

www.edibon.com
 edibon@edibon.com
 9161998647
 916199363
 SPAIN. (Madrid). LEGANÉS. (Madrid). SPAIN. Phone: +34 916199363. Fax: +34 9161998647. Poligono Industrial San José de Valderas. 28918 LEGANÉS. (Madrid). SPAIN.

Index
Units:

	Page n°:
1.- Physics ..(www.edibon.com->Products->Products range->Units->1.-Physics).....	2
2.- Electronics ..(www.edibon.com->Products->Products range->Units->2.-Electronics).....	2-3
3.- Communications ..(www.edibon.com->Products->Products range->Units->3.-Communications).....	3
4.- Electricity ..(www.edibon.com->Products->Products range->Units->4.-Electricity).....	4-6
5.- Energy ..(www.edibon.com->Products->Products range->Units->5.-Energy).....	7
6.- Systems & Automatics ..(www.edibon.com->Products->Products range->Units->6.-Systems & Automatics).....	7
7.- Mechanics & Materials ..(www.edibon.com->Products->Products range->Units->7.-Mechanics & Materials).....	8
8.- Fluid Mechanics & Aerodynamics ..(www.edibon.com->Products->Products range->Units->8.-Fluid Mechanics & Aerodynamics).....	9-10
9.- Thermodynamics & Thermotechnics ..(www.edibon.com->Products->Products range->Units->9.-Thermodynamics & Thermotechnics).....	10-12
10.- Process Control ..(www.edibon.com->Products->Products range->Units->10.-Process Control).....	13
11.- Chemical Engineering ..(www.edibon.com->Products->Products range->Units->11.-Chemical Engineering).....	14
12.- Food & Water Technologies ..(www.edibon.com->Products->Products range->Units->12.-Food & Water Technologies).....	15
13.- Environment ..(www.edibon.com->Products->Products range->Units->13.-Environment).....	15

Systems: (page 16)

Basic Systems:

- SE. Secondary Education.
- PL. Physics Laboratory.
- NTTSC. New Technologies Technical Skills Center.

New Teaching Systems:

- Mini ESN. EDIBON Mini Scada-Net System.
- ESN. EDIBON Scada-Net System.
- TPDL. Technical Professional Distance Learning.

Advanced Systems:

- RCPCL. Regulation, Control and Process Control Laboratory.
- PCMTC. Process Control and Maintenance Training Center.
- TTTARC. Teachers Technical Training and Applied Research Center.

Industrial Systems:

- RPCTC. Refinery and Process Control Training Center.
- PPTC. Power Plants Training Center.
- FTTP. Food Technology: Pilot Plants.

Turn-Key Projects for: (page 16)

- Secondary Education.
- Basic Technical and Vocational Education.
- Technical and Vocational Education.
- Higher Technical Education.

Custom made Units

EDIBON can offer the design of teaching and research units, in accordance with the customer requirements, by using the EDIBON know-how and computer controlled system, as we have developed big amount of new Teaching and Research Technology.

Other units

See EDILAB products. (www.edilab.es/BETA/products)

Teaching Techniques Used

- * 3D= EDIBON Three Dimensions System.
Real Time Control, obtaining results in Three Dimensions.
- CAI= Computer Aided Instruction Software System.
The computer guides the student what to do and the teacher controls the student work.
- CAL= Computer Aided Learning Software (Results Calculation and Analysis).
- EDAS/VIS= EDIBON Data Acquisition System/Virtual Instrumentation System.
- MUAD= Electric Power Data Acquisition System.
- * RTC= EDIBON Real Time Control System.
Electronic Real Time Control for Advanced Electronics.
- * HYBRID= EDIBON Hybrid System (Energy).
It uses Real Units combined with Software, using mathematical models.
- * PHOTOELASTICITY= For Strength of Materials.
- * SCADA= EDIBON Computer Control System: Computer Control + Data Acquisition + Data Management.
Multicontrol + Real Time Control + Open Control.
- * PLC= Industrial Control using PLC.
- * Mini ESN= EDIBON Mini-Scada-Net System.
30 students can work simultaneously doing Real Time Computer Control.
- * ESN= EDIBON Scada-Net System (Management Control from a local NET).
30 students can work simultaneously doing Real Time Computer Control.
- * ETDL= EDIBON Technical Distance Learning System.
The Scada-Net System can be controlled through Internet at any distance.
- FSS= Faults Simulation System.

* =These Teaching Techniques are EDIBON PATENT.



1.-Physics

1.1.- 3D Physics (Three Dimensions) (It uses 3D System)

- EFAC Computer Controlled Three Dimensions (3D) Physics System:

- FUB **Base structure and Robot.** (Common for all applications type "F").

Sets (sensor+elements+control software) required for each application:

- FCE **Set for Electrical Fields application.**
- FCM **Set for Magnetic Fields application.**
- FM **Set for Mechanics Study application.**
- FAC **Set for Acoustics Study application.**
- FOP **Set for Optics Study application.**
- FTT **Set for Thermodynamics Study application.**

2.- Electronics

2.1.- Basic Electronics (It uses CAI and/or LIEBA/CAL and/or EDAS/VIS System)

- LIEBA **Basic Electronics and Electricity Integrated Laboratory:**

Power supplies: (one power supply required)

- FA-CO **Power Supply.**
- EBC-100 **Base Unit, with built-in power supply.**

Available Modules:

Basic Electricity:

- M1 **Direct Current (D.C.) Circuits.**
- M2 **Alternating Current (A.C.) Circuits.**
- M16 **Electric Networks.**
- M17 **Electromagnetism.**
- M18 **Three-phase circuits.**

Basic Electronics. Fundamentals:

- M3 **Semiconductors I.**
- M4 **Semiconductors II.**
- M5 **Power Supplies.**
- M6 **Oscillators.**
- M7 **Operational Amplifiers.**
- M8 **Filters.**
- M9 **Power Electronics.**
- M10 **Digital Systems & Converters.**
- M11 **Digital Electronics Fundamentals.**
- M12 **Basic Combinational Circuits.**
- M13 **Basic Sequential Circuits.**
- M14 **Optoelectronics.**
- M15 **Development Module.**

Basic Electronics: Microprocessors:

- M30 **16 Bits Microprocessor.** (EDILAB)
- M31 **Z80 Microprocessor.** (EDILAB)
- M-EB **Practical Expansion Boards.** (EDILAB)
- M32 **8051 Microcontroller.** (EDILAB)
- M33 **68000 Microprocessor.** (EDILAB)
- M34 **DSP Microprocessor.** (EDILAB)

Basic Electronics: Transducers:

- M41 **Resistance Transducers.**
- M43 **Applications of Temperature.**
- M44 **Applications of Light.**
- M45 **Linear Position and Force.**
- M46 **Environmental Measurements.**
- M47 **Rotational Speed & Position Control.**
- M48 **Sounds Measurements.**
- M49 **Applications of Temperature and Pressure.**

Basic Electronics: Control Electronics:

- M60 **Analog/Digital Converters.**
- M61 **Digital/Analog Converters.**
- M65 **Control and Regulation.**

Basic Electronics: Any other possibilities:

- M99 **Expansion Board.**

Some electronic sub-boards available:

- M99-1 **Analogical Commutator.**
- M99-2 **Analogical Multiplier.**
- M99-3 **Function Generator.**
- M99-4 **AM Modulator.**
- M99-5 **AM Demodulator.**

* We can develop any electronic sub-board according to the application required by the customer.

Data Acquisition and Virtual Instrumentation:

- EDAS/VIS 0.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Modules type "M".

- EDAS/VIS 1.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Modules type "M".

Software:

- CAI **Computer Aided Instruction Software System**, complementary to the Modules type "M".

- LIEBA/CAL **Computer Aided Learning Software (Results Calculation and Analysis)**, complementary to the Modules type "M".

2.2.- Electronics Kits (It uses CAI and/or CAL and/or EDAS/VIS System)

- M-KITS **Basic Electronics and Electricity Assembly Kits:**

Common and required elements:

- FA-CO **Power Supply.**
- M15 **Development module.**

Available Kits:

- M1-KIT **Direct Current (D.C.) Circuits.**
- M2-KIT **Alternating Current (A.C.) Circuits.**
- M3-KIT **Semiconductors I.**
- M4-KIT **Semiconductors II.**
- M5-KIT **Power Supplies.**
- M6-KIT **Oscillators.**
- M7-KIT **Operational Amplifiers.**
- M8-KIT **Filters.**
- M9-KIT **Power Electronics.**
- M10-KIT **Digital Systems & Converters.**
- M11-KIT **Digital Electronics Fundamentals.**
- M12-KIT **Basic Combinational Circuits.**
- M13-KIT **Basic Sequential Circuits.**
- M14-KIT **Optoelectronics.**
- M16-KIT **Electric Networks.**

Data Acquisition and Virtual Instrumentation:

- EDAS/VIS 0.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Kits type "M-KIT".

- EDAS/VIS 1.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Kits type "M-KIT".

Software:

- CAI **Computer Aided Instruction Software System**, complementary to the Kits type "M-KIT".

- CAL **Computer Aided Learning Software (Results Calculation and Analysis)**, complementary to the Kits type "M-KIT".

Units
2.3.- Transducers and Sensors

- SAIT **Transducers and Instrumentation Trainer.**
Additional Data Acquisition and Virtual Instrumentation:
 - EDAS/VIS 0.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with "SAIT" Trainer.
 - EDAS/VIS 1.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with "SAIT" Trainer.Additional Software:
 - CAI **Computer Aided Instruction Software System**, complementary to "SAIT" Trainer.
- BS **Modular System for the Study of Sensors:** (It uses SCADA System)
Base Units:
 (one base unit is required)
 - BSPC Computer Controlled **Base unit**.
 - BSUB **Base Unit**.Test Modules:
 - BS1 **Vibration and/or Deformation Test Module**.
 - BS2 **Temperature Test Module**.
 - BS3 **Pressure Test Module**.
 - BS4 **Flow Test Module**.
 - BS5 **Ovens Test Module**.
 - BS6 **Liquid Level Test Module**.
 - BS7 **Tachometers Test Module**.
 - BS8 **Proximity Test Module**.
 - BS9 **Pneumatic Test Module**.
 - BS10 **Light Test Module**.
- SPC **Computer Controlled Weighing System.** (It uses SCADA System)
- SCSP **Pressure Sensors Calibration System.**
- SCST **Temperature Sensors Calibration System.**
- SCSCN **Flow and Level Sensors Calibration System.**

2.4.- Control Electronics (Advanced) (It uses RTC System)

- RYC **Computer Controlled Teaching Unit for the Study of Regulation and Control.**
- RYC/SOF **Regulation and Control Simulation Software.**
- CADDA **Computer Controlled Teaching Unit for the Study of Analog/Digital and Digital/Analog Converters.**
- CADDA/SOF **Analog/Digital and Digital/Analog Converters Simulation Software.**

2.5.- Digital Electronics (Advanced) (It uses RTC System)

- TDS **Computer Controlled Teaching Unit for the Study of Digital Signal Processing.**
- TDS/SOF **Digital Signal Processing Simulation Software.**

2.6.- Industrial Electronics (Advanced) (It uses RTC System)

- TECNEL **Computer Controlled Teaching Unit for the Study of Power Electronics** (with IGBTs). (Converters: DC/AC + AC/DC + DC/DC + AC/AC).
- TECNEL/B **Computer Controlled Basic Teaching Unit for the Study of Power Electronics** (no IGBTs). (Converters: AC/DC + AC/AC).
- PECADS **Power Electronics Computer Aided Design and Simulation Software.** (Converters: DC/AC, AC/DC, DC/DC, AC/AC).
- SERIN/CA **Computer Controlled Advanced Industrial Servosystems Trainer (for AC motors).**
- SERIN/CC **Computer Controlled Advanced Industrial Servosystems Trainer (for DC motors).**
- SERIN/CACC **Computer Controlled Advanced Industrial Servosystems Trainer (for AC and DC motors).**
- SERIN/CCB **Basic Servosystems Trainer (DC motors).**
- SERIN/CAB **Basic Servosystems Trainer (AC motors).**
- SERVOS/SOF **Servosystems Simulation Software.**

3.- Communications
3.1.- Analog Communications (It uses CAI and/or LICOMBA/CAL and/or EDAS/VIS System)

- LICOMBA **Communications Integrated Laboratory:**
Power supplies: (one power supply required)
 - FA-CO **Power Supply.**
 - EBC-100 **Base Unit, with built-in power supply.**Available Analog Communications Modules:
 - ED-CAM **AM Communications.**
 - ED-CFM **FM Communications.**Data Acquisition and Virtual Instrumentation:
 - EDAS/VIS 0.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Modules "ED-CAM and ED-CFM".
 - EDAS/VIS 1.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Modules "ED-CAM and ED-CFM".Software:
 - CAI **Computer Aided Instruction Software System**, complementary to the Modules "ED-CAM and ED-CFM".
 - LICOMBA/CAL **Computer Aided Learning Software (Results Calculation and Analysis)**, complementary to the Modules "ED-CAM and ED-CFM".

3.2.- Digital Communications (It uses CAI and/or LICOMBA/CAL and/or EDAS/VIS System)

- LICOMBA **Communications Integrated Laboratory:**
Power supplies: (one power supply required)
 - FA-CO **Power Supply.**
 - EBC-100 **Base Unit, with built-in power supply.**Available Digital Communications Modules:
 - EDICOM1 **Signals Sampling and Reconstruction.**
 - EDICOM2 **Time Division Multiplex (TDM). PAM Transmitter and Receiver.**
 - EDICOM3 **MIC-TDM Transmission/Reception.**
 - EDICOM4 **Delta Modulation and Demodulation.**
 - EDICOM5 **Line codes. Signal Modulation and Demodulation.**
 - EDICOM6 **Optical Fibre Transmission and Reception.**Data Acquisition and Virtual Instrumentation:
 - EDAS/VIS 0.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Modules type "EDICOM".
 - EDAS/VIS 1.25 **EDIBON Data Acquisition System/Virtual Instrumentation System**, for being used with the Modules type "EDICOM".Software:
 - CAI **Computer Aided Instruction Software System**, complementary to the Modules type "EDICOM".
 - LICOMBA/CAL **Computer Aided Learning Software (Results Calculation and Analysis)**, complementary to the Modules type "EDICOM".

3.3.- Telephony

- CODITEL **Telephony Systems Trainer.**

3.4.- Global Positioning Systems (GPS)

- EGPS **GPS Trainer.**

4.- Electricity

4.1.- Basic Electricity (It uses MUAD and/or CAI and/or CAL System)

- LIELBA Electrical Installations Integrated Laboratory:

Frames: (applications support)

- BASB Basic frame.
- BASS Double frame, single side working post.

Available APPLICATIONS:

Domestic Electrical Installations:

- AD1A Robbery Alarm Station.
- AD3A Fire Alarm Station.
- AD5 Temporization of Stairs.
- AD6A Luminosity Control Station.
- AD8 Blinds Activator.
- AD9A Heating Control Station.
- AD11A Network Analyzer.
- AD13 Audio Door entry System.
- AD14 Audio and Video Door entry System.
- AD15A Position Control Station.
- AD17A Photoelectric Control Position Station.
- AD24 Position Switch.
- AD19A Sound Station.
- AD22 Flooding control station.
- AD23 Wireless Basic Control Station (RF).
- AD25A Control Station for Domestic Electric Services through the Telephone.
- AD28A Integral Control Station of Domestic Electric Systems.
- AD30 Gas Control Station.
- AD31 Movement and Sound Detection and Control.
- AD32 24 Vac/12 Vdc Circuits Analyzer.
- AD33 Installations Faults Simulator.

Industrial Electrical Installations:

- AI1 Star-Delta Starter.
- AI2 Starter through Auto-Transformer.
- AI3 Speed Commutator for Dahlander Motor.

- AI4 Starter-Inverter.
- AI5 AC Wound Rotor Motor Starter.
- AI6 DC Motor Starter.
- AI7 Automatic Change of Speed of a Dahlander Motor with Change of Direction.
- AI8 Reactive Power Compensation (Power Factor Correction).
- AI9 People Safety Against Indirect Electrical Contacts in TT Neutral Regimen.
- AI10 People Safety Against Indirect Electrical Contacts in TN Neutral Regimen.
- AI11 People Safety Against Indirect Electrical Contacts in IT Neutral Regimen.
- AI12 Modular Trainer (AC Motors).
- AI13 Modular Trainer for Electrotecnics.
- AI13-A Modular Trainer for Electrotecnics (RLC Circuits).
- AI13-B Modular Trainer for Electrotecnics (Electrostatic Kit).
- AI13-C Modular Trainer for Electrotecnics (Motors).
- AI13-D Modular Trainer for Electrotecnics (Transformers).
- AI13-E Modular Trainer for Electrotecnics (Lighting).

Energy Installations:

- AE1 Aerial Line Model.
- AE2 Reactive Energy Control and Compensation.
- AE3 Test Unit for Magneto-Thermal Automatic Switches.
- AE4 Test Unit for Differential Automatic Switches.
- AE5 Relay Control Station.
- AE6 Energy Counters Control Station.
- AE7 Multi-Functional Electrical Protection Station.
- AE8 Power & Torque Measurements of Electrical Motors.
- AE9 Directional Relay: Earth Fault Detection. Directional Power Flow Detection. Reactive Power Flow Detection.

Data Acquisition:

- MUAD Electric Power Data Acquisition System, for being used with the LIELBA Applications type "A".

Software:

- CAI Computer Aided Instruction Software System, complementary to the LIELBA Applications type "A".
- CAL Computer Aided Learning Software (Results Calculation and Analysis), complementary to the LIELBA Applications type "A".

- ELE-KITS Electrical Installations Assembly Kits:
Available ASSEMBLY KITS:

Domestic Electrical Installations:

- KD1A Robbery Alarm Station Kit.
- KD3A Fire Alarm Station Kit.
- KD5 Temporization of Stairs Kit.
- KD6A Luminosity Control Station Kit.
- KD8 Blinds Activator Kit.
- KD9A Heating Control Station Kit.
- KD11A Network Analyzer Kit.
- KD13 Audio Door entry System Kit.
- KD14 Audio and Video Door entry System Kit.
- KD15A Position Control Station Kit.
- KD17A Photoelectric Control Position Station Kit.
- KD24 Position Switch Kit.
- KD19A Sound Station Kit.
- KD22 Flooding Control Station Kit.
- KD23 Wireless Basic Control Station (RF) Kit.
- KD25A Kit of Control Station for Domestic Electric Services through the Telephone.
- KD28A Kit of Integral Control Station of Domestic Electric Systems.
- KD30 Gas Control Station Kit.
- KD31 Movement and Sound Detection and Control Kit.
- KD32 24 Vac/12 Vdc Circuits Analyzer Kit.
- KD33 Installations Faults Simulator Kit.

Industrial Electrical Installations:

- KI1 Star-Delta Starter Kit.
- KI2 Starter through Auto-Transformer kit.
- KI3 Speed Commutator for Dahlander Motor Kit.
- KI4 Starter-Inverter Kit.
- KI5 AC Wound Rotor Motor Starter Kit.

- KI6 DC Motor Starter Kit.
- KI7 Kit of Automatic Change of Speed of a Dahlander Motor with Change of Direction.
- KI8 Kit of Reactive Power Compensation (Power Factor Correction).
- KI9 Kit of People Safety Against Indirect Electrical Contacts in TT Neutral Regimen.
- KI10 Kit of People Safety Against Indirect Electrical Contacts in TN Neutral Regimen.
- KI11 Kit of People Safety Against Indirect Electrical Contacts in IT Neutral Regimen.

Energy Installations:

- KE1 Aerial Line Model Kit.
- KE2 Kit of Reactive Energy Control and Compensation.
- KE3 Kit of Test Unit for Magneto-Thermal Automatic Switches.
- KE4 Kit of Test Unit for Differential Automatic Switches.
- KE5 Relay Control Station Kit.
- KE6 Energy Counters Control Station Kit.
- KE7 Multi-Functional Electrical Protection Station Kit.
- KE8 Kit of Power & Torque Measurements of Electrical Motors.
- KE9 Kit of Directional Relay: Earth Fault Detection. Directional Power Flow Detection. Reactive Power Flow Detection.

Data Acquisition:

- MUAD Electric Power Data Acquisition System, for being used with the Kits type "K".

Software:

- CAI Computer Aided Instruction Software System, complementary to the Kits type "K".
- CAL Computer Aided Learning Software (Results Calculation and Analysis), complementary to the Kits type "K".

- EIV2 Home Automation Installations Trainer.

- EIV6 Home Automation Installations Trainer.

4.2.- Electricity Demonstration

- PDL Lamps Demonstration Panel.
- PDCE-P Electric Cables Demonstration Panel (Power).
- PDCE-S Electric Cables Demonstration Panel (Signalling).
- PDF Fuses Demonstration Panel.

4.3.- Electrical Installations Workshop

- EIWS Including furniture, tools, components, etc.

4.4.- Electrical Machines

- LIMEL **Integrated Laboratory for Electrical Machines:**

Common Electrical Machines Base Units

- EME **Electrical Machines Unit.** (Advanced option).
- EME/M **Electrical Machines Unit.** (Intermediate option).
- EME/B **Electrical Machines Unit.** (Basic option).

Measurement Units

- MULT **Digital Multimeter.**
- EAL **Network Analyzer Unit.**
- EALD **Network Analyzer Unit, with Computer Data Acquisition + Oscilloscope (PC).**
- EALDG **Network Analyzer Unit, with Computer Data Acquisition + Oscilloscope (PC) + Oscilloscope Display.**
- EAM-VA **Analog Measurement Unit.**
- MUAD **Power Data Acquisition System.**

Loads

- RCL3R **Resistive, Inductive and Capacitive Loads Module.**

-Individual elements:

- IND **Inductance.**
- CON **Box of Condensers.**
- REV **Variable Resistance.**
- REF **Fixed Resistance.**

Motors

- EMT1 **D.C. Independent excitation motor-generator.**
- EMT2 **D.C. Series excitation motor-generator.**
- EMT3 **D.C. Shunt excitation motor-generator.**
- EMT4 **D.C. Compound excitation motor-generator.**
- EMT5 **D.C. Shunt-series compound excitation motor.**
- EMT6 **A.C. Synchronous alternator motor.**
- EMT7 **Asynchronous Three-phase motor of squirrel cage.**
- EMT8 **Asynchronous Three-phase motor with wound rotor.**
- EMT9 **Dahlander three-phase (two-speeds).**
- EMT10 **Asynchronous Three-phase motor of two independent speeds.**
- EMT11 **Asynchronous Single-phase motor with starting capacitor.**
- EMT12 **Universal motor (single-phase).**
- EMT14 **Repulsion motor, single-phase with short-circuited brushes.**
- EMT15 **D.C. Permanent magnet motor.**
- EMT16 **Asynchronous single-phase motor with starting and running capacitor.**
- EMT17 **Three-phase motor of squirrel cage with "Y" connection.**
- EMT18 **D.C. Brushless motor.**
- EMT19 **Stepper motor.**
- EMT20 **Asynchronous single-phase motor with split phase.**
- EMT21 **Three-phase Reluctance motor.**
- EMT22 **Single-phase Shaded Pole motor.**

Brakes

- FRE-FE **Electronic Brake.**
- DI-FRE **Pendular Dynamo Brake.**
- FREND **Dynamo Brake.**
- FRENP **Magnetic Powder Brake.**
- FREPR **Prony Brake.**
- FRECP **Eddy Current Brake.**

COMPLEMENTARY ELEMENTS:

Transformers

- ETT **Three-phase and Single-phase Transformers Unit.**
- TPPT **Three- phase Power Transformer Unit.**
- EMPTA **Auxiliary Transformer and Protection Module.**

-Individual elements:

- AUTR **Variable Auto-transformer.**
- TRANS **Single-phase transformer.**
- TRANS/3 **Three-phase transformer.**

DC Motor Speed Control

- WCC **DC Motor Speed Controller.**
- WCC/M **DC Motor Speed Controller** (intermediate option).

AC Motor Speed Control

- WCA **AC Motor Speed Controller.**
- WCA-M **AC Motor Speed Controller** (intermediate option).

PLC (Programmable Logic Controller)

- PLC-PI **PLC Module for the Control of Industrial Processes.** (For controlling the Electrical Machines Unit "EME").
- EDIBON FP-X-CPU **PLC,** with no other elements.

Tachogenerator

- TECNEL/T **Tachogenerator.**

Data Acquisition:

- MUAD **Electric Power Data Acquisition System,** for using with the Electrical Machines Unit "EME".

Software:

- CAI **Computer Aided Instruction Software System.**

- EMT-E **Motors** (available 21 different type of motors).
- EMT-S **Cut Away Motors** (available 21 different type of motors).
- ESAM **Faults Simulation Trainer in Electrical Motors.**
- ESAE **Electrical Faults Simulation Trainer.**
- EEA **Alternators Study Unit.**
- EGMG24 **Motor-Generator Group, three-phase 24 Vac, no excitation required (permanent magnets).**
- ERP **Protection Relay Test:**

- ERP-UB **Protection and Relay Test Unit** (common for the relays modules type "ERP").

Available Relays Modules:

- ERP-SFT **Overcurrent and Earth Fault Relay Module.**
- ERP-SDND **Directional/Non Directional Overcurrent Relay Module.**
- ERP-PDF **Differential Protection Relay Module.**
- ERP-MA **Feeder Management Relay Module.**
- ERP-PD **Distance Protection Relay Module.**

4.5.- Electrical Machines Kits

- EMT-KIT **Disassembly Machines Kit.**

5.- Energy

5.1.- Energy Simulation

5.2.- Energy Power Plants (It uses SCADA System)

- APSS12 **Advanced Power Plant Simulator: Generation, Transformation, Transport, Distribution and Consumption.** (11 different Power Plants can be simulated).
- MPSS **Modular Power Plant Simulator.**

5.3.- Renewable (Alternative) Energies

- EESFC **Computer Controlled Photovoltaic Solar Energy Unit.** (It uses SCADA System)
- EESFB **Photovoltaic Solar Energy Basic Unit.**
- MINI-EESF **Photovoltaic Solar Energy Modular Trainer.**
- EESTC **Computer Controlled Thermal Solar Energy Unit.** (It uses SCADA System)
- EEST **Thermal Solar Energy Unit.**
- EEEEC **Computer Controlled Wind Energy Unit.** (It uses SCADA System)
- EEE **Wind Energy Unit.**
- BPPC **Computer Controlled Teaching and Research Biodiesel Pilot Plant.** (It uses SCADA System)
- EPCPEMC **Computer Controlled PEM Fuel Cell Unit.** (It uses SCADA System)
- EPCAC **Computer Controlled Alkaline Fuel Cell Unit.** (It uses SCADA System)

5.4.- Relays Units

- ERP **Protection Relay Test:**
 - ERP-UB **Protection and Relay Test Unit** (common for the relays modules type "ERP").

Available Relays Modules:

 - ERP-SFT **Overcurrent and Earth Fault Relay Module.**
 - ERP-SDND **Directional/Non Directional Overcurrent Relay Module.**
 - ERP-PDF **Differential Protection Relay Module.**
 - ERP-MA **Feeder Management Relay Module.**
 - ERP-PD **Distance Protection Relay Module.**

6.- Systems & Automatics

6.1.- Systems

- SCE **Computer Controlled Generating Stations Control and Regulation Simulator (Systems Engineering).** (It uses SCADA System)
- SBB **Ball and Beam System.**
- CPVM **DC Motor Position and Speed Control.**

6.2.- Automatics (PLC)

- PLC-PI **PLC Module for the Control of Industrial Processes** (for working with EDIBON Computerized Teaching Units).
- PLCE **PLC Trainer.**
 - Available Several PLC Simulation Applications.
 - Available Several PLC Industrial Models Applications.
- EDIBON FP-X-CPU **PLC**, with no additional elements.

6.3.- Automatics (Regulation and Control) (It uses RTC System)

- RYC **Computer Controlled Teaching Unit for the Study of Regulation and Control.**
- RYC/SOF **Regulation and Control Simulation Software Package.**

6.4.- Automatics (Control)

- EPID-T **Industrial Regulation Trainer, PID type (Temperature).**
- CECI **Industrial Controllers Trainer.**
- CRCI **Industrial Controllers Networking.**
- CEAB **Trainer for Field Bus Applications.**
- CEAC **Controller Tuning Trainer.**

Units**7.- Mechanics & Materials****7.1.- Basic Mechanics** (It uses CAI and/or LIMEBA/CAL System)

- LIMEBA **Basic Mechanics Integrated Laboratory:**
 - Modules:**
 - MECA1 **Statics Experiments.**
 - MECA2 **Load Elevation Mechanisms Experiments.**
 - MECA3 **Transmissions Experiments.**
 - MECA4 **Dynamics Experiments.**
 - MECA5 **Friction Experiments.**
 - MECA6 **Special Mechanisms Experiments.**
 - Software:**
 - CAI **Computer Aided Instruction Software System**, complementary to the Modules type "MECA".
 - LIMEBA/CAL **Computer Aided Learning Software System (Results Calculation and Analysis)**, complementary to the Modules type "MECA".

7.2.- General Mechanics**7.2.1.- Automotive Mechanisms**

- MFT **Drum Brake System.**
- MEM **Plate Clutch.**
- MFD **Disk Brake.**
- MCC **Gearbox.**
- MDC **Differential-Crownwheel and Pinion.**
- MFF **Braking and Accelerating Forces Unit.**
- MGE **Gear Generation Unit.**

7.2.2.- Gears and Transmissions

- MEC **Overdrive Unit.**
- MEE **Geared Lifting Machine.**
- MBW **Borg-Warner Automatic Transmission.**
- MED **Static & Dynamic Balancing Unit.**
- MTE1 **Epicyclic Gear Unit (1 element).**
- MTE2 **Epicyclic Gear Unit (2 elements).**
- MTE3 **Epicyclic Gear Unit (3 elements).**
- MTE4 **Torque Reaction Kit for use with MTE3.**

7.2.3.- Mechanisms

- MSH **Simple Hydraulic System.**
- MBD **Slider Crank Mechanism.**
- MYE **Scotch Yoke Mechanism.**
- MBM1 **Slotted Link Mechanism.**
- MBM2 **Whitworth Quick Return Mechanism.**
- MCA **Chain Mechanism.**
- MME **Geneva Stop Mechanism.**
- MAC **Coupling Mechanism.**
- MUN **Hook's Joint Mechanism.**
- MEX **Cam and Follower Mechanism.**
- MUV **Constant Velocity Joint Mechanism.**
- MBI **Crank Mechanism.**

7.2.4.- Lubrication. Wear. Friction

- MCF **Belt Friction Unit.**
- MEF **Friction Study Unit.**

7.3.- Automotive**7.3.1.- Sensors and Basic Electricity of Automobile****7.3.2.- Electricity and Electronics of Automobile****7.3.3.- Motors****7.3.4.- Injection Systems****7.3.5.- General Automotive Mechanics****7.4.- Special Mechanics & Foundry**

- MCAM **Bell Casting Basic Training Set.**
- MCLA **Foundry Building-up Training Set 1.**
- MCEN **Centrifugal Casting Building-up Training Set 2.**

7.5.- Strength of Materials**7.5.1.- General Strength Of Materials**

- MVV **Unsymmetrical Cantilever Unit .**
- MUP **Loading of Struts Unit.**
- MTP **Twist & Bend Machine.**
- MFV **Beam Deflection Unit.**
- MTB **Torsion Unit.**
- MFLT **Strut Unit.**
- MVS **Suspension Bridge Unit.**
- MFL **Two Pinned Arch Unit.**
- MPO **Portal Frame Unit.**
- MDB **Deflection of Curved Bars Unit.**
- MMF **Shear Force and Bending Momentum Unit.**
- MVL **Free Vibration Unit.**
- MVLF **Free & Forced Vibration Unit.**
- MOT **Torsional Oscillations Unit.**
- MAE **Acceleration of Geared Systems Unit.**
- MES **Simple Balancing Unit.**
- MBU **Universal Bench Mounted Frame.**
- MCG **Strain Gauge Calibration Unit**
- MCD **Thin Cylinder Unit.**
- EEFC **Computer Controlled Fatigue Testing Unit.** (It uses SCADA System)
- EEF **Fatigue Testing Unit.**
- EEU/20KN **Universal Material Testing Unit.**
- EEFCR **Creep Testing Unit.**
- EEICI **Charpy and Izod Impact Testing Unit.**
- EEDB **Brinell Hardness Testing Unit.**

7.5.2.- Strength of Materials (Photoelasticity)

(It uses PHOTOELASTICITY System)

- EFO **Photoelasticity Unit** (qualitative tests).
- EFOC **Photoelasticity Unit with strain gauge measurer** (qualitative and quantitative tests, using strain gauges).
- EFO/RMC **Photoelasticity Unit with Artificial Vision** (qualitative and quantitative tests, using artificial vision).

7.6.- Basic Cut Away Mechanics**7.7.- General Cut Away Mechanics****7.8.- Building** (It uses SCADA System)

- TIAC **Computer Controlled Acoustic Impedance Tube/Acoustic Insulation Test Unit.**
- TDRC **Computer Controlled Noise Control Demonstration Unit.**
- TEVC **Computer Controlled Ventilation Trainer.**
- TCMC **Computer Controlled Thermal Conductivity of Building and Insulating Materials Unit.**

7.9.- Civil Engineering**7.10.-Agricultural Engineering****7.11.-Other Engineerings**

8.- Fluid Mechanics & Aerodynamics

8.1.- Fluid Mechanics (Basic) (It uses CAI and/or FME/CAL and/or BDAS System)

- LIFLUBA Basic Fluids Mechanics Integrated Laboratory:

Base Service Units:

- FME00 **Hydraulics Bench.**
- FME00/B **Basic Hydraulic Feed System.**

Available Modules:

- FME01 **Impact of a Jet.**
- FME02 **Flow over Weirs.**
- FME03 **Bernoulli's Theorem Demonstration.**
- FME04 **Orifice Discharge.**
- FME05 **Energy Losses in Bends.**
- FME06 **Osborne-Reynolds' Demonstration.**
- FME07 **Energy Losses in Pipes.**
- FME08 **Hydrostatic Pressure.**
- FME09 **Flow Visualization in Channels.**
- FME10 **Dead Weight Calibrator.**
- FME11 **Metacentric Height.**
- FME12 **Series/Parallel Pumps.**
- FME13 **Centrifugal Pumps Characteristics.**
- FME14 **Free and Forced Vortices.**
- FME15 **Water Hammer.**
- FME16 **Pelton Turbine.**
- FME17 **Orifice and Free Jet Flow.**
- FME18 **Flow Meter Demonstration.**
- FME19 **Cavitation Phenomenon Demonstration.**
- FME20 **Laminar Flow Demonstration.**
- FME21 **Radial Flow Turbine.**
- FME22 **Venturi, Bernoulli and Cavitation Unit.**
- FME23 **Basic Pipe Network Unit.**
- FME24 **Unit for the study of Porous Beds in Venturi Tubes (Darcy's Equation).**
- FME25 **Flow Channel, 1 m. length.**
- FME26 **Depression Measurement System (Vacuum gauge).**
- FME27 **Axial Flow Turbine.**
- FME28 **Francis Turbine.**
- FME29 **Kaplan Turbine.**

Software:

- CAI **Computer Aided Instruction Software System**, complementary to the Modules type "FME".
- FME/CAL **Computer Aided Learning Software (Results, Calculation and Analysis)**, complementary to the Modules type "FME".

Data Acquisition:

- BDAS **Basic Data Acquisition System and sensors**, for being used with the Modules type "FME".

8.2.- Fluid Mechanics (General)

- BHI **Hydrostatics Bench & Fluid Properties.**
- LFA **Laminar Flow Visualization and Analysis Unit.**
- AFTC **Computer Controlled Fluid Friction in Pipes, with Hydraulics Bench (FME00).** (It uses SCADA System)
- AFT **Fluid Friction in Pipes, with Hydraulics Bench (FME00).**
- AFT/B **Fluid Friction in Pipes, with Basic Hydraulic Feed System (FME00/B).**
- AFT/P **Fluid Friction in Pipes.**
- AFT/CAL **Computer Aided Learning Software (Results, Calculation and Analysis)**, complementary to the units type "AFT".
- AMTC **Computer Controlled Pipe Network Unit, with Hydraulics Bench (FME00).** (It uses SCADA System)
- AMT **Pipe Network Unit, with Hydraulics Bench (FME00).**
- AMT/B **Pipe Network Unit, without Hydraulics Bench (FME00).**
- EGAC **Computer Controlled Water Hammer Unit.** (It uses SCADA System)
- HMM **Manometers & Multimanometers:**
 - HMM-W500 **U-shape Double Manometer.**
 - HMM-U1000 **U-shape Manometer.**
 - HMM-I1000 **Inclined Multimanometer with 20 manometric tubes of 250 mm. length.**
 - HMM-V500 **Multimanometer with 8 manometric tubes of 500 mm. length, vertical position.**
 - HMM-V500-12 **Multimanometer with 12 manometric tubes of 500 mm. length, vertical position.**
 - HMM-4B **4 Bourdon type Manometers Unit.**
- HVB **Falling Sphere Viscosimeter and Drag Coefficient.**
- UVF **Hydrogen Bubble Flow Visualisation Unit.**
- FMDU **Flow Meters Demonstration Unit.**
- HSMAP **Air Pressure Maintained Water System Trainer.**

8.3.- Fluid Mechanics (Flow Channels)

- CFC **Computer Controlled Flow Channels (section: 80 mm).** (They use SCADA System)

Available length:

2.5 / 5 / 7.5 and 10 m.
- CF **Flow Channels (section: 80 mm).**

Available length:

2.5 / 5 / 7.5 and 10 m.
- CFGC **Computer Controlled Flow Channels (section: 300 mm)** (They use SCADA System)

Available length:

5 / 7.5 / 10 and 15 m.

On request: Any other dimensions.
- CFG **Flow Channels (section: 300 mm).**

Available length:

5 / 7.5 / 10 and 15 m.

On request: Any other dimensions.
- CAS **Sediment Transport Demonstration Channel.**

Units
8.4.- Hydraulic Machines (Pumps)

- PBOC Computer Controlled **Multipump Testing Bench**. (It uses SCADA System)
- PBCC Computer Controlled **Centrifugal Pump Bench**. (It uses SCADA System)
- PBCB **Centrifugal Pump Bench**.
- PBSPC Computer Controlled **Series/Parallel Pumps Bench**. (It uses SCADA System)
- PBSPB **Series/Parallel Pumps Bench**.
- PBEC Computer Controlled **Gear Pump Bench**. (It uses SCADA System)
- PBAC Computer Controlled **Axial Pump Bench**. (It uses SCADA System)
- PBRC Computer Controlled (**Reciprocating**) **Plunger Pump Bench**. (It uses SCADA System)

8.5.- Hydraulic Machines (Fans)

- HVCC Computer Controlled **Centrifugal Fan Teaching Trainer**. (It uses SCADA System)
- HVCB **Centrifugal Fan Teaching Trainer**.
- HVAC Computer Controlled **Axial Fan Teaching Trainer**. (It uses SCADA System)
- HVAB **Axial Fan Teaching Trainer**.

8.6.- Hydraulic Machines (Turbines) (It uses SCADA System)

- TFRC Computer Controlled **Radial Flow Turbine**.
- TPC Computer Controlled **Pelton Turbine**.
- TFAC Computer Controlled **Axial Flow Turbine**.
- TTVC Computer Controlled **Steam Turbine**.
- HTIC Computer Controlled **Experimental Impulse Turbine**.
- HTRC Computer Controlled **Experimental Reaction Turbine**.
- HTVC Computer Controlled **Solar/Heat Source Vapour Turbine**.
- TFC Computer Controlled **Francis Turbine**.
- TKC Computer Controlled **Kaplan Turbine**.

8.7.- Aerodynamics (Basic)

- TA50/250C Computer Controlled **Aerodynamic Tunnel, 50 x 250 mm**. (It uses SCADA System)
- TA50/250 **Aerodynamic Tunnel, 50 x 250 mm**.

8.8.- Aerodynamics (General) (It uses SCADA System)

- TA1200/1200 Computer Controlled **Aerodynamic Tunnel, 1200 x 1200 mm**.
- TA500/500 Computer Controlled **Water Tunnel, 500 x 500 mm**.

9.- Thermodynamics & Thermotechnics
9.1.- Refrigeration
Basic Refrigeration

- TCRC Computer Controlled **Refrigeration Cycle Demonstration Unit**. (It uses SCADA System)
- TCRB **Refrigeration Cycle Demonstration Unit**.
- TRD2PC **Two Doors Domestic Refrigeration System Trainer**.

General Refrigeration

- THAR22C Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and two evaporators (water and air)). (It uses SCADA System)
- THAR22B **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and two evaporators (water and air)).
- THAR2LC Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and one evaporator (water)). (It uses SCADA System)
- THAR2LB **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and one evaporator (water)).
- THARL2C Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (water) and two evaporators (water and air)). (It uses SCADA System)
- THARL2B **Refrigeration and Air Conditioning Unit** (one condenser (water) and two evaporators (water and air)).
- THARA2C Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (air) and two evaporators (water and air)). (It uses SCADA System)
- THARA2B **Refrigeration and Air Conditioning Unit** (one condenser (air) and two evaporators (water and air)).
- THARLLC Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (water) and one evaporator (water)). (It uses SCADA System)
- THARLLB **Refrigeration and Air Conditioning Unit** (one condenser (water) and one evaporator (water)).
- THARALC Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (air) and one evaporator (water)). (It uses SCADA System)
- THARALB **Refrigeration and Air Conditioning Unit** (one condenser (air) and one evaporator (water)).
- THARA2C/1 Computer Controlled **Capacity Control Methods in Refrigeration**. (It uses SCADA System)
- THARA2C/2 Computer Controlled **Double Chamber Refrigerator Module**. (It uses SCADA System)
- THALAC/1 Computer Controlled **Multiple Compressor Refrigeration Control**. (It uses SCADA System)
- TCPISC Computer Controlled **Cooling Plant with Ice Store**. (It uses SCADA System)

Special Refrigeration

- TPVC Computer Controlled **Vortex Tube Refrigerator Unit**. (It uses SCADA System)
- TPCC Computer Controlled **Contact Plate Freezer**. (It uses SCADA System)
- TEVC Computer Controlled **Ventilation Trainer**. (It uses SCADA System)

9.3.- Heating

- EACC Computer Controlled **Hot Water Production and Heating Teaching Unit**. (It uses SCADA System)

Units
9.4.- Heat Pumps

- THIBAR22C Computer Controlled **Heat Pump + Air Conditioning + Refrigeration Unit, with Cycle Inversion Valve** (two condensers (water and air) and two evaporators (water and air)). (It uses SCADA System)
- THIBAR22B **Heat Pump + Air Conditioning + Refrigeration Unit, with Cycle Inversion Valve** (two condensers (water and air) and two evaporators (water and air)).
- THIBAR44C Computer Controlled **Heat Pump + Air Conditioning + Refrigeration Unit, with Cycle Inversion Valve** (four condensers (two of water and two of air) and four evaporators (two of water and two of air)). (It uses SCADA System)
- THIBAR44B **Heat Pump + Air Conditioning + Refrigeration Unit, with Cycle Inversion Valve** (four condensers (two of water and two of air) and four evaporators (two of water and two of air)).
- THB22C Computer Controlled **Heat Pump Unit** (two condensers (water and air) and two evaporators (water and air)). (It uses SCADA System)
- THB22B **Heat Pump Unit** (two condensers (water and air) and two evaporators (water and air)).
- THB2LC Computer Controlled **Heat Pump Unit** (two condensers (water and air) and one evaporator (water)). (It uses SCADA System)
- THB2LB **Heat Pump Unit** (two condensers (water and air) and one evaporator (water)).
- THBL2C Computer Controlled **Heat Pump Unit** (one condenser (water) and two evaporators (water and air)). (It uses SCADA System)
- THBL2B **Heat Pump Unit** (one condenser (water) and two evaporators (water and air)).
- THBA2C Computer Controlled **Heat Pump Unit** (one condenser (air) and two evaporators (water and air)). (It uses SCADA System)
- THBA2B **Heat Pump Unit** (one condenser (air) and two evaporators (water and air)).
- THBLLC Computer Controlled **Heat Pump Unit** (one condenser (water) and one evaporator (water)). (It uses SCADA System)
- THBLLB **Heat Pump Unit** (one condenser (water) and one evaporator (water)).
- THBALC Computer Controlled **Heat Pump Unit** (one condenser (air) and one evaporator (water)). (It uses SCADA System)
- THBALB **Heat Pump Unit** (one condenser (air) and one evaporator (water)).
- THB2AC Computer Controlled **Heat Pump Unit** (two condensers (water and air) and one evaporator (air)). (It uses SCADA System)
- THB2AB **Heat Pump Unit** (two condensers (water and air) and one evaporator (air)).
- THBLAC Computer Controlled **Heat Pump Unit** (one condenser (water) and one evaporator (air)). (It uses SCADA System)
- THBLAB **Heat Pump Unit** (one condenser (water) and one evaporator (air)).
- THBAAC Computer Controlled **Heat Pump Unit** (one condenser (air) and one evaporator (air)). (It uses SCADA System)
- THBAAB **Heat Pump Unit** (one condenser (air) and one evaporator (air)).
- TBTC Computer Controlled **Thermo-Electric Heat Pump.** (It uses SCADA System)
- TBCF **Bomb Calorimeter Set for Testing Calorific Value of Fuels.**

9.5.- Air Conditioning
General Air Conditioning

- THAAAC Computer Controlled **Air Conditioning Unit** (one condenser (air) and one evaporator (air)). (It uses SCADA System)
- THAAAB **Air Conditioning Unit** (one condenser (air) and one evaporator (air)).
- THALAC Computer Controlled **Air Conditioning Unit** (one condenser (water) and one evaporator (air)). (It uses SCADA System)
- THALAB **Air Conditioning Unit** (one condenser (water) and one evaporator (air)).
- THA2AC Computer Controlled **Air Conditioning Unit** (two condensers (water and air) and one evaporator (air)). (It uses SCADA System)
- THA2AB **Air Conditioning Unit** (two condensers (water and air) and one evaporator (air)).
- THAR22C Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and two evaporators (water and air)). (It uses SCADA System)
- THAR22B **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and two evaporators (water and air)).
- THAR2LC Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and one evaporator (water)). (It uses SCADA System)
- THAR2LB **Refrigeration and Air Conditioning Unit** (two condensers (water and air) and one evaporator (water)).
- THARL2C Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (water) and two evaporators (water and air)). (It uses SCADA System)
- THARL2B **Refrigeration and Air Conditioning Unit** (one condenser (water) and two evaporators (water and air)).
- THARA2C Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (air) and two evaporators (water and air)). (It uses SCADA System)
- THARA2B **Refrigeration and Air Conditioning Unit** (one condenser (air) and two evaporators (water and air)).
- THARLLC Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (water) and one evaporator (water)). (It uses SCADA System)
- THARLLB **Refrigeration and Air Conditioning Unit** (one condenser (water) and one evaporator (water)).
- THARALC Computer Controlled **Refrigeration and Air Conditioning Unit** (one condenser (air) and one evaporator (water)). (It uses SCADA System)
- THARALB **Refrigeration and Air Conditioning Unit** (one condenser (air) and one evaporator (water)).

Advanced Air Conditioning

- TAAC Computer Controlled **Air Conditioning Laboratory Unit.** (It uses SCADA System)
- TAAB **Air Conditioning Laboratory Unit.**
- TARC Computer Controlled **Recirculating Air Conditioning Unit.** (It uses SCADA System)
- TARB **Recirculating Air Conditioning Unit.**
- TAAUC Computer Controlled **Automobile Air Conditioning Trainer.** (It uses SCADA System)
- TAAU **Automobile Air Conditioning Trainer.**

Units
9.6.- Cooling Towers

- TTEC Computer Controlled **Bench Top Cooling Tower.** (It uses SCADA System)
- TTEB **Bench Top Cooling Tower.**

9.7.- Heat Exchange

- TICC Computer Controlled **Heat Exchangers Training System:** (It uses SCADA System)
 - TIUS **Base Service Unit.** (Common for available Heat Exchangers type "TI").

Available Computer Controlled Heat Exchangers:

 - TITC **Concentric Tube Heat Exchanger.**
 - TIPL **Plate Heat Exchanger.**
 - TICT **Shell & Tube Heat Exchanger.**
 - TIVE **Jacketed Vessel Heat Exchanger.**
 - TIVS **Coil Vessel Heat Exchanger.**
 - TIFT **Turbulent Flow Heat Exchanger.**
- TICB **Heat Exchangers Training System:**
 - TIUSB **Base Service Unit.** (Common for available Heat Exchangers type "TI..B").

Available Heat Exchangers:

 - TITCB **Concentric Tube Heat Exchanger.**
 - TIPLB **Plate Heat Exchanger.**
 - TICTB **Shell & Tube Heat Exchanger.**
 - TIVEB **Jacketed Vessel Heat Exchanger.**
 - TIVSB **Coil Vessel Heat Exchanger.**
 - TIFTB **Turbulent Flow Heat Exchanger.**

9.8.- Heat Transfer (Basic)

- TSTCC Computer Controlled **Heat Transfer Series:** (It uses SCADA System)
 - TSTCC/CIB **Control Interface for Heat Transfer Series.** (Common for available modules type "TXT").

Available Computer Controlled Modules:

 - TXC/CL **Linear Heat Conduction Module.**
 - TXC/CR **Radial Heat Conduction Module.**
 - TXC/RC **Radiation Heat Conduction Module.**
 - TXC/CC **Combined Free and Forced Convection and Radiation Module.**
 - TXC/SE **Extended Surface Heat Transfer Module.**
 - TXC/ER **Radiation Errors in Temperature Measurement Module.**
 - TXC/EI **Unsteady State Heat Transfer Module.**
 - TXC/LG **Thermal Conductivity of Liquids and Gases Module.**
 - TXC/FF **Free and Forced Convection Heat Transfer Module.**
 - TXC/TE **3 Axis Heat Transfer Module.**
 - TXC/MM **Metal to Metal Heat Transfer Module.**
 - TXC/TC **Ceramic Heat Transfer Module.**
 - TXC/TI **Isolated Material Heat Transfer Module.**
- TSTCB **Heat Transfer Series:**

Available Modules:

 - TXC/CLB **Linear Heat Conduction Module.**
 - TXC/CRB **Radial Heat Conduction Module.**
 - TXC/RCB **Radiation Heat Conduction Module.**
 - TXC/CCB **Combined Free and Forced Convection and Radiation Module.**
 - TXC/SEB **Extended Surface Heat Transfer Module.**
 - TXC/ERB **Radiation Errors in Temperature Measurement Module.**
 - TXC/EIB **Unsteady State Heat Transfer Module.**
 - TXC/LGB **Thermal Conductivity of Liquids and Gases Module.**
 - TXC/FFB **Free and Forced Convection Heat Transfer Module.**
 - TXC/TEB **3 Axis Heat Transfer Module.**
 - TXC/MMB **Metal to Metal Heat Transfer Module.**
 - TXC/TCB **Ceramic Heat Transfer Module.**
 - TXC/TIB **Isolated Material Heat Transfer Module.**

9.9.- Heat Transfer (General) (It uses SCADA System)

- TRTC Computer Controlled **Thermal Radiation Unit.**
- TMT **Temperature Measurement Unit.**
- TTLFC Computer Controlled **Fluidisation and Fluid Bed Heat Transfer Unit.**
- TTLFB **Fluidisation and Fluid Bed Heat Transfer Unit.**
- TCEC Computer Controlled **Boiling Heat Transfer Unit.**
- TCEB **Boiling Heat Transfer Unit.**
- TCCC Computer Controlled **Heat Conduction Unit.**
- TCLGC Computer Controlled **Thermal Conductivity of Liquids and Gases Unit.**
- TCPGC Computer Controlled **Film and Dropwise Condensation Unit.**
- TCLFC Computer Controlled **Free and Forced Convection Heat Transfer Unit.**
- TIFCC Computer Controlled **Cross Flow Heat Exchanger.**
- TCMC Computer Controlled **Thermal Conductivity of Building and Insulating Materials Unit.**

9.10.-Heat Transfer (Special) (It uses SCADA System)

- TFLVC Computer Controlled **Laminar/Viscous Flow Heat Transfer Unit.**
- TFLVB **Laminar/Viscous Flow Heat Transfer Unit.**
- TIVAC Computer Controlled **Steam to Water Heat Exchanger.**
- TFEC Computer Controlled **Flow Boiling Demonstration Unit.**
- TRLC Computer Controlled **Recycle Loops Unit.**
- TSPC Computer Controlled **Saturation Pressure Unit.**
- TFUC Computer Controlled **Batch Filtration Unit.**
- TCFUC Computer Controlled **Continuous Filtration Unit.**
- TEPGC Computer Controlled **Expansion Processes of a Perfect Gas Unit.**

9.11.-Nozzles & Steam

- TFTC Computer Controlled **Nozzle Performance Test Unit.** (It uses SCADA System)
- TPT **Nozzle Pressure Distribution Unit.**
- TGV **Steam Generator.**
- TGV-6KW **Steam Generator (6 KW).**
- TGDEC Computer Controlled **Two-Shaft Gas Turbine.** (It uses SCADA System)
- TGDEPC Computer Controlled **Two-Shaft Gas Turbine/Jet Engine.** (It uses SCADA System)
- TPTVC Computer Controlled **Steam Power Plant.** (It uses SCADA System)
- TCESC Computer Controlled **Separating & Throttling Calorimeter.** (It uses SCADA System)
- TEMVDC Computer Controlled **Two-Cylinder Steam Engine Unit.** (It uses SCADA System)

9.12.-Combustion (It uses SCADA System)

- TVCC Computer Controlled **Combustion Laboratory Unit.**
- TVPLC Computer Controlled **Flame Propagation and Stability Unit.**

9.13.-Engines Test Benches (It uses SCADA System)

- TDEGC Computer Controlled **Diesel Engine Electricity Generator.**
- TBEMC Computer Controlled **Test Bench for Single Cylinder Engines.**
- TBEMC-CGEC Computer Controlled **Exhaust Gas Calorimeter.**

Units

10.- Process Control

10.1.-Process Control. Fundamentals

- UCP Computer Controlled **Process Control System (with electronic control valve)**: (It uses SCADA System)

- UCP-UB **Base Unit.** (Common for all Sets for process control type "UCP").

Sets (sensor and elements + computer control software) used in the base unit:

- UCP-T **Set for Temperature Process Control.**
- UCP-C **Set for Flow Process Control.**
- UCP-N **Set for Level Process Control.**
- UCP-PA **Set for Pressure Process Control.**
- UCP-PH **Set for pH Process Control.**
- UCP-CT **Set for Conductivity and TDS (Total Dissolved Solids) Process Control.**

- UCPCN Computer Controlled **Process Control System (with pneumatic control valve)**: (It uses SCADA System)

- UCPCN-UB **Base Unit.** (Common for all Sets for process control type "UCPCN").

Sets (sensor and elements + computer control software) used in the base unit:

- UCPCN-T **Set for Temperature Process Control.**
- UCPCN-C **Set for Flow Process Control.**
- UCPCN-N **Set for Level Process Control.**
- UCPCN-PA **Set for Pressure Process Control.**
- UCPCN-PH **Set for pH Process Control.**
- UCPCN-CT **Set for Conductivity and TDS (Total Dissolved Solids) Process Control.**

- UCPCV Computer Controlled **Process Control System (with speed controller)**: (It uses SCADA System)

- UCPCV-UB **Base Unit.** (Common for all Sets for process control type "UCPCV").

Sets (sensor and elements + computer control software) used in the base unit:

- UCPCV-T **Set for Temperature Process Control.**
- UCPCV-C **Set for Flow Process Control.**
- UCPCV-N **Set for Level Process Control.**
- UCPCV-PA **Set for Pressure Process Control.**
- UCPCV-PH **Set for pH Process Control.**
- UCPCV-CT **Set for Conductivity and TDS (Total Dissolved Solids) Process Control.**

- UCPCNCV Computer Controlled **Process Control System (with electronic control valve + pneumatic control valve + speed controller)**: (It uses SCADA System)

- UCPCNCV-UB **Base Unit.** (Common for all Sets for process control type "UCPCNCV").

Sets (sensor and elements + computer control software) used in the base unit:

- UCPCNCV-T **Set for Temperature Process Control.**
- UCPCNCV-C **Set for Flow Process Control.**
- UCPCNCV-N **Set for Level Process Control.**
- UCPCNCV-PA **Set for Pressure Process Control.**
- UCPCNCV-PH **Set for pH Process Control.**
- UCPCNCV-CT **Set for Conductivity and TDS (Total Dissolved Solids) Process Control.**

- UCP-P Computer Controlled **Process Control Unit for the Study of Pressure (Air)**. (It uses SCADA System)

- UCP/PRO Computer Controlled **Process Plant Trainer.** (It uses SCADA System)

- CECI **Industrial Controllers Trainer.**

- CRCI **Industrial Controllers Networking.**

- CEAB **Trainer for Field Bus Applications.**

- CEAC **Controller Tuning Trainer.**

10.2.-Industrial Process Control (It uses SCADA System)

- CPIC Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (Flow, Temperature, Level and Pressure).

- CPIC-C Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (only Flow).

- CPIC-T Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (only Temperature).

- CPIC-N Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (only Level).

- CPIC-P Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (only Pressure).

11.- Chemical Engineering**11.1.-Chemical Engineering (Basic)**

- CAGC Computer Controlled **Gas Absorption Column**. (It uses SCADA System)
- CAG **Gas Absorption Column**.
- UELLC Computer Controlled **Liquid-Liquid Extraction Unit**. (It uses SCADA System)
- UELL **Liquid-Liquid Extraction Unit**.
- UDCC Computer Controlled **Continuous Distillation Unit**. (It uses SCADA System)
- UDCB **Continuous Distillation Unit**.
- UDCC Computer Controlled **Batch Distillation Unit**. (It uses SCADA System)
- UDDB **Batch Distillation Unit**.

11.2.-Chemical Engineering (General)

- UESLC Computer Controlled **Solid-Liquid Extraction Unit**. (It uses SCADA System)
- UESLB **Solid-Liquid Extraction Unit**.
- EPAC Computer Controlled **Rising Film Evaporator**. (It uses SCADA System)
- EPDC Computer Controlled **Falling Film Evaporator** (accessory for EPAC).
- EPAB **Rising Film Evaporator**.
- EPDB **Falling Film Evaporator** (accessory for EPAB).
- EDPAC Computer Controlled **Double Effect Rising Film Evaporator**. (It uses SCADA System)
- EDPDC Computer Controlled **Double Effect Falling Film Evaporator** (accessory for EDPAC).
- EDPAB **Double Effect Rising Film Evaporator**.
- EDPDB **Double Effect Falling Film Evaporator** (accessory for EDPAB).
- CAPC Computer Controlled **Wetted Wall Gas Absorption Column**. (It uses SCADA System)
- QDTLC Computer Controlled **Liquid Mass Transfer and Diffusion Coefficient Unit**. (It uses SCADA System)
- QDTL **Liquid Mass Transfer and Diffusion Coefficient Unit**.
- QDTGC Computer Controlled **Gaseous Mass Transfer and Diffusion Coefficient Unit**. (It uses SCADA System)
- QDTG **Gaseous Mass Transfer and Diffusion Coefficient Unit**.
- QCCC Computer Controlled **Cracking Column**. (It uses SCADA System)
- BPPC Computer Controlled **Teaching and Research Biodiesel Pilot Plant**. (It uses SCADA System)
- QUCC Computer Controlled **Crystallisation Unit**. (It uses SCADA System)

11.3.-Chemical Reactors

- QRQC Computer Controlled **Chemical Reactors Training System**: (It uses SCADA System)
 - QRUBI **Base Service Unit**. (Common for the following Reactors type "QR").

Available Computer Controlled Reactors:

 - QRIA **Isothermal Reactor with Stirrer**.
 - QRIA/D **Isothermal Reactor with Distillation**.
 - QRFT **Tubular Flow Reactor**.
 - QRAD **Adiabatic and Isothermal Reactor**.
 - QRSA **Reactors with Stirrer in Series**.
- QRC Computer Controlled **Chemical Reactors Trainer**: (It uses SCADA System)
 - QUSC **Service Unit**. (Common for the following Reactors type "QR..C").

Available Computer Controlled Reactors:

 - QRCAC **Continuous Stirred Tank Reactor**.
 - QRTC **Tubular Flow Reactor**.
 - QRDC **Batch Reactor**.
 - QRSC **Stirred Tank Reactors in Series**.
- QR **Chemical Reactors Trainer**:
 - QUS **Service Unit**. (Common for the following Reactors type "QR..").

Available Reactors:

 - QRCA **Continuous Stirred Tank Reactor**.
 - QRT **Tubular Flow Reactor**.
 - QRD **Batch Reactor**.
 - QRS **Stirred Tank Reactors in Series**.
- QRCB **Catalytic Reactors**.

11.4.-Chemical Process

- EMLS **Liquid/Solid Mixing Unit**.
- EEC **Corrosion Study Unit**.
- ESED **Sedimentation Study Unit**.
- LFFC Computer Controlled **Fixed and Fluidised Bed Unit**. (It uses SCADA System)
- LFF **Fixed and Fluidised Bed Unit**.
- QEDC Computer Controlled **Batch Solvent Extraction and Desolventising Unit**. (It uses SCADA System)
- QMS **Solids Handling Study Unit**.
- TFUC Computer Controlled **Batch Filtration Unit**. (It uses SCADA System)
- TCFUC Computer Controlled **Continuous Filtration Unit**. (It uses SCADA System)

11.5.-Chemical Process (Agronomical Industry)

(It uses SCADA System)

- SBANC Computer Controlled **Tray Drier**.
- SSPC Computer Controlled **Spray Drier**.

11.6.-Chemical Process (Special) (It uses SCADA System)

- EPIRC Computer Controlled **Pyrolysis Unit**.
- PLGC Computer Controlled **Gas Washing Process Plant**.
- PPDAC Computer Controlled **Water Demineralization and Processing Plant**.

12.- Food & Water Technologies**12.1.-Food Technology (Basic)** (It uses SCADA System)

- PADC Computer Controlled Teaching Autonomous Pasteurization Unit.
- MINI-LAB Laboratory Homogeniser.
- SBANC Computer Controlled Tray Drier.
- SSPC Computer Controlled Spray Drier.
- AEHC Computer Controlled Hydrogenation Unit.
- AEDC Computer Controlled Deodorising Unit.
- TFDC Computer Controlled Teaching Frigorific Tank.
- EDLC Computer Controlled Teaching Machine for Putting in Plastic Packing Liquids.
- EDSC Computer Controlled Teaching Machine for Putting into a Container Solids.
- ROUC Computer Controlled Reverse Osmosis/Ultrafiltration Unit.
- VPMC Computer Controlled Multipurpose Processing Vessel.
- TPCC Computer Controlled Contact Plate Freezer.
- QEDC Computer Controlled Batch Solvent Extraction and Desolventising Unit.

12.2.-Food Technology (Milk)

- DSNC Computer Controlled Teaching Cream Separator. (It uses SCADA System)
- DSN Teaching Cream Separator.
- EMANC Computer Controlled Butter Maker Teaching Unit. (It uses SCADA System)
- EMAN Butter Maker Teaching Unit.
- AUHTC Computer Controlled UHT Unit. (It uses SCADA System)
- CCDC Computer Controlled Teaching Curdled Tank. (It uses SCADA System)
- PVQC Computer Controlled Teaching Cheese Vertical Press. (It uses SCADA System)
- IYDC Computer Controlled Teaching Yogurt Incubator. (It uses SCADA System)
- RDC Computer Controlled Teaching Cottage Cheese Maker. (It uses SCADA System)
- FQDC Computer Controlled Teaching Cheese Melter. (It uses SCADA System)

12.3.-Food Technology (Oil)

- PACC Computer Controlled Continuous Cycle Oil Production Plant. (It uses SCADA System)

12.4.-Food Technology (Pilot Plants) (It uses ESN System)

- LE00 Process Plant for Dairy Products with Scada-Net System "ESN".
- CA00 Process Plant for Meat with Scada-Net System "ESN".
- CI00 Process Plant for Citrus Fruits with Scada-Net System "ESN".
- FR00 Process Plant for Fruits with Scada-Net System "ESN".
- VE00 Process Plant for Vegetables with Scada-Net System "ESN".
- AS00 Process Plant for Seeds Oil with Scada-Net System "ESN".
- AC00 Process Plant for Olive Oil with Scada-Net System "ESN".
- TO00 Process Plant for Tomatoes with Scada-Net System "ESN".
- UV00 Process Plant for Grapes with Scada-Net System "ESN".
- CE00 Process Plant for Cereals with Scada-Net System "ESN".

12.5.-Clean Water Process

- BL-6 Water Demineralizer.
- DESMID Ion Exchange Demineralizer.

13.- Environment**13.1.-Water Handling**

- ESHC (4x2m) Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (4x2m). (It uses SCADA System)
- ESHC (2x1m) Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1m). (It uses SCADA System)
- ESH (2x1m) Hydrologic Systems Rain Simulator and Irrigation Systems Unit (2x1m).
- PAHSC Computer Controlled Soil Moisture Suction Sand Unit. (It uses SCADA System)
- PAHS Soil Moisture Suction Sand Unit.
- PL Demonstration Lysimeter.
- PPD Drain Permeameter.
- PDFDC Computer Controlled Drainage and Seepage Tank. (It uses SCADA System)
- PDFD Drainage and Seepage Tank.
- PEIF Filterability Index Unit.
- PDSC Computer Controlled Sedimentation Tank. (It uses SCADA System)
- PDS Sedimentation Tank.
- PEFP Permeability/Fluidisation Studies Unit.

13.2.-Water Treatment

- EFLPC Computer Controlled Deep Bed Filter Unit. (It uses SCADA System)
- EFLP Deep Bed Filter Unit.
- EII Ion Exchange Unit.
- PDAC Computer Controlled Aerobic Digester. (It uses SCADA System)
- PDA Aerobic Digester.
- PDANC Computer Controlled Anaerobic Digester. (It uses SCADA System)
- PDAN Anaerobic Digester.
- PEFC Computer Controlled Flocculation Test Unit. (It uses SCADA System)
- PEF Flocculation Test Unit.
- PEAIC Computer Controlled Aeration Unit. (It uses SCADA System)
- PEAI Aeration Unit.
- ROUC Computer Controlled Reverse Osmosis/Ultrafiltration Unit. (It uses SCADA System)

13.3.-Pollution (Ground) (It uses SCADA System)

- ECASC Computer Controlled Subterranean Water Pollution Unit.

Systems

Basic Systems:

- SE. **Secondary Education.**
- PL. **Physics Laboratory.**
- NTTSC. **New Technologies Technical Skills Center.**

New Teaching Systems:

- Mini ESN. **EDIBON Mini Scada-Net Multipost System.**
- ESN. **EDIBON Scada-Net Multipost System:**
 - ESN-EE **Electricity & Electronics Laboratory.**
 - ESN-AR **Air Conditioning & Refrigeration Laboratory.**
 - ESN-HT **Heat Transfer Laboratory.**
 - ESN-PC **Process Control Laboratory.**
 - ESN-CE **Chemical Engineering Laboratory.**
 - ESN-EN **Environment Laboratory.**
 - ESN-FL **Fluids Laboratory.**
- TPDL. **Technical Professional Distance Learning.**

Advanced Systems:

- RCPCL. **Regulation, Control and Process Control Laboratory.**
- PCMTC. **Process Control and Maintenance Training Center.**
- TTTARC. **Teachers Technical Training and Applied Research Center.**

Industrial Systems:

- RPCTC. **Refinery and Process Control Training Center:**
 - RPCTC-RF **Refinery Basic Process Module.**
 - RPCTC-PC **Process Control Module.**
 - RPCTC-EE **Electricity & Electronics Module.**
 - RPCTC-HT **Heat Transfer Module.**
 - RPCTC-FL **Fluids Module.**
- PPTC. **Power Plants Training Center.**
- FTTP. **Food Technology: Pilot Plants:**
 - LE00 **Process Plant for Dairy Products with Scada-Net System "ESN".**
 - CA00 **Process Plant for Meat with Scada-Net System "ESN".**
 - CI00 **Process Plant for Citrus Fruits with Scada-Net System "ESN".**
 - FRO0 **Process Plant for Fruits with Scada-Net System "ESN".**
 - VE00 **Process Plant for Vegetables with Scada-Net System "ESN".**
 - AS00 **Process Plant for Seeds Oil with Scada-Net System "ESN".**
 - AC00 **Process Plant for Olive Oil with Scada-Net System "ESN".**
 - TO00 **Process Plant for Tomatoes with Scada-Net System "ESN".**
 - UV00 **Process Plant for Grapes with Scada-Net System "ESN".**
 - CE00 **Process Plant for Cereals with Scada-Net System "ESN".**
- MU. **Mobile Units.**

Turn-Key Projects for:

- Secondary Education.
- Basic Technical and Vocational Education.
- Technical and Vocational Education.
- Higher Technical Education.

Custom made designs

EDIBON can offer the design of teaching and research units, in accordance with the customer requirements, by using the EDIBON know-how and computer controlled system, as we have developed big amount of new Teaching and Research Technology.

Name: **Position:**

Company/Teaching Center: **Department:**

E-mail: **Phone:** **Fax:**

Address: **City:** **Country:**

I would like you to send me information and prices of the areas/units marked with an " X ".