This module aims to provide learners with the knowledge and skills in machine interfacing, data acquisition, and supervisory control. They will gain hands-on experience from developing simple Human Machine Interface (HMI) to design supervisory control (SC) system for machine process monitoring and automated material handling system.

This module will use a commercial SCADA software development tool during hands-on assignment sessions together with a PLC demonstration kit where the trainees will have to design two simple supervisory control systems: one for machine process monitoring and the other for automated material system. Case studies of industrial applications will be used to help the trainees understand the use of HMI & SC in a wider range of industries.

**Why This Course**

- Designed specifically based on local industry demand
- Highly practical and intensive
- Latest knowledge and up-to-date technologies
- Case studies highlighting industrial applications
- Expert trainers in the field with industrial experience

**Who Should Attend**

This course is designed for Human Machine Interface (HMI), supervisory control designers, equipment and process managers and engineers. It is also suitable for machine, line or cell system integrators, operations and maintenance managers and engineers, hardware and instrument specialists and project managers.

**When & Where**

Please visit our website at [KTO.SIMTech.a-star.edu.sg](http://KTO.SIMTech.a-star.edu.sg) for the updated course schedule.

Training Venue:
Singapore Institute of Manufacturing Technology
2 Fusionopolis Way, Innovis, Level 8, Singapore 138634
What You Will Learn

What is Human-Machine Interface (HMI) & Supervisory Control (SC)
• Overview of HMI and supervisory control
• Fundamentals of PLC, Database and SCADA tools
• Machine communications, standards, and interface methods
• Project management and system development life cycle
• Case Study 1: HMI for Stamping Machine Monitoring

How to Design a Supervisory Control System (SCS) for Process Monitoring
• Requirements and system design considerations, interface methods
• Case Study 2: Supervisory Control of a Thermal Bonding Machine
• Hands-on Project 1: Building a supervisory control system for process monitoring (involving a Machine Controller, database, and SCADA)

How to Design a HMI for Automated Material Handling System (AMHS)
• Overview, System design considerations, PLC interface specifications
• Case Study 3: HMI for an Automated Airfreight Terminal Control System
• Hands-on Project 2: Building a HMI system for a pick and place machine (involving a PLC, database, and SCADA)

About the Course Leaders

Mr Wong Ming Mao is currently a Principal Research Engineer in SIMTech. He graduated from the University of Newcastle, Australia in 1989 with a BEng (Mechanical) and from the Nanyang Technological University with a MEng (Mechanical). He has over 20 years of research and industrial experience, with extensive project management in numerous enterprise systems and mission critical applications. He is a Certified Industrial Automation Consultant (CIAC) by the Singapore Industrial Automation Association and conducted training courses for the industries.

Dr Zhou Jun Hong is currently a Principal Research Engineer in SIMTech. She graduated from Tsinghua University with a BEng (Automation) in 1987 and from the Nanyang Technological University with a MEng (Electrical) in 1995. She has over 15 years of research and industrial experience in building automation, equipment health monitoring, intelligent condition based maintenance, fault diagnosis and failure prognosis for tool condition monitoring and rotary equipment fault diagnosis. She specialises in using SCADA for machine monitoring and supervisory control.

Course Fee and Funding
• The full course fee for this module is $3,000 before course fee funding & GST.
• All Singaporeans and Permanent Residents aged 21 years and above can enjoy course fee funding of up to 70% of the course fee.
• Singaporean or Permanent Resident employees fully sponsored by SMEs can enjoy course fee funding support of up to 90% of the course fee under the Enhanced Training Support for Small & Medium Enterprises (SMEs) scheme, subject to eligibility criteria.
• Singaporeans aged 40 years and above can enjoy course fee funding of up to 90% of the course fee under the SkillsFuture Mid-career Enhanced Subsidy (MCES).
• Singaporeans aged 35 years and above with earnings not more than $2,000 per month can enjoy course fee funding for 95% of the course fee under the Workfare Training Support (WTS) scheme.
• Singaporeans aged 25 years old and above are eligible for SkillsFuture Credit which can be used to offset course fees.

For more information about the course fee funding, please visit www.ssg.gov.sg