intensive three.

### Day 1

09:00 – 09:15	Introduction
09:15 – 10:15	Process and control fundamentals
10:15 – 10:30	Coffee break
10:30 – 12:00	Simulator session: introduction to process dynamics and tuning
12:00 – 13:00	Lunch break
13:00 – 13:15	More about tuning
13:15 – 14:45	Simulator session: tuning methods for benign processes
14:45 – 15:00	Coffee break
15:00 – 16:30	Simulator session: common difficulties
16:30 – 16:45	Recap and discussion

### Day 2

09:00 – 09:30	System architectures and components
09:30 – 10:15	Simulation session: simple doesn't mean easy
10:15 – 10:30	Coffee break
10:30 – 11:30	Traps for the unwary (and how to avoid them)
11:30 – 12:15	A systematic troubleshooting methodology
12:15 – 13:15	Lunch break
13:15 – 14:00	Recognising (and solving) common problems
14:00 – 15:30	Simulation session: more advanced techniques
15:30 – 15:45	Coffee break
15:45 – 16:15	Achieving lasting benefits
16:15 – 16:30	Recap and conclusion

Candidates are encouraged to bring example process and control problems from their site to the class for discussion and analysis. It is also recommended that the course be extended by 2-3 days to include analysis, testing and tuning of real control loops on the relevant plant(s). This can generate the dual benefits of consolidating the candidates' new knowledge as well as potentially improving plant operation.