



MATRIX

LAB

Inspiring The Next Generation Of Engineers

USA Matrix Lab Offerings



Inspiring The Next
Generation Of Engineers

www.matrixtsl.com



Cert No. 24094



Inspiring The Next Generation Of Engineers

This brochure introduces our **Matrix Lab offerings for the U.S engineering education market**, a complete range of modular systems and teaching tools designed to bring engineering principles to life.

Each Matrix Lab is a **ready-to-use learning environment**, combining hardware, software, and curriculum resources to simplify setup and accelerate learning outcomes.

Whether you're building a new teaching laboratory, upgrading existing facilities, or seeking flexible resources for hybrid instruction, Matrix Labs provide everything you need to deliver **practical, engaging, and industry-relevant engineering education**.

Explore the pages ahead to discover our full lab offerings or even build your own lab and **turn your lab into a hub of innovation and applied learning**.

Southern University Shreveport



“The design of the instruments, as well as the software, were easy to understand and work with. I like the idea of providing standalone units for each process variable, which enables the instructor and students to work on multiple activities simultaneously. Moreover, providing individual software for on/off and automatic control helps with understanding the instrument control for freshman students with little to no experience in instrumentation. We will definitely use the Matrix products in the Instrumentation course in upcoming semesters.”

Dr Atashbari

Program Coordinator at the Southern University at Shreveport (SUSLA)

“I feel that the MPC has prepared me for the future by allowing me to use instruments that I normally wouldn't get to use until I'm in the workforce. I would describe my overall experience as adventurous. I have learned many new things that I would have never imagined. Both my professor and the MPC have helped me grow tremendously in one semester.”

Student

“My experience using the Matrix Process Controls for the first time was very informative. The control systems gave me a better hands-on understanding of how process equipment works instead of just a visual aid from a textbook. I was able to conduct several labs with the equipment, and it taught me a lot of things dealing with pressure, flow, temperature, and level. I feel I am better prepared to move on to other courses dealing with process technology and later in my professional career.”

Julius

Student

ELECTRICAL INSTALLATION

BASED ON 20 STUDENTS

**Study Level: High School,
Technical College**

**Supports various qualifications including
NCCER & NOCTI Qualifications**

NCCER

National Center for Construction
Education and Research

NOCTI

Product Code	Product	Qty
LK5000A	Electrical Installation Level 1	10
LK4063A	Electrical Installation Level 2	10
LK6846USA	Three Phase Systems V2.0	10
LK1989A	Tranformer Construction and Operation	10
LK2285A	Principles of Lighting	10
LK4562A	Electrical Installation Circuit Principles	10
LK2901A	Electronic Components in Electrical Installation Kit	10
LK6946A	Power Systems	10
LK2285A	Principles of Lighting	10
EM9922USA	Electrical Machines Core Set	5
LK1110	Multimeter	10
HP8067	Digital Oscilloscope	10
HP5834	4 Input Oscilloscope for Locktronics Three Phase Kit	10
HP5561	AC/DC Current Clamp	10
HP8279	25MHz PC Based Oscilloscope/Signal Generator Pack	10
HP2222	Voltcraft Digital Clamp Meter	10
HP1324	Fluke 115 True RMS Digital Multimeter	10

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ELECTRICAL ENGINEERING

BASED ON 20 STUDENTS

**Study Level: High School,
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**Supports various qualifications including
NCCER & NOCTI Qualifications**

NCCER

National Center for Construction
Education and Research

NOCTI

Product Code	Product	Qty
LK9071-2A	Electricity, Magnetism and Materials	20
LK9862A	Intermediate Electrical and Electronic Engineering	20
LK6846USA	Three Phase Systems V2.0	10
LK1989A	Transformer Construction and Operation	10
EM3828USA	Electrical Machines 2.0	7
LK6946A	Power Systems	10
LK1110	Multimeter	10
HP8067	Digital Oscilloscope	10
HP5834	4 Input Oscilloscope for Locktronics Three Phase Kit	10
HP5561	AC/DC Current Clamp	10
HP8279	25MHz PC Based Oscilloscope/Signal Generator Pack	10
HP2222	Voltcraft Digital Clamp Meter	10
HP1324	Fluke 115 True RMS Digital Multimeter	10
LK2101-2	Sense and Control - Electrical	10

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MECHANICAL

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Study Level: Community College, Technical College, University

**Supports various qualifications including
NCCER & NOCTI Qualifications**



NOCTI

Product Code	Product	Qty
FM1000USA	Fundamental Fluids	10
FM1883	Statics Fundamentals	3
FM1292	Materials Fundamentals	3
FM3935	Dynamics Fundamentals	3
FM0759	Mechanics Fundamentals	3
FM5387	Dynamics Plus	3
FM5653	Mechanics Plus	3
HP4159	Thermodynamics Fundamentals	10
HP5099-2	Linear and Rotational Dynamics Kit	10
ST6365-2	Structures - Trusses	2
ST0880	Structures - Simple Suspension Bridge	2
ST5928	Structures - Two and Three Pinned Arch	2
ST4847	Structures - Plastic Bending of Beams	2
ST0386	Structures - Torsion of Rods	2
ST9544	Structures - Deflection of Beams	2
ST5671	Structures - Bending Stress	2
ST0454	Structures - Reactions of a Simple Supported Beam	2
ST4484	Structures - Shear Force	2
ST8801	Structures - Bending Moments	2
ST3156	Structures - Indeterminate and Continuous Beam	2
AV5289-2USA	Wind Tunnel	10
MH8220	Rotating Fatigue Machine (Electronic Loading Mechanism)	1
MH6225	Torsion Testing Machine	1
MH9198	Universal Testing Machine - Complete Solution	1
MH4324	Universal Vibration Apparatus	1
MH2825	Torsional Vibration Apparatus	1
MH1459	Pendulum Impact Tester	1
MH8717	Creep Testing Machine	1
MH8196	Unsymmetrical Cantilever Apparatus	1
MH5258	Curved Bar Apparatus	1
MH2626	Combined Bending and Torsion Apparatus	1
MH2263	Critical Condition of Struts	1
MH7915	Polariscope	1

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MANUFACTURING

BASED ON 20 STUDENTS

**Study Level: High School, Community College,
Technical College**

**Supports various qualifications including
ETA, SACA, NCCER & NOCTI Qualifications**



NOCTI

Product Code	Product	Qty
AU0205	Siemens S7 PLC with HMI and 4mm Connectors	10
AU4956	Smart Factory	10
AU1050USA	Compressor	10
RB1387	Robot Arm	10
CN4079US	Micro CNC Controller and Baseplate	10
CN3885	Complete Micro CNC set	10
CN2498	Deskproto Software - Site License	10
CT0673USA	Flow Process Control	5
CT1491USA	Temperature Process Control	5
CT1733USA	Pressure Process Control	5
CT5971USA	Level Process Control	5
CT9513USA	Servo/Pendulum Motor Control System	5

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PLC AUTOMATION

BASED ON 20 STUDENTS

**Study Level: High School, Community College,
Technical College**

**Supports various qualifications including
ETA, SACA, NCCER & NOCTI Qualifications**



NOCTI

Product Code	Product	Qty
IM3490	Sense and Control - Industrial	10
AU9020	Pneumatics Essentials	10
AU1050USA	Compressor	10
SIMATIC	Siemens Step 7 Software	10
AU4956	Smart Factory	10
AU0205	Siemens S7 PLC with HMI	10
RB1387	Robot Arm	10
IM6930	PLC Fundamentals Trainer	10
IM0004	Maintenance of Closed Loop Systems	10



AVIATION

BASED ON 20 STUDENTS

**Study Level: Community College
& Technical College**

**Supports various qualifications including
FAA Qualifications**



**Federal Aviation
Administration**

Product Code	Product	Qty
AV3737	Electronic Flight Information Systems	5
AV5289-2USA	Wind Tunnel	5
AV3986	Aviation Digital Techniques	5
BL2976	Digital Techniques in Aviation	5
BL8590	Sysblocks Communication Panel for Digital Radio Techniques	5
FC11	Flowcode Academic License - 50 Users	1
EM5154USA	Electrical Machines & Motors Training System	5
EM0843USA	Battery Simulator System	5
FM1000USA	Fundamental Fluids	5
FM1292	Materials Fundamentals	5
FM0759	Mechanisms Fundamentals	5
FM3935	Dynamics Fundamentals	5
FM5653	Mechanisms Plus	5
FM5387	Dynamics Plus	5
HP5099-2	Linear and Rotational Dynamics Kit	5
CT1733USA	Pressure Control System	4
CT1491USA	Temperature Control System	4
ST0386	Torsion of Rods	3
ST5671	Bending Stress	3
ST8801	Bending Moments	3
ST4484	Shear Force	3
ST9544	Deflection of Beams	3
ST4847	Plastic Bending of Beams	3
ST0454	Reactions of a Simply Supported Beam	3
ST6365-2	Trusses	3
ST3156	Indeterminate and Continuous Beam	3
LK1225A	Inductance and Electromagnetism	5
LK9672A	Aviation Electrical and Electronic Fundamentals	5
LK7489	Faraday's Law Kit	5
LK7487	Lenz's Law Kit	5
LK1989A	Transformer Construction and Operation	5
LK3566A	Fault Finding in Electronic Circuits	5
LK2410A	Motors, Generators & Charging Systems	5
LK6946A	Power Systems	5
LK5281A	Batteries and High Voltage Systems	5
LK9282A	Electronic Fundamentals	5
AU9020	Automatics Essentials	5
AU1050USA	Automatics Compressor	5
AU9015	Automatics Electro-pneumatics Add-on	5
AU9077	Pneumatic Control with S7-1200 Siemens PLC Add-on	5

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AUTOMOTIVE

BASED ON 20 STUDENTS

**Study Level: High School, Community College,
Technical College**

**Supports various qualifications including
ASE Qualifications**



National Institute for
**AUTOMOTIVE
SERVICE
EXCELLENCE**

Product Code	Product	Qty
LK2240A	Basics of Automotive Electricity	10
LK2240A	Automotive Electricity Trouble Shooting / Fault Finding	10
LK2410A	Batteries and High Voltage Systems	10
LK9155	Automotive Oscilloscope Trainer	20
LK1800A	Automotive ECU Architecture and Logic	10
LK1142A	Automotive Sense and Control	10
HP8256	Automotive Actuators and Sensors	10
LK1110	Multimeter	10
HP2001	DC / Brushless Motor Pair	10
HP5834	4 Input Oscilloscope for Locktronics Three Phase Kit	10
HP8279	25MHz PC Based Oscilloscope/Signal Generator Pack	10
HP2222	Voltcraft Digital Clamp Meter	10
HP1324	Fluke 115 True RMS Digital Multimeter	10
LK0235A	CAN and LIN Bus Fundamentals	5

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FUNDAMENTAL RENEWABLES

BASED ON 20 STUDENTS

Study Level: High School

**Supports various qualifications including
ETA, NCCER & NOCTI Qualifications**



ETA
International

NCCER

National Center for Construction
Education and Research

NOCTI

Product Code	Product	Qty
RE4854	Fundamentals of Photovoltaic Energy	5
RE3584	Fundamentals of Wind Energy	5
RE2339	Fundamentals of Hydrogen Fuel Cell Technology	5
RE6786USA	Hydrogen Charger	1
RE1200	Hydrogen Storage	1
RE7460	Ethanol Fuel Cell Module	5
RE2986	Fundamentals of Battery Storage Technology	5
RE6491USA	Accessories Kit (essential)	5
RE2986	Charger Module	5
RE5945	Battery Adaptor Cable	5
RE4668	Lithium-Polymer Battery Module	5
RE6800	Lead Battery Module	5
EM0843USA	Battery Simulation Pack	5
EM9922USA	Electrical Machines Core Set	5
LK6946A	Power Systems	10
LK7345-2A	Energy and the Environment	10

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ADVANCED RENEWABLES

BASED ON 20 STUDENTS

**Study Level: Community College, Technical
College, University**

**Supports various qualifications including
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NOCTI

Product Code	Product	Qty
RE3955	Advanced Photovoltaic Energy	5
RE3946	Advanced Wind Energy	5
RE7026	Hydrogen Fuel Cell Technology	5
RE6786USA	Hydrogen Charger	1
RE1091	PEM Hydrogen Fuel Cell	5
RE9584	Advanced Thermal Energy	5
RE0226	Advanced Smart Grid Systems	5
LK3568A	Power and Energy Electronics	10
RE0870	BioFuel Production	5
RE3357	BioFuel Production Accessories	5
RE9380	BioMass Cycle	5
RE1962	Renewable Energy Storage Technology	5
LK6946A	Power and Energy Electronics	10
RE6763	Hydropower Energy	5
LK7345-2A	Energy and the Environment	10
EM0843USA	Battery Simulation Pack	5
EM9922USA	Electrical Machines Core Set	5

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Build Your Own Lab

Can't find a lab to suit your needs, or have some equipment already? Build your own lab.

Take any products from the Matrix range to build a lab to perfectly suit your needs. Contact your local agent so that we can work together to select equipment and build a space that suits you.

MATRIX
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NO. 0001

QUOTATION
A custom built space for you

CUSTOMER INFORMATION
Your personal quote

CUSTOMER ADDRESS

ITEM	DESCRIPTION	QTY
LK9071-2A	Electricity, Magnetism and Materials	20
LK9862A	Intermediate Electrical and Electronic Engineering	20
LK6946USA	Three Phase Systems V2.0	10
LK1989A	Transformer Construction and Operation	10
EM3828USA	Electrical Machines 2.0	7
LK6946A	Power Systems	10
LK111D	Multimeter	10
HP8067	Digital Oscilloscope	10
HP5634	4 Input Oscilloscope for Locktronics Three Phase Kit	10
HP5561	AC/DC Current Clamp	10
HP8279	25MHz PC Based Oscilloscope/Signal Generator Pack	10
HP2222	Voltcraft Digital Clamp Meter	10
LK21624	Fluke 115 True RMS Digital Multimeter	10
LK21624	Sense and Control - Electrical	10
SUBTOTAL		\$xxx
TAX (10%)		\$xxx
GRAND TOTAL		\$xxxx

THE STATE COLLEGE OF FLORIDA, MANATEE-SARASOTA (SCF)



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“My learners are students in a college level Engineering Technology program leading to an A.S. Degree. I am the Program Manager and teach college level courses in Electronics, PLCs, Manufacturing, Automation and Robotics. This includes instruction on PLCs and robotic programming with laboratories in circuits and measurements.

I use the Matrix Smart Factory, Matrix Locktronics and Matrix PLC with HMI which I first discovered through my representative at Technical Training Aids, Keith Edwards.

I began using the Matrix products this school term and teach students using the equipment and curriculum provided by Matrix.

Features that stand out are the compact footprint for the Smart Factory which still includes major factory components like a gantry crane, conveyor belt and a robot arm.

In the short time I have been using the Matrix resources, I have noticed increased student interest. Students love Matrix equipment in the laboratory and are responding enthusiastically. They are looking forward to learning skills through the product applications.

It was a fairly easy start due to the staff at Matrix. I was able to visit the manufacturing location in the UK with Keith Edwards and learn how it was made, assembled and programmed. The effort and company resource used to create a valuable learning experience was truly appreciated. The hands-on approach, supportive environment, and attention to detail are apparent to me. I am grateful for the opportunity to collaborate and look forward to future support and work with Matrix.”

Sam Aldrich – Program Manager



Inspiring The Next Generation Of Engineers

www.matrixtsl.com

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