

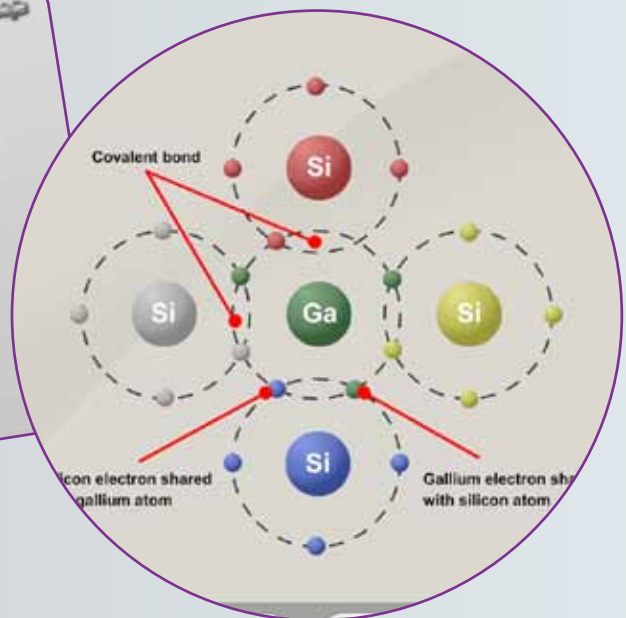
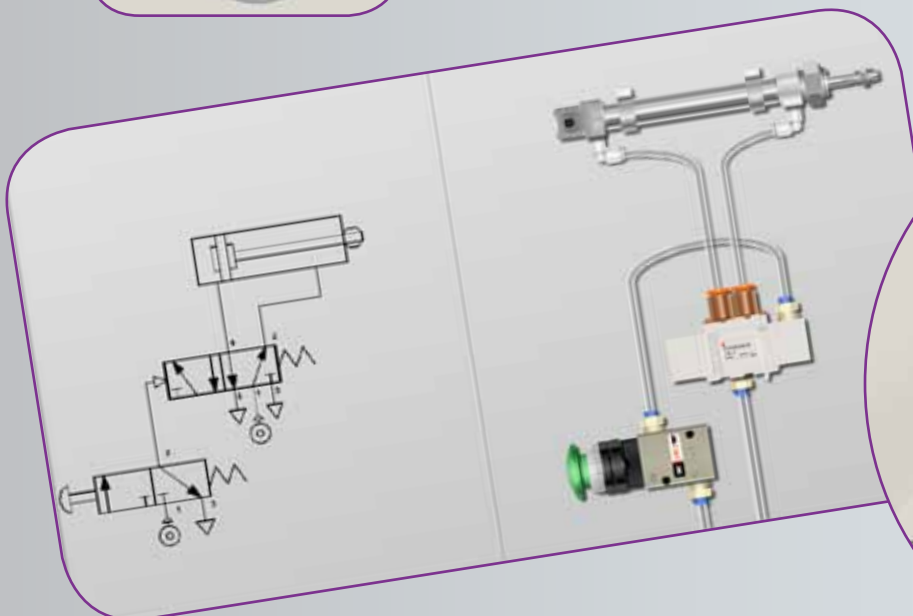
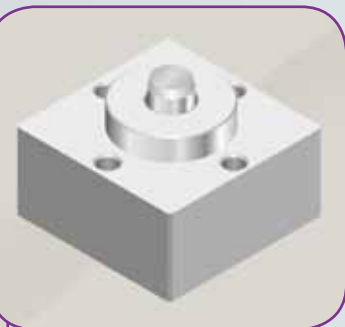


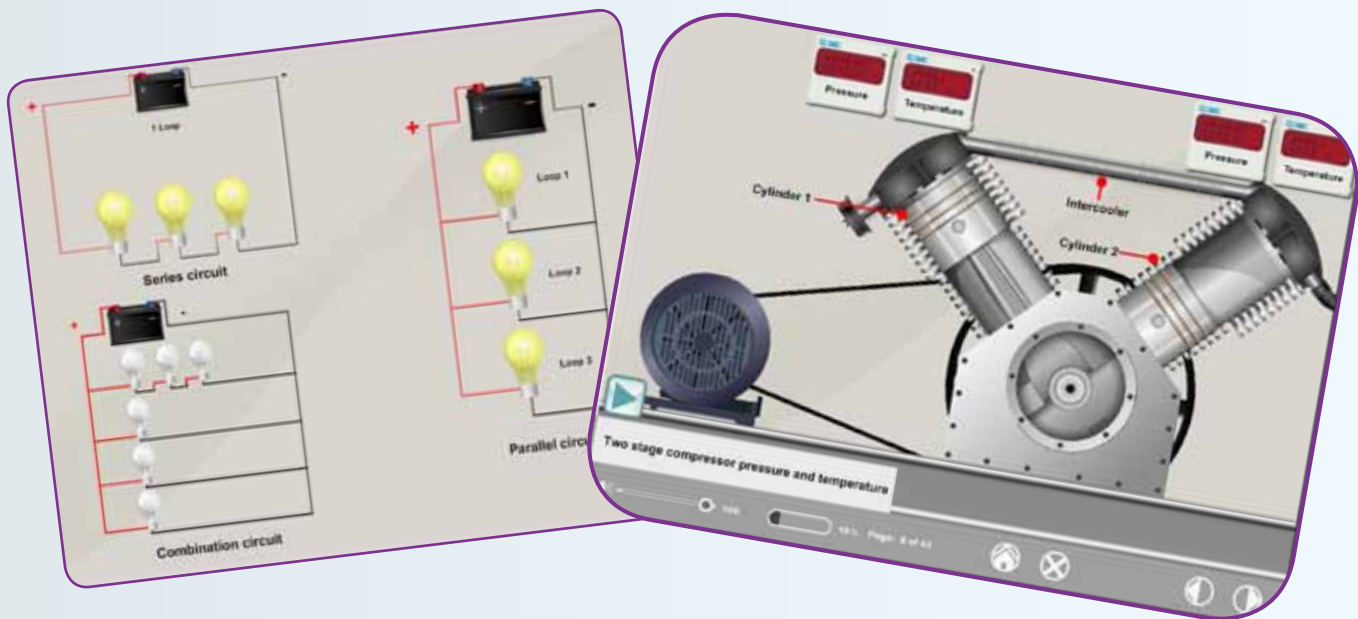
eLEARNING-200

The perfect theory companion

Access to obstacle-free knowledge

The best way of acquiring underpinning knowledge of automation technologies to support skills development





Using new technologies intelligently means that knowledge can be picked up EASILY and FLEXIBLY.

Delve into the fascinating world of automation technologies with an attractive, new learning system



Find out about our
eLEARNING courses





■ eLEARNING-200 - The perfect theory companion



eLEARNING-200 is a flexible learning system where knowledge can be acquired dependant on the user's available time and requirements.

Users have the option to take actual classes and additional Internet courses when this suits them best.

To be able to develop different technology skills, theoretical knowledge must be acquired first. SMC International Training presents the eLEARNING-200 course programme: the perfect complement to our didactic equipment.

Access and Use

Through SMC International Training's learning management system (LMS), users can get connected and work through the different chapters and tests to complete these courses.

Access and use of the eLEARNING-200 courses, once purchased, is as simple as:

- Access the LMS and enter the Username and Password provided.
- Browse through the different chapters of the purchased courses.
- Each chapter ends in a TEST, validating knowledge acquisition.
- Once all course chapters have been completed, the user receives a CERTIFICATE.



Structure

All eLEARNING-200 courses are structured as follows:

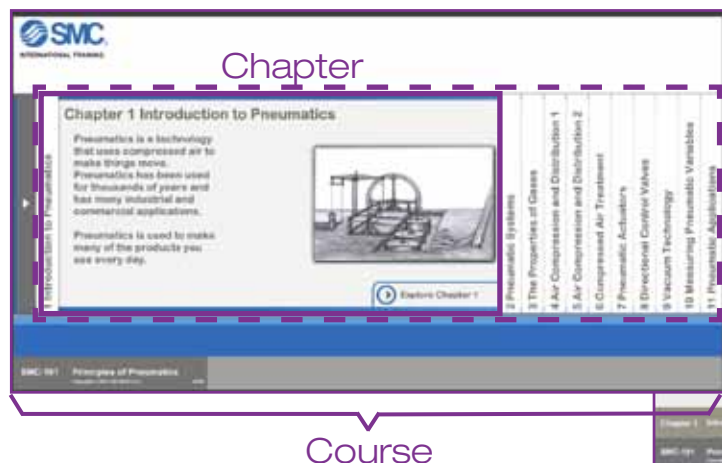
Course



Chapter

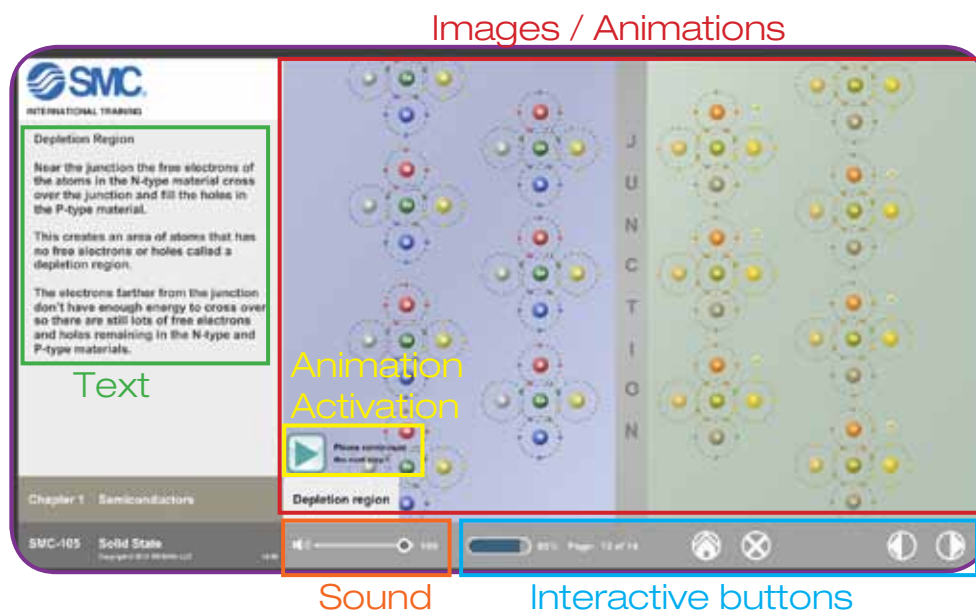


Slide



General characteristics

eLEARNING-200 comprises interactive courses, including text and images, in addition to a wide range of animation.



Language and licence type

eLEARNING-200 comprises a total of 13 courses, in different languages, with different licence types, varying according to duration and payment method. Each licence provides access to all the available courses. Each user requires a licence.

Language

eLEARNING-200 comes in two languages:

- ENGLISH
- SPANISH

**Other languages: Enquire*

Licence type

It is possible to purchase three different types of eLEARNING-200 licence, dependant on customer requirements. Licences can be SINGLE USE, ONE YEAR or TEN YEAR.

- **SINGLE USE** - The licence is valid for a single user, it is not reusable. It will be valid for one year once the user enrolls the course. Non un-enroll option.
- **ONE YEAR** - The licence is valid for a year. Valid for one user per licence. Reusable*.
- **TEN YEARS** - The licence is valid for 10 years. Valid for one user per licence. Reusable*.

** Reusable: it is possible to unenroll from the courses so that a new user could be enrolled again. This process can be repeated as many times before expiration of the licence.*



■ eLEARNING-200 - Order reference configuration

The eLEARNING-200 licence part number depends on the following parameters: language, licence type, course and number of licences required.

Each user requires a licence. Between 1 and 1000 licences can be order or an unlimited number.

| Licence TYPE | | LANGUAGE | |
|--------------|------------|----------|---------|
| U | Single Use | 0 | Spanish |
| Y | One Year | 1 | English |
| T | Ten Years | | |

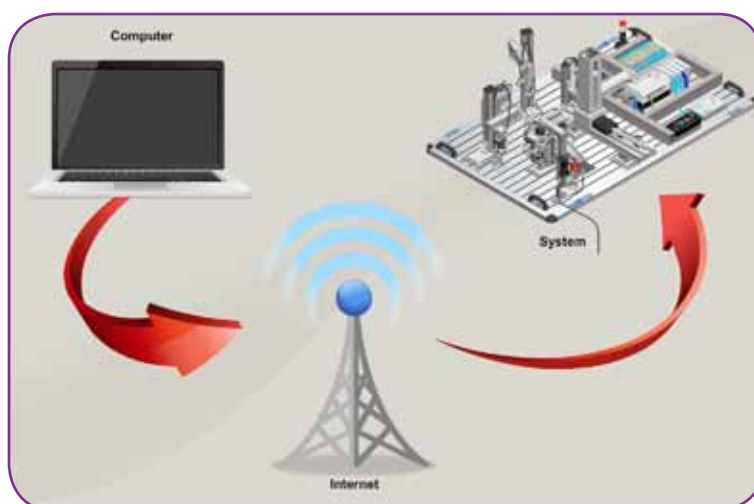
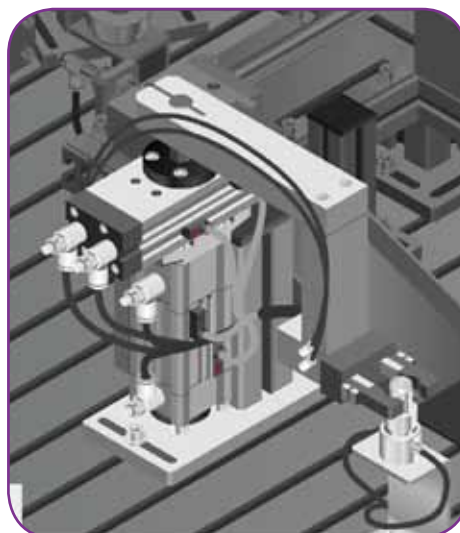
SAI 20-

| AVAILABLE COURSES PACK | | NUMBER OF LicenceS | |
|---|--|--------------------|---------------|
| SMC-100 – Introduction to industrial automation | | - - - | Unlimited |
| SMC-101 – Principles of pneumatics | | 001 | 1 licence |
| SMC-102 – Introduction to electricity | | 002 | 2 licences |
| SMC-103 – DC electricity | | 003 | 3 licences |
| SMC-104 – AC electricity | | ... | ... |
| SMC-105 – Solid state | | 010 | 10 licences |
| SMC-106 – Introduction to wiring | | 011 | 11 licences |
| SMC-107 – Introduction to electric motors | | 012 | 12 licences |
| SMC-108 – Sensors technology | | ... | ... |
| SMC-109 – Programmable controllers | | 101 | 101 licences |
| SMC-110 – Process controls | | 102 | 102 licences |
| SMC-111 – Hydraulics / electrohydraulics | | ... | ... |
| SMC-113 - Robotics | | 999 | 999 licences |
| | | 000 | 1000 licences |



■ SMC-100 – Introduction to industrial automation

The SMC-100 course introduces industrial automation, widening the user's knowledge on the importance, benefits and energy sources involved in these systems. It explores a specific assembly process to understand generic automated systems.



CHAPTERS

Introduction to Automation

Automated Process

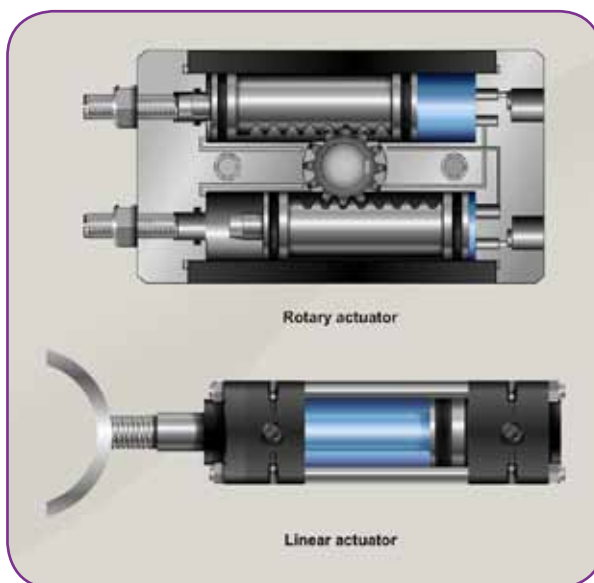
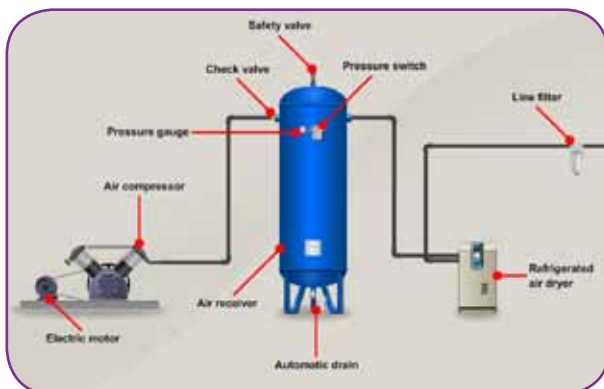
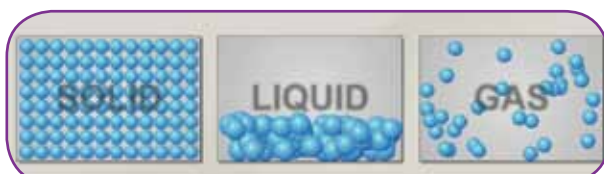
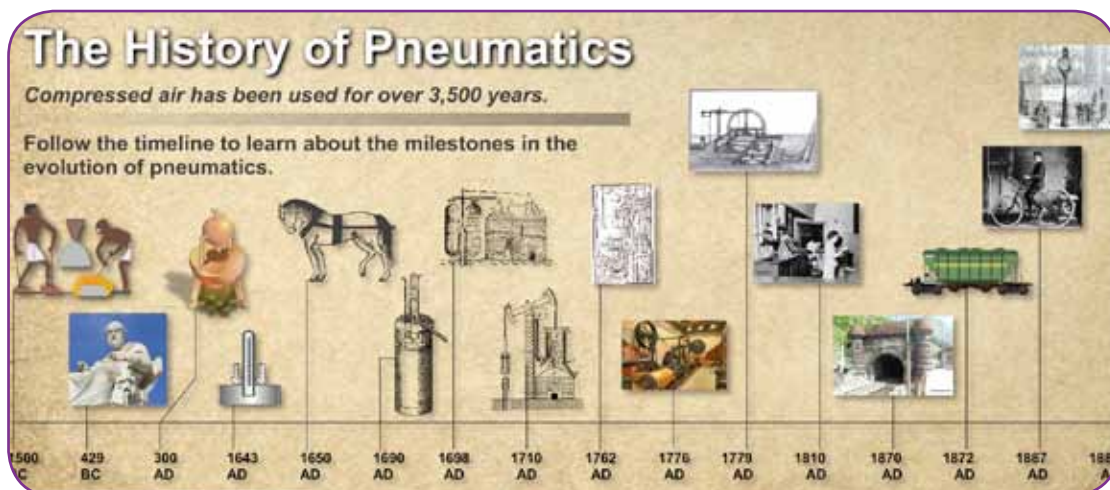
Automated System





■ SMC-101 – Principles of pneumatics

This course introduces users to the basic principles, laws and components used in pneumatic / electropneumatic systems. It covers the types, operating principles and symbols for the different components used in industrial applications.



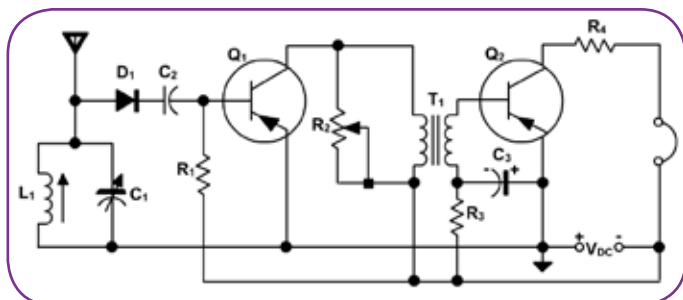
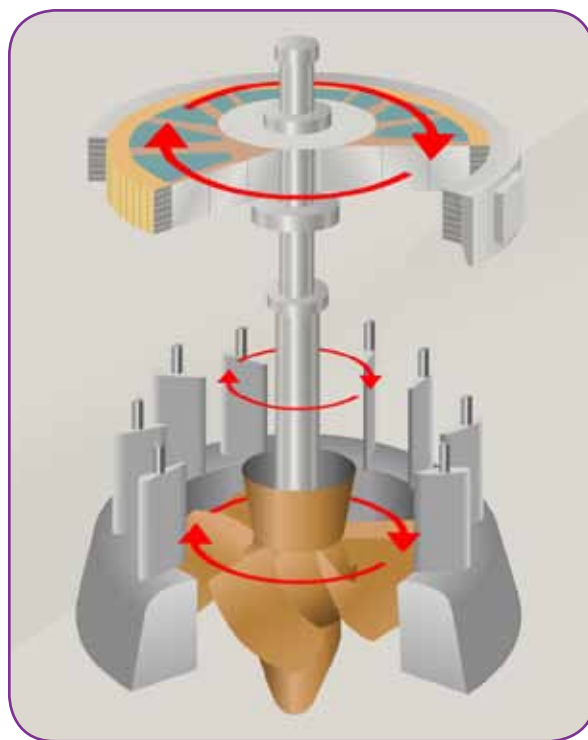
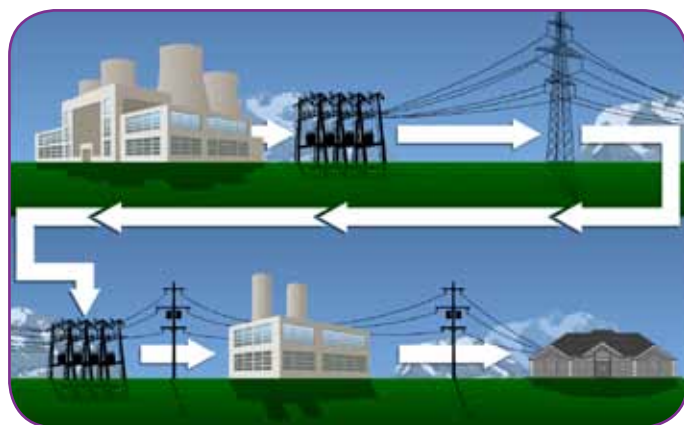
CHAPTERS

| | |
|----------------------------------|-------------------------------|
| Introduction to Pneumatics | Pneumatic actuators |
| Pneumatics Systems | Directional control valves |
| The properties of gasses | Vacuum technology |
| Air compression and Distribution | Measuring pneumatic variables |
| Compressed air treatment | Pneumatic applications |



■ SMC-102 – Introduction to electricity

The SMC-102 course runs through the production, transport, distribution and use of electrical energy, including the components and control circuits used. The user will become familiar with different types of circuits and electrical applications and will be capable of understanding the laws and relationships between electrical parameters.



CHAPTERS

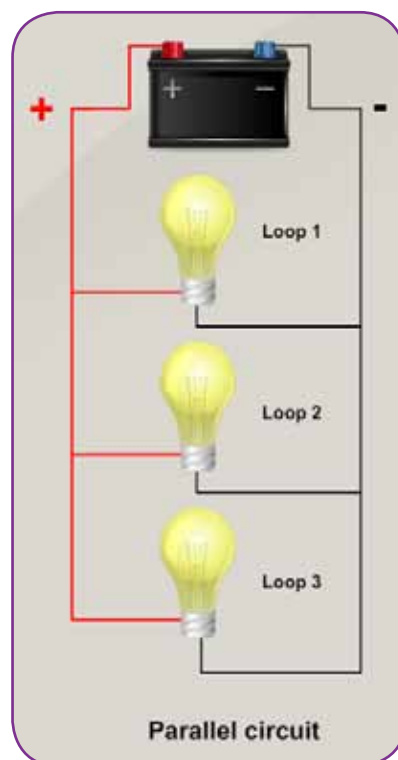
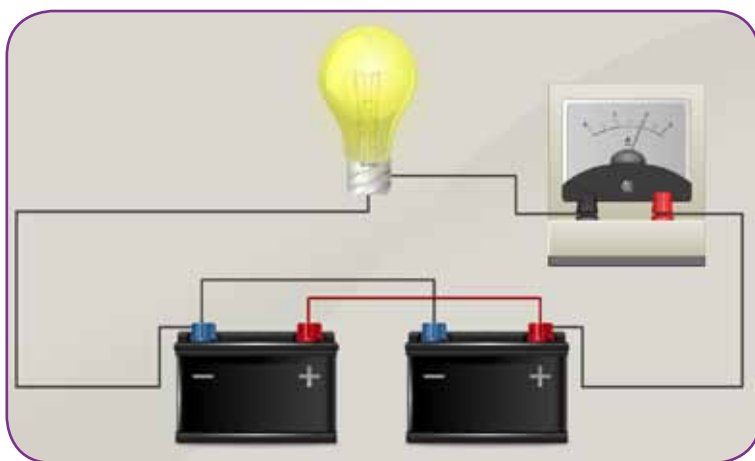
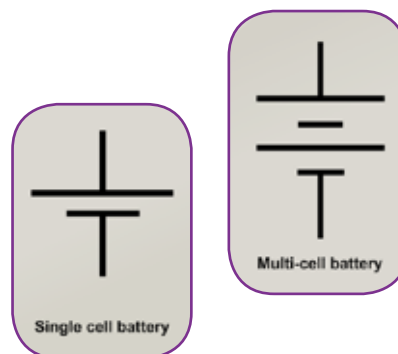
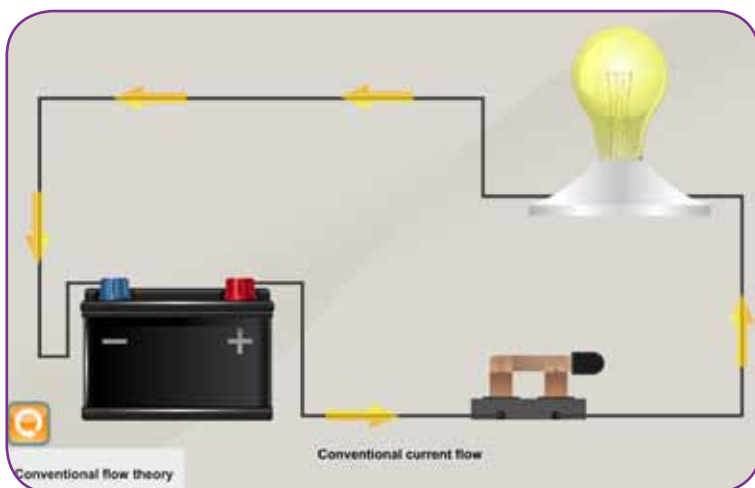
| | |
|-------------------------------|------------------|
| Production of electricity | Voltage |
| Transmission and distribution | Electrical power |
| Uses of electricity | Resistance |
| Atomic structure | Ohm's law |
| Electrical circuits | Watt's law |
| Electrical current | |





■ SMC-103 – DC electricity

This course focuses on the theory of direct current circuits. Working from the most common dc source, the battery, a closer look is taken at its connections, and the different types of dc receiver circuits (series, parallel, etc.).



CHAPTERS

Direct current

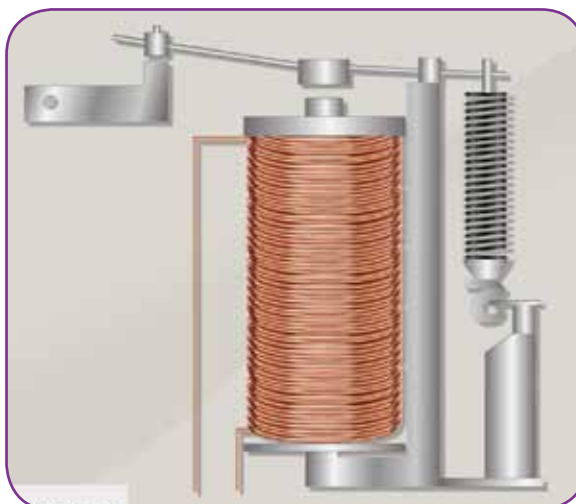
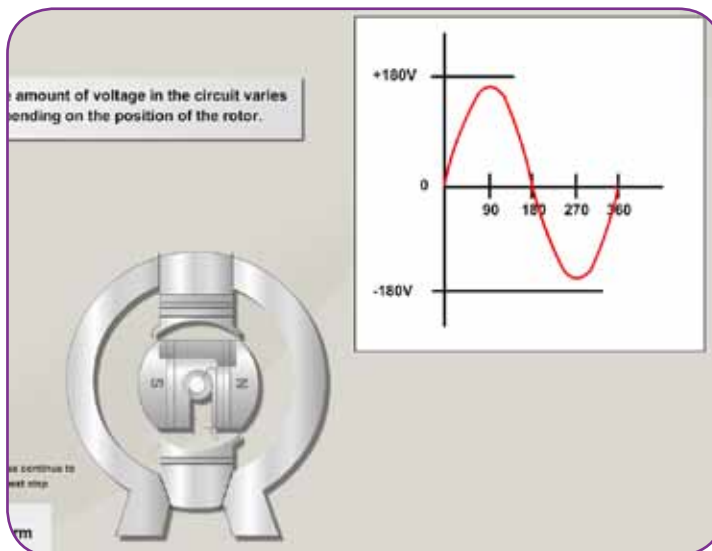
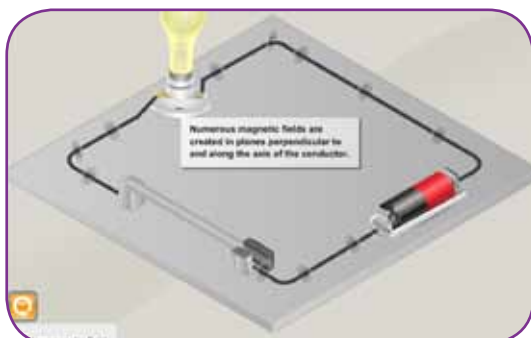
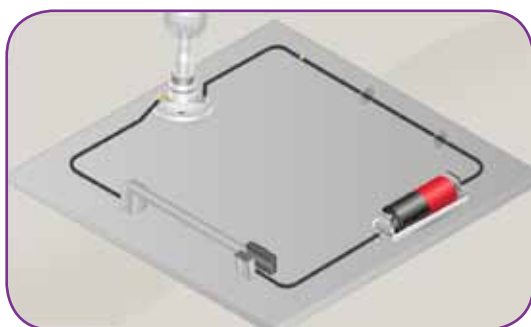
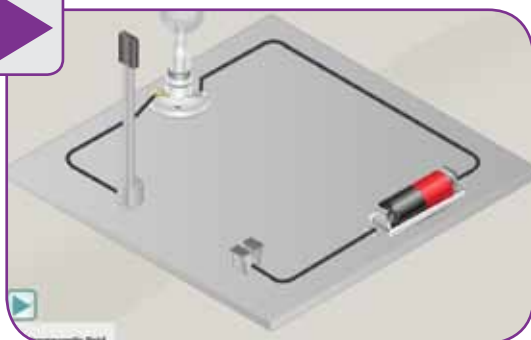
Batteries

Circuit analysis



■ SMC-104 – AC electricity

This course runs through the principles and laws associated with induction and electromagnetism as the basis for understanding how alternating current circuits work and their applications. Details of different devices including coils, relays, transformers and condensers are explained. Concepts of magnetic fields, generating alternate current, frequency, etc. complete the course.



CHAPTERS

Electromagnetism

AC waveform generation

Electromagnetic devices

Transformers

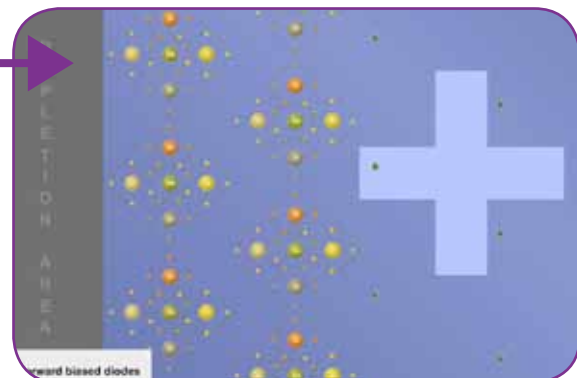
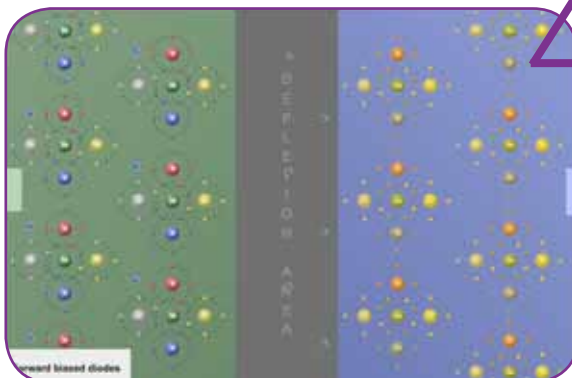
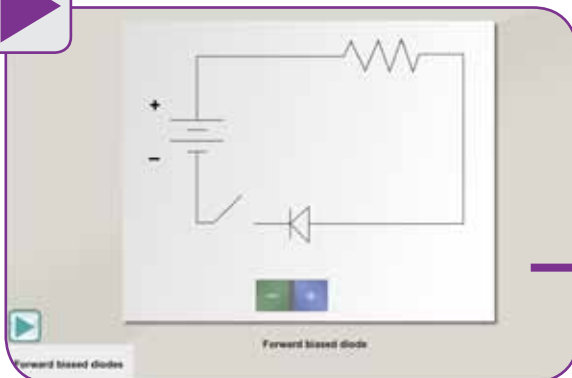
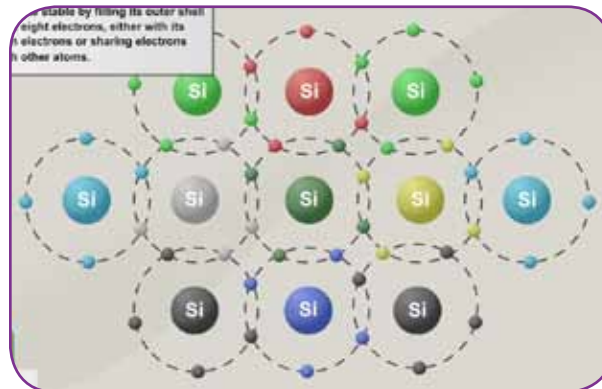
Capacitors





■ SMC-105 – Solid state

The SMC-105 course focusses on studying solid state devices commonly used in automated equipment and facilities. Starting with the study of the operating principle for semi-conductors (PN union, etc.), the user becomes familiar with different solid state devices such as diodes, rectifiers, transistors, opto-couplers, etc.



CHAPTERS

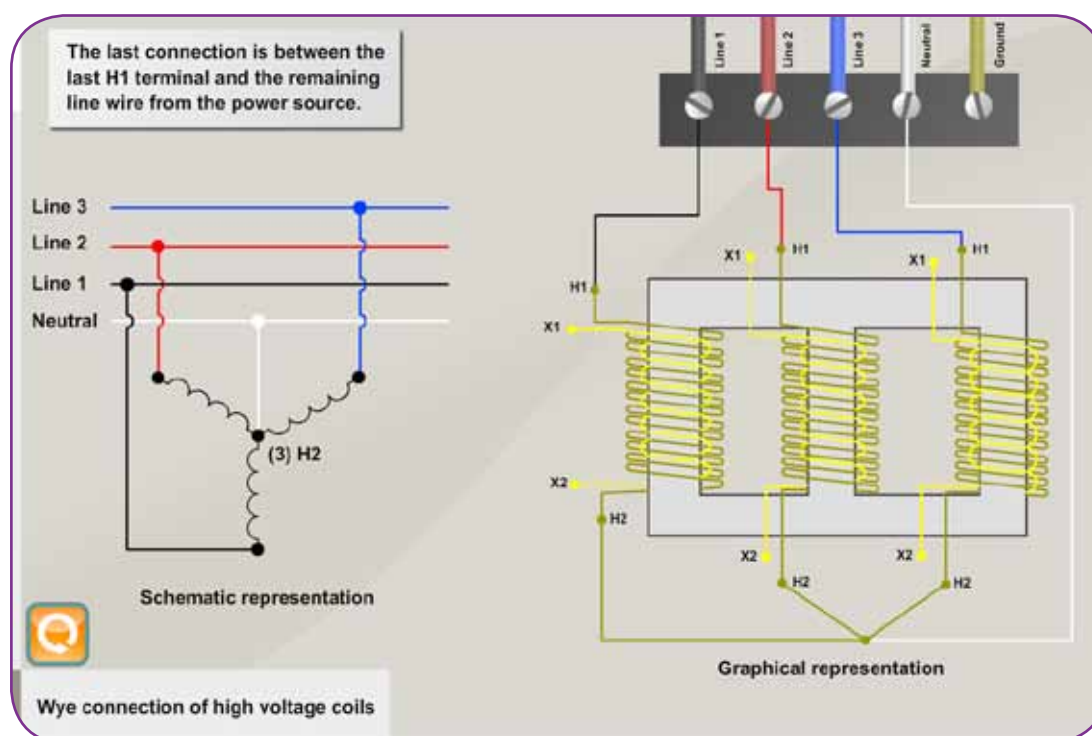
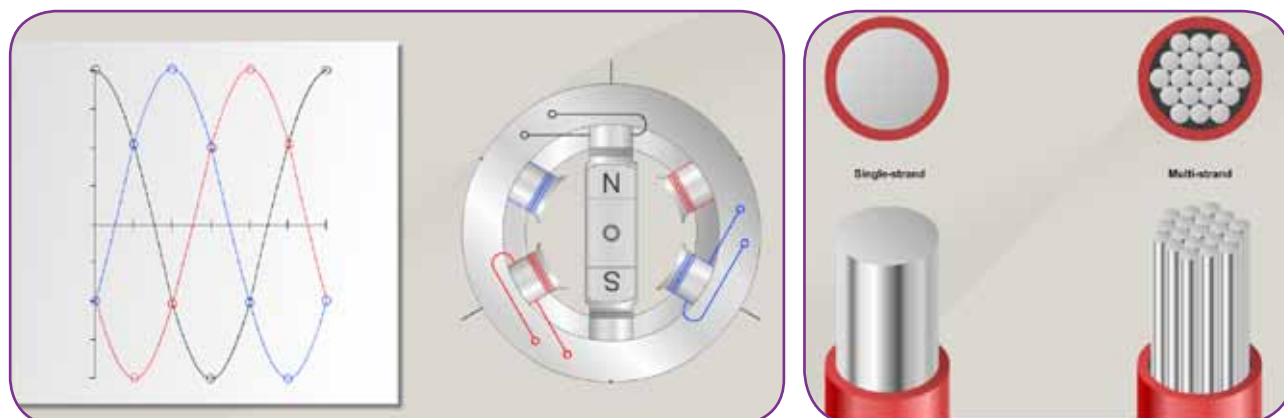
Semiconductors

Solid state devices



■ SMC-106 – Introduction to wiring

This course presents the components, tools and procedures used in connecting and wiring control panels and electrical facilities. It explains earthing, connectors, cable sizes and the different ways of connecting transformers.



CHAPTERS

Wires, connectors and circuit protection

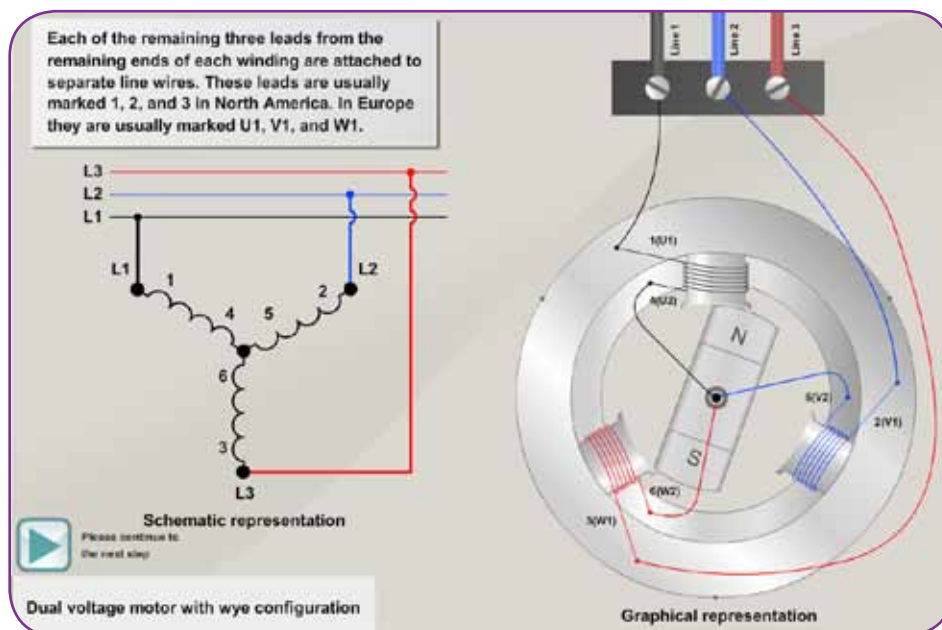
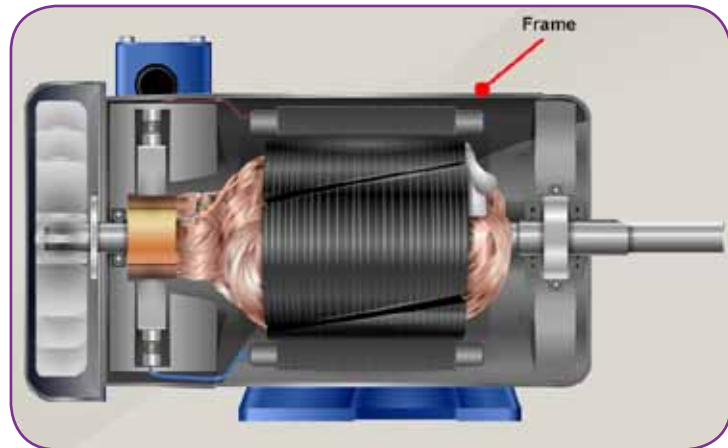
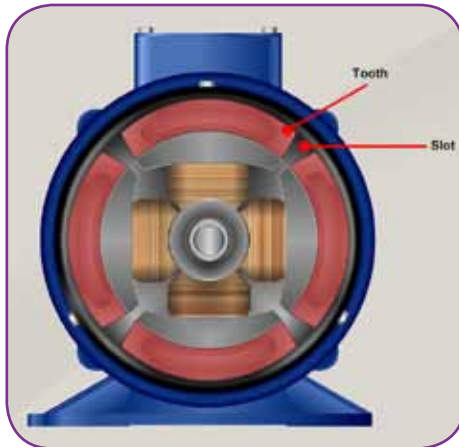
Connecting transformers





■ SMC-107 – Introduction to electric motors

This course studies the operating principles for basic electrical machines such as direct current and alternate current motors, both single phase and three phase. It also studies connections, implementation and the most typical applications for these motors.



CHAPTERS

DC motors

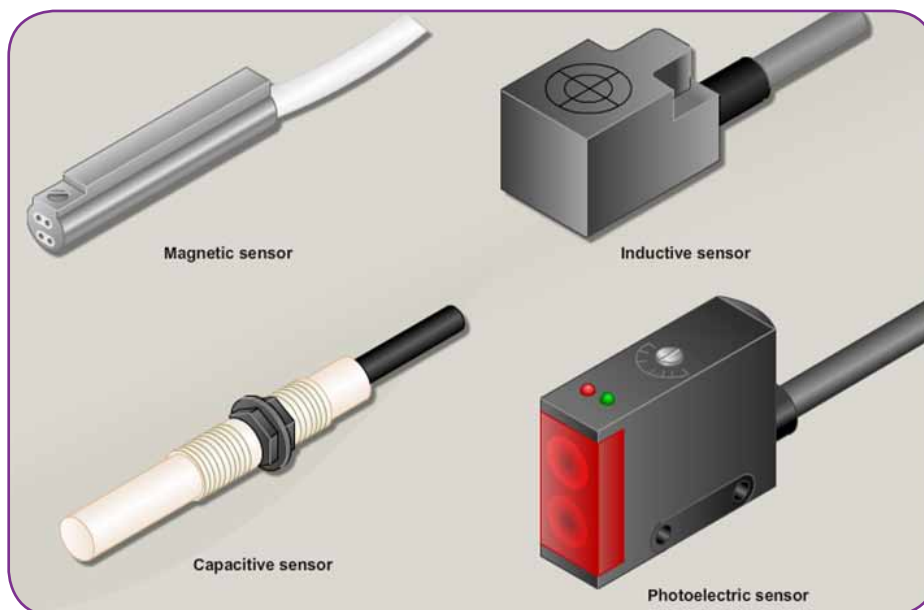
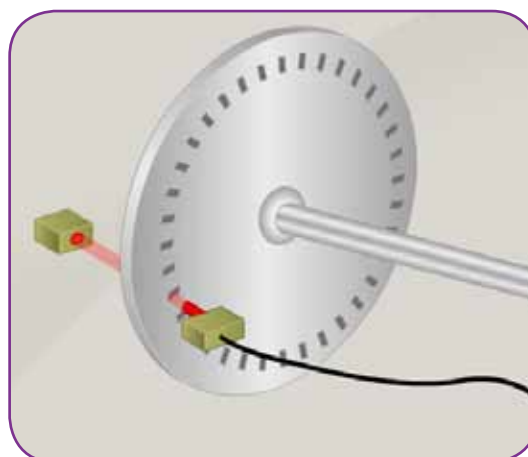
Single-phase AC motors

Three-phase AC motors



■ SMC-108 – Sensors technology

This course allows users to become familiar with the fascinating world of sensors and transducers used in industry. Starting with general applications, features and parameters of sensors, it runs through the different types of sensors, their application and symbols.



CHAPTERS

Introduction to sensors technology

Features and properties of sensors

Proximity sensor

Position, speed and acceleration sensor

Industrial process sensors

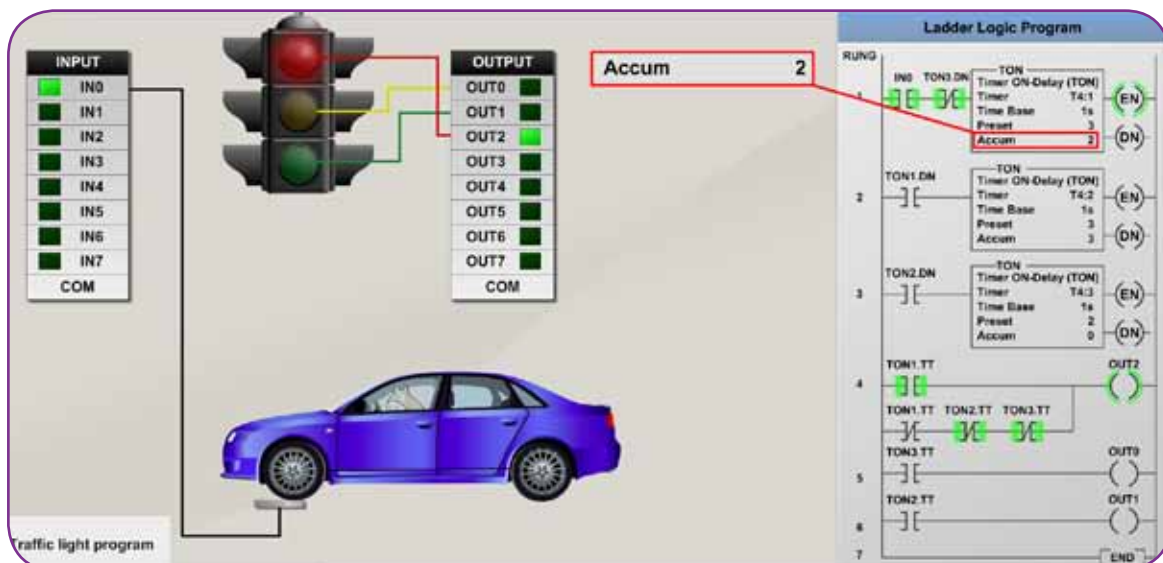
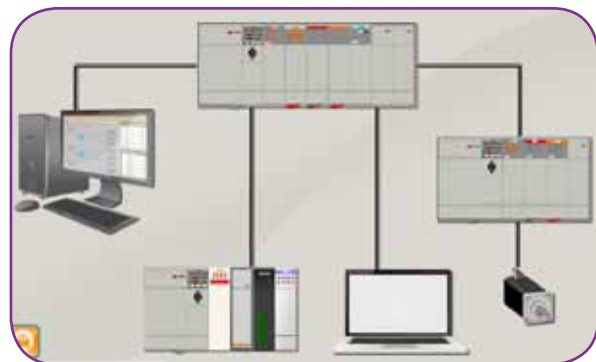
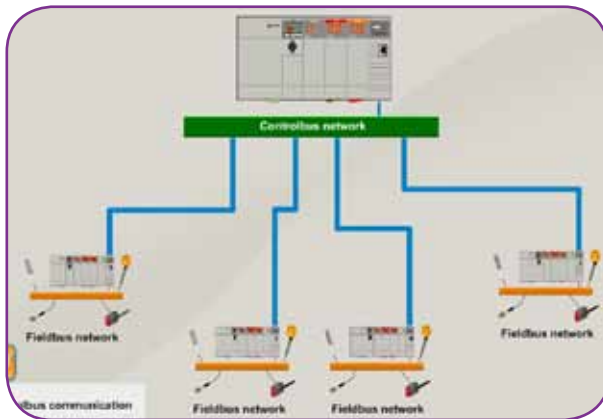
Advanced sensors





■ SMC-109 – Programmable controllers

The SMC-109 course runs through the different types of Programmable Controllers, focussing on a study of Programmable Logic Controllers (PLC). It introduces digital electronics to be able to understand how a Programmable Controller works. It also studies its general structure, the CPU structure, general concepts of programming and applications for these devices.



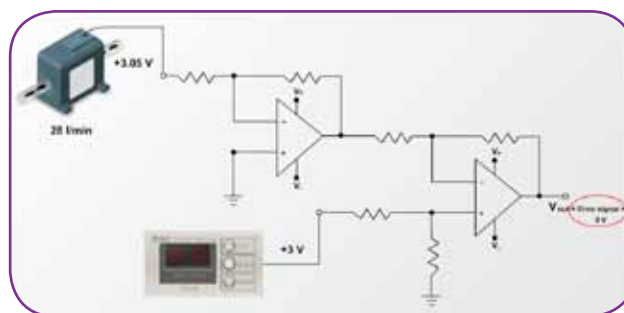
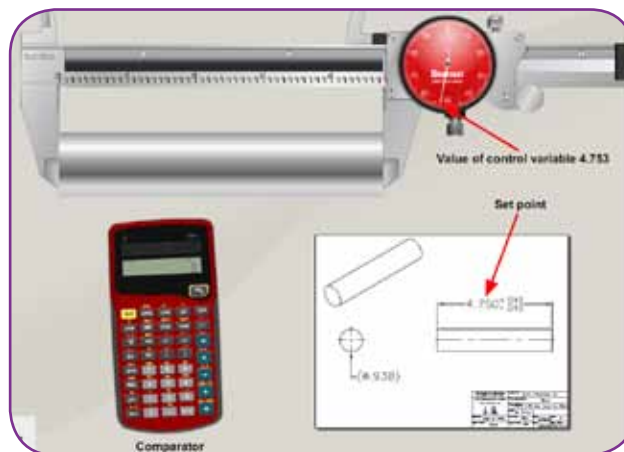
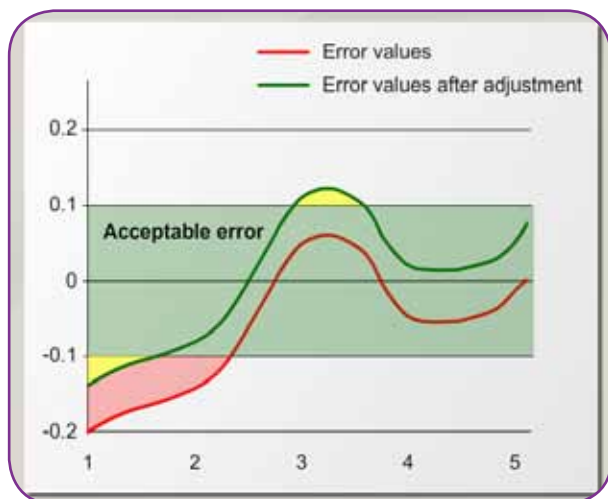
CHAPTERS

- Introduction and history
- Introduction to digital electronics
- Types and functions of PLCs
- General structure of PLC hardware
- Physical integration of PLCs
- Internal structure of the CPU
- Basic concepts of PLC programming
- Common PLC applications



■ SMC-110 – Process controls

This course introduces the user to Process Control systems. The different control types are analysed, looking more closely at the different blocks making up a closed loop controller, finishing off with an introduction to multi-variable control systems.



CHAPTERS

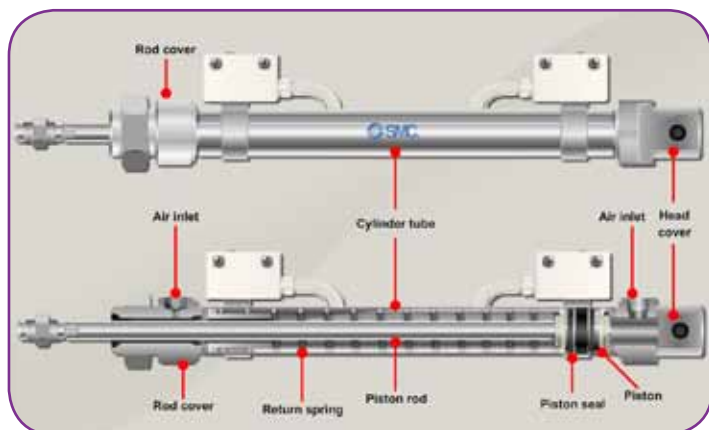
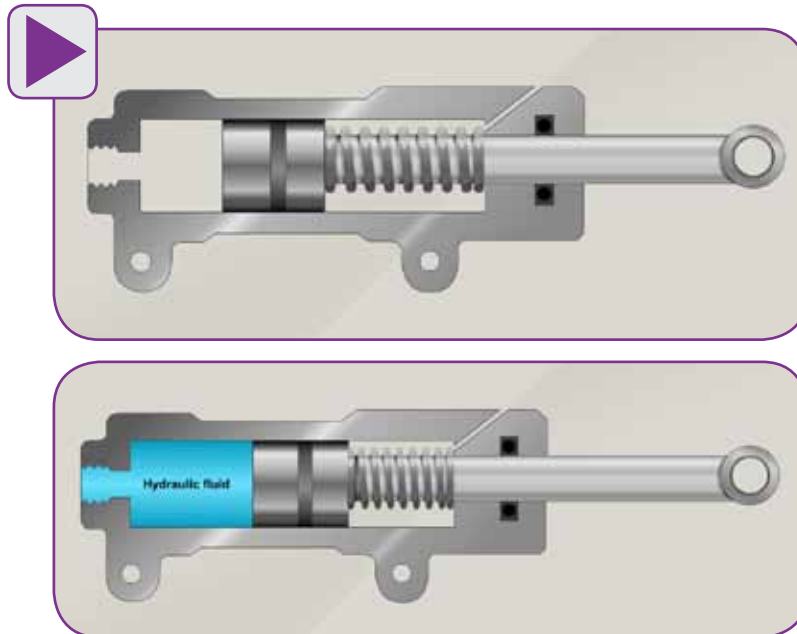
- Introduction to Process control
- Process control systems
- Set point / Comparator
- Controller (PID Control)
- Multivariable Processes





■ SMC-111 – Hydraulics / electro-hydraulics

The SMC-111 course focuses on studying the hydraulic systems used in automated industry. It explains the different components used in hydraulics, electro-hydraulics and proportional hydraulics, analysing their operating principles, applied physical laws and symbols.



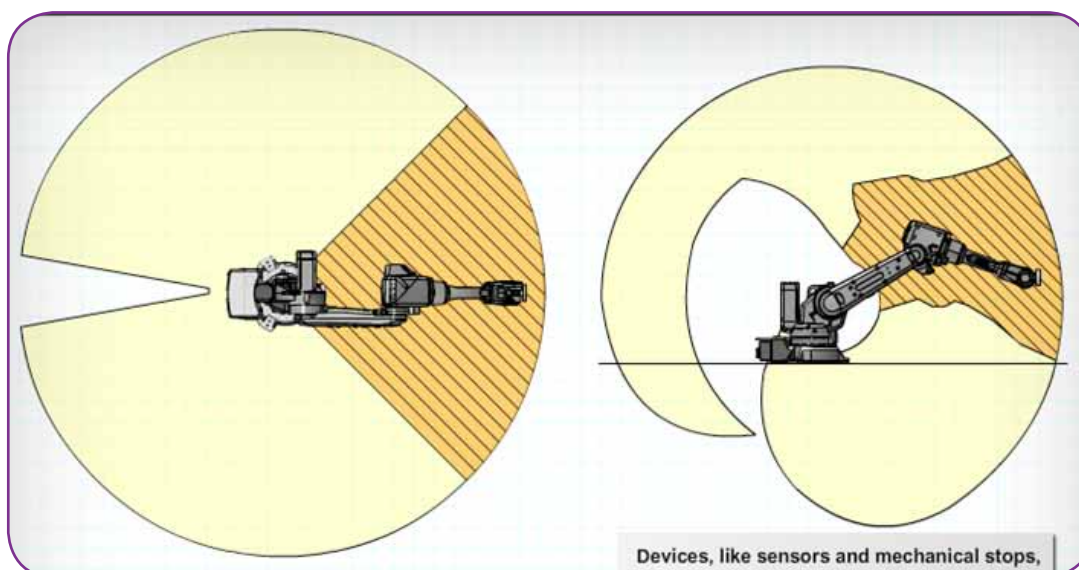
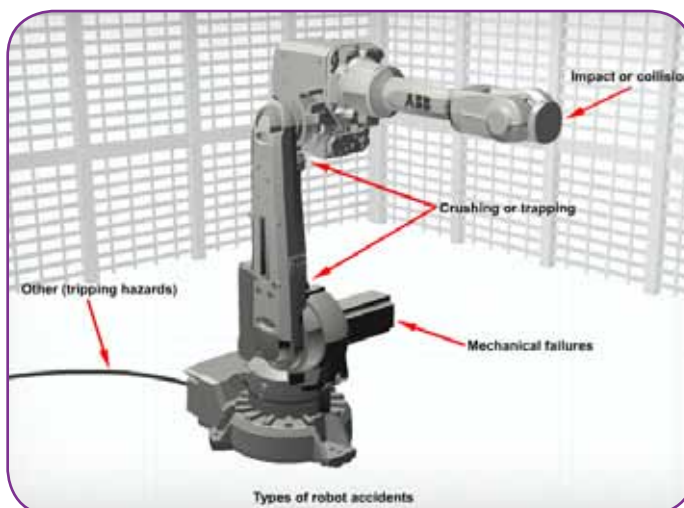
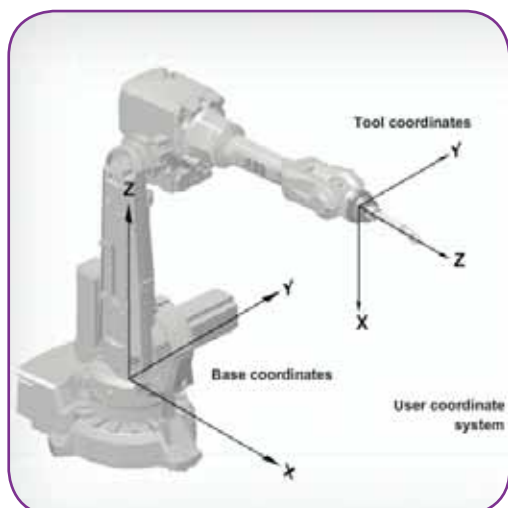
CHAPTERS

| | |
|------------------------------|---------------------------------|
| Introduction to hydraulics | Distribution valves |
| Hydraulic systems | Other hydraulic components |
| Fluids & Pumping units | Proportional / Servo hydraulics |
| Safety in hydraulics systems | Applications of hydraulics |
| Hydraulic actuators | |



■ SMC-113 - Robotics

In this course, once the introduction to robotic systems is complete, we explore, in greater depth, these systems' security aspects, robot structure, programming and the most common industrial applications.



CHAPTERS

| | |
|--------------------------|-------------------------------|
| Introduction to robotics | Controller and End effectors |
| Robot safety | Robot programs |
| Robot axes | Industrial robot applications |
| Robot manipulator | |

