

ENGINEERING TEACHING EQUIPMENT

2023 SHORT FORM

3D Printers & Additive Manufacturing
Biomedical Engineering
Chemical Engineering
Civil Engineering
Electrical & Power Engineering
Electronics & Telecoms Engineering
Food Technology
Health Sciences
Marine Hydrodynamics
Mechanical Engineering
Mechatronics, Control & Robotics
Oil & Gas Engineering
Physics
Renewable Energy
Test & Measuring Instruments

1 Armfield

Engineering Teaching in Chemical, Civil, Mechanical & Food Technology

Topics Covered

- Fluid Mechanics
- Fluid Machines
- Hydraulics and Hydrology
- Water Treatment
- Irrigation Water Management
- Thermodynamics
- Heat Transfer
- Refrigeration and Air Conditioning
- Internal Combustion Engines
- Structural Behaviour
- Statics, Vibrations & Mechanisms
- Unit Operations
- Biochemical Engineering
- Process Control Technology
- Food Technology

Specialisations

- Tilting Research flumes
- Food Technology R & D Equipment

www.armfield.co.uk



Continuous or Batch Operation Distillation Columns



Subsonic Wind Tunnel



Hydraulic Flow Demonstrator



Axial Flow Gas Turbine Engine

2 Amatrol

Electrotechnology Vocational & Manufacturing Skills Training

Topics Covered

- Electrical Trades
- Electronics Trades
- Process Control
- Manufacturing Processes
- Automation Systems
- Mechanical Systems & Fabrication
- Fluid Power
- HVAC & Steam
- Robotics & Automation
- Renewable Energy

Specialisations

- Blended Learning
- Fault Insertion
- Portable, Suitcase Trainers
- Solar PV Training
- Wind Turbine Training
- Mapped to UEE Packages



Electrical Machines Learning System



Suitcase Mounted PLC Training System

www.amatrol.com



Solar PV Troubleshooting Learning System

Electrical Power & Machines Teaching

Topics Covered

- Electrical Machines and Drives
- Transmission Line, Transformer & Protection Laboratory
- Power Distribution

Other Topics

- Electricity and Electronics
- Material Testing
- Mechatronics and Process Control



Electrical Machines & Drives Laboratory

Specialisations

- Power System Simulator Laboratory
- High Voltage Laboratory
- Electrical Machines Cutaways

www.tercosweden.com



Power Transmission Laboratory



Power System Simulation Laboratory

4 Matrix

Electronics, Electrical & Manufacturing Teaching

Topics Covered

- Electricity & Electronics
- Electrical Machines
- Mechanical Engineering
- Structures with USB Interface
- Manufacturing Engineering
- Process & Motor Control
- Automatics & Robotics
- Smart Factory
- Industry 4.0

Specialisations

- Modern Electrical Machines Trainers
- Low Cost Smart Factory Trainer
- Portable & Rugged Design Structures Kits

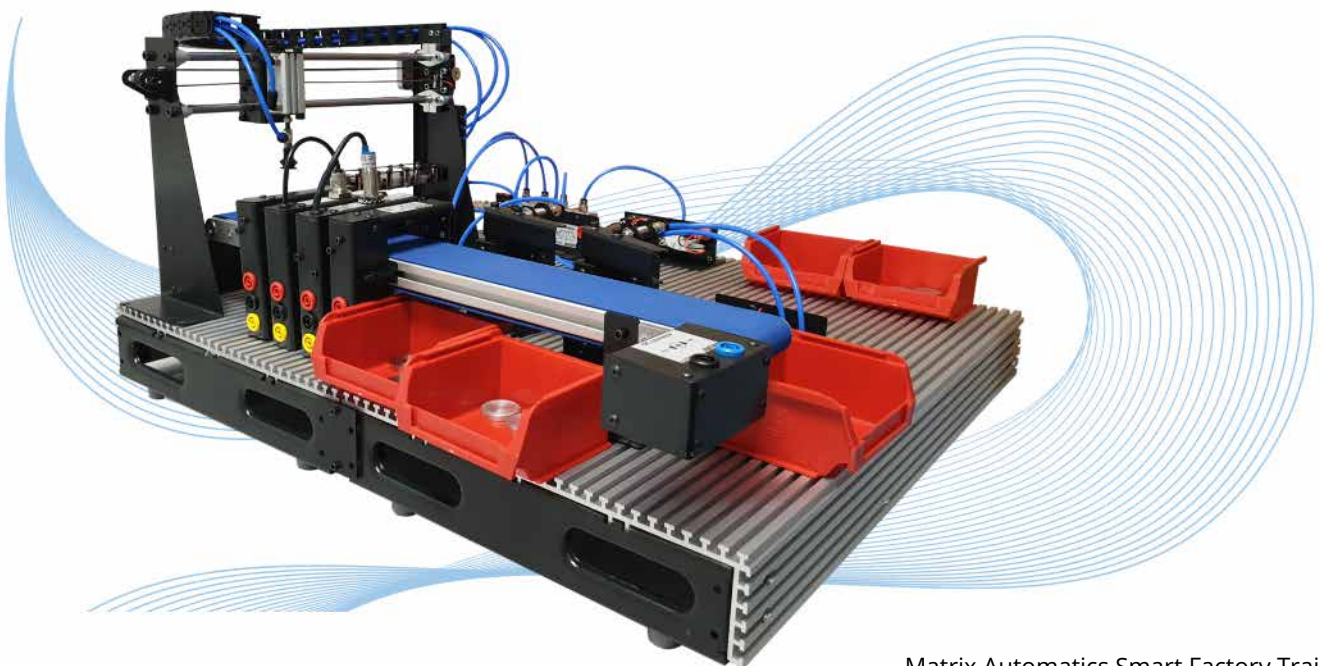
www.matrixtsl.com



Electrical Machines Training System



Formula AllCode Robotic Buggy



Matrix Automatics Smart Factory Trainer

Classic Control to Complex Mechatronic Systems Design

Topics Covered

- Introduction to Control systems
- Linear Motion Control
- Rotary Motion Control
- Flight Control Systems
- Industrial Applications and Process Control
- Robotics and Autonomous Systems
- Haptic Feedback Systems
- Structural Dynamics and Analysis

Specialisations

- UAV & UGV
- Open Architecture Robotics
- Shake Tables

www.quanser.com



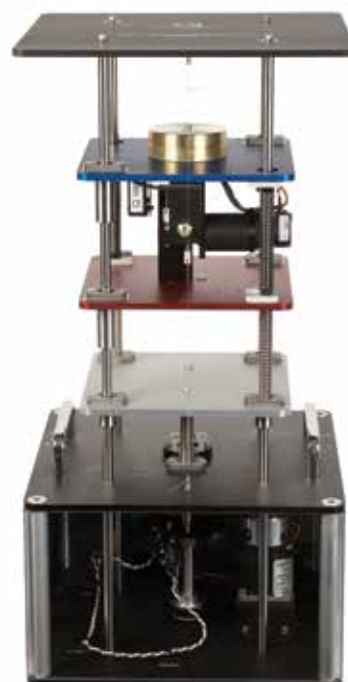
Unmanned Aerial Vehicle



QUBE-Servo with Pendulum



2 DOF Ball Balancer



Active Suspension

6 Heliocentris

Renewable Energy Technology for Education and Research

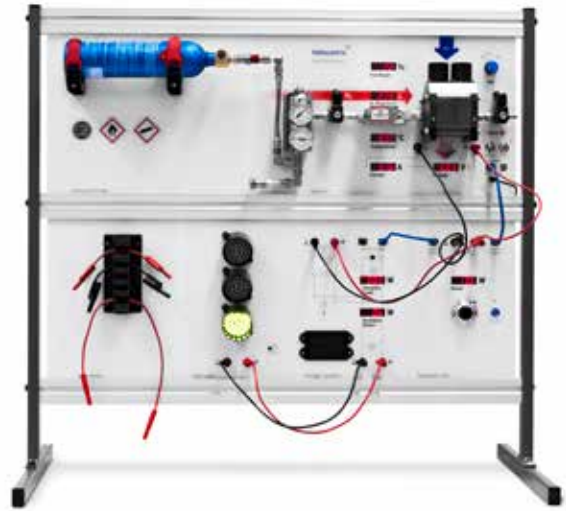
Topics Covered

- Renewable Energy
- Energy Management
- Fuel Cell Technology
- Hybrid Systems
- Hydrogen Generation & Storage

Specialisations

- Hydrogen Fuel Cells
- Solar, Wind, Hydrogen Hybrid Systems
- Smart Grid Integration
- Fuel Cell Research

www.heliocentris.com



50W Fuel Cell Training System



Solar-Hydrogen Trainer



Clean Energy Trainer

7 Kinova Robotics

Research, Education & Industrial Robot Arms

Product Range

- Ultra Lightweight Robot Arms From 5kg
- Smart Sensors: Position, Current, Voltage, Temperature, Accelerometer and Gyroscope
- Grippers
- Vision-Based Manipulation

Specialisations

- Ideal for Mobile Robotic Applications
- Open Hardware and Software Architecture
- Rich Kinova Kortex™ Open API Software

www.kinovarobotics.com



Kinova Gen 3 Robot Arm

8 SMC International Training

Industrial Automation & Assembly Technology

Product Range

- Industrial Automation
- Hydraulics
- Pneumatics
- Assembly Systems
- Industrial Process Control
- e-Learning Material

Specialisations

- World Leader in Automation and Pneumatic Components
- Remote Control of Hardware

www.smctraining.com



FMS-200 Flexible Integrated Assembly System

9 Markforged

Composite Carbon Fibre & Metal 3D Printers

Product Range

- Thermoplastics - PLA, TPU, Nylon, ONYX
- Continuous Fibre Reinforcement
- Engineering Materials - Fire Retardant, ESD, ULTEM™ 9085
- Metals - Stainless Steel, Copper, Tool Steel, Inconel

Specialisations

- Carbon Fibre - Higher Strength-to-Weight Ratio Than 6061-T6 Aluminium
- Injection Molded Like Smooth Finish
- Safe & Low Cost Metal Printing

www.markforged.com



Markforged Line-Up of Composite & Metal 3D Printers

10 Formlabs

Professional SLA & SLS 3D Printing Solutions

Product Range

- Desktop & Large Format SLA Solutions
- 20+ Standard & Engineering Resins
- Biocompatible Resins
- FUSE 1 Professional SLS System
- Nylon 11, 11CF, 12, 12GF

Specialisations

- High Resolution SLA - End Use Parts
- Complete Solution - Wash & Cure Stations
- Cost Effective SLS with Post Processing

www.formlabs.com



Formlabs Large Format SLA & SLS Printing Solutions

11 SpectraQuest Inc

Machinery Dynamics, Balancing & Vibration Training Systems

Topics Covered

- Machinery Fault Simulators
- Drivetrain Diagnostics/Prognostics
- Vibration Training Systems
- Kinematics & Dynamics of Machines
- Wind Energy

Specialisations

- Custom Designed Test Rigs
- Complete Solution - Fault Simulation Devices, Data Acquisition and Curriculum for Machine Condition Monitoring and Reliability Studies

www.spectraquest.com



Machinery Fault Simulator

12 TIMS

Telecoms Modelling System

Topics Covered

- Communications Systems & SDR
- Signals & Systems & DSP
- Wireless Communications
- Fibre Optics

Specialisations

- Block Diagram Teaching Method
- On-Line Teaching Labs in Telecommunications & Electronics

www.tims.com.au



TIMS-301 Telecommunications Training System



ETT-101 BiSKIT Telecomms Experimenter

13 Test and Measuring Instruments

Electronic Instrumentation for Education and Research

Product Range

- Oscilloscopes
- Benchtop Instruments
- Data Acquisition
- Electronic Loads
- Handheld Instruments
- High Voltage Testing
- Generators - Function, RF & Arbitrary
- LCR Meters
- Logic Analysers & MSOs
- Multimeters
- Power Supplies - AC & DC
- Thermal Imaging

Specialisations

- On-Site Product Demonstrations
- Calibration & Service Department
- Emona Web Site On-Line Shopping

www.emona.com.au



Oscilloscopes - 50MHz to 1GHz Bandwidth



Generators - Function, RF & Arbitrary 20MHz to 6GHz



Spectrum Analysers - 1.5GHz to 7.5GHz



DC & AC Power Supplies

EMONA Instruments Pty Ltd

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Camperdown NSW 2050

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Fax: 02 9550 1378

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Fax: 03 9889 0715

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Moorooka QLD 4105

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Fax: 07 3848 9046

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Balcatta WA 6021

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GROUP WEBSITES

Test & Measurement: www.emona.com.au

Testing & Tagging: www.protag.com.au

Installation Testing: www.instaltest.com.au

TIMS Telecoms Trainer: www.tims.com.au