



DeKalb County
Board of Education

Wiring students to learn, achieve, and succeed

Patrick M. Cripps
Director of Schools

Board Members

Shaun Tubbs, Chairman
Jim Beshearse, Vice Chairman
Jamie Cripps
Eric Ervin
Alan Hayes
Jason Miller
Danny Parkerson

September 23, 2022

To Whom It May Concern:

The DeKalb County Purchasing Committee will accept bids for the DeKalb County School System until **10:00 a.m., Thursday, October 13, 2022**, in the office of the County Mayor, at the DeKalb County Courthouse, Public Square, Smithville, Tennessee, 37166. Bids may be mailed or delivered in person and should be in a sealed envelope --- clearly marked as a "MechLab Fundamentals of Manufacturing Bid".

The Purchasing Committee will accept bids as per specifications or approved equivalent.

The DeKalb County Purchasing Committee reserves the right to reject any or all bids.

Sincerely,



Patrick Cripps
Director of Schools

**MechLab Fundamentals of Manufacturing
DeKalb County High School
October 2022**

The DeKalb County School System desires to purchase a MechLab Fundamentals of Manufacturing –or approved equivalent.

Warranty information to be submitted with bid.

BID Specifications

- Item 1: Quantity-10: Matrix AC/DC Training System 48800
- Item 2: Quantity-1: MecLab w/ext set Introduction to Mechatronics NC3 556276
- Item 3: Quantity-1: Electricity Fundamentals - AC/DC Training System NC3 3351-00
- Item 4: Quantity-1: Introduction in I4.0 (No Hardware needed) NC3
- Item 5: Quantity-1: All Code Robot RB7971

**Item 1
AC/DC Training System**



Description

The AC/DC Training System is a state-of-the-art training system that is specifically designed to introduce students to the basic principles of electrical circuits, both in direct current (DC) and alternating current (AC). It provides a comprehensive, high-quality, and cost-effective solution to rapidly build student knowledge in electricity and electrical circuits.

Through theory and hands-on exercises, the AC/DC Training System fully covers the following topics: nature of electricity, Ohm's law, Kirchhoff's voltage and current laws, using measuring instruments, solving series and parallel circuits, electromagnetism, electrical distribution, and troubleshooting electrical circuits.

Topic Coverage

- . Basic concepts of electrical circuits, both in direct current (dc) and alternating current (ac)
- . Ohm's law
- . Kirchhoff's voltage and current laws
- . Using measuring instruments (voltmeters, ammeters, ohmmeters, etc.)
- . Solving series and parallel circuits
- . Electromagnetism
- . Electrical distribution
- . Troubleshooting electrical circuits
- . Exploration of the most common electrical components: power sources, resistors, inductors, capacitors, transformers, switches, relays, motors

List of Equipment

Item	Qty	Equipment	Model
1.01	1	Equipment AC/DC Training System	587589
		Manuals	
1.02	1	DC Circuit Fundamentals (Workbook)	583852
1.03	1	DC Circuit Fundamentals (Workbook (Instructor))	583854
1.04	1	AC Circuit Fundamentals (Workbook)	583855
1.05	1	AC Circuit Fundamentals (Workbook (Instructor))	583856
		Courseware	
1.06	1	AC/DC Training System (Manuals on CD-ROM)	583853
		Spare Part	
1.07	4	Fuse Sb .750A	764929
1.08	1	Compass 45 mm	765222
1.09	10	Lead 2 mm, 60 cm, red	768380
1.10	1	4 mm Safety laboratory cable, 30 cm, yellow	772072
1.11	1	Rod 3348-0X	773544
1.12	4	Fuse Sb .200A	786071

Item 1.01
AC/DC Training System
Part Number 587589



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Item 1.02
DC Circuit Fundamentals (Workbook)
Part Number 583852

Item 1.03
DC Circuit Fundamentals (Workbook (Instructor))
Part Number 583854

Item 1.04
AC Circuit Fundamentals (Workbook)
Part Number 583855

Item 1.05
AC Circuit Fundamentals (Workbook (Instructor))
Part Number 583856

Item 1.06
AC/DC Training System (Manuals on CD-ROM)
Part Number 583853

Item 1.07
Fuse Sb .750A
Part Number 764929

Item 1.08
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Part Number 765222

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Item 1.10
4 mm Safety laboratory cable, 30 cm, yellow
Part Number 772072

Item 1.11
Rod 3348-0X
Part Number 773544

Item 1.12
Fuse Sb .200A
Part Number 786071

Item 2
MecLab® - The complete package



Description
The hardware

MecLab® is delivered in practical, stackable Systainers, which function as storage units as well as transport packaging.

MecLab® is delivered fully assembled and ready for immediate use.

MecLab® is sturdy and fully capable of withstanding the rigors of a school environment.

The individual stations have different functions:

- The Stacking Magazine station contains a workpiece storage container and a feed separator.
- The Conveyor station can transport and sort workpieces.
- The Handling station can grip the workpieces and deposit them at defined points. The accompanying documents on CD-ROM

The complete package includes a CD-ROM with:

- Start-up instructions: detailed step-by-step instructions showing how to connect the stations to the computer and how to write simple programs, with teacher's tips for lesson planning.
- Theoretical text with the fundamentals of pneumatics, electrical engineering, electrical actuators, sensors and control technology.
- Book of exercises with 5-7 exercises per station and prepared worksheets in *.doc format with solutions; these can be easily adapted to meet your particular requirements.
- Prepared Power

Point presentations with extensive visual materials for use in class

- Videos
- Technical data for all components

Control with FluidSim® software

The stations are controlled with FluidSim® software and the EasyPort interface.

FluidSim® is the application for creating and simulating pneumatic and electrical circuits and programmable logic controllers. With its universal PC interface, FluidSim® can control the MecLab® stations directly. As a result, students can follow a continuous functional chain from the circuit diagram to simulation to control.

Since FluidSim® is supplied as a classroom license, the number of students who can work with FluidSim® at one time is limited to six per station. They can use it to try out their solutions in simulation before testing them on the real station. Moreover, FluidSim® provides information at the click of a mouse button about all components, and many informative animated sequences.

The complete package

Contains everything you need for working with MecLab®:

- 1 Stacking Magazine station
- 1 Conveyor station
- 1 Handling station
- 1 compressor 230 V with connector for DE, FR, NO, SE, FI, PT, ES, AT, NL, BE, GR, TR, IT, DK, IR, ID or 1 compressor 110 V with connector for US, CA, Central America, BR, CO, YU, EC, KR
- 3 x EasyPort to connect the stations to the computer
- 3 x power supply unit with connector for DE, FR, NO, SE, FI, PT, ES, AT, NL, BE, GR, TR, IT, DK, IR, ID or 3 x power supply unit with connector for US, CA, Central America, BR, CO, YU, EC, KR
- FluidSim®
- Documents on CD-ROM
- Workpieces
- Tools
- Screw set
- Systainers

List of Equipment

Item	Qty	Equipment	Model
2.01	1	MecLab® - The complete package	556276

Item 2

MecLab® – The complete package

Part Number 556276



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- FluidSim®
- Documents on CD-ROM
- Workpieces
- Tools
- Screw set
- Systainers

Item 3

Matrix Locktonics AC/DC

Locktonics is a range of products that simplifies the process of learning and teaching electricity and electronics. The core range consists of more than 200 electronic components (ANSI and DIN) mounted on rugged plastic carriers which are printed with the corresponding circuit symbol. Students use the carriers, in conjunction with a baseboard with interconnecting metal pillars to build up a working circuit, then use the worksheets provided to carry out experiments. All solutions are provided in sturdy storage solutions and with up to date curriculum always available online. Solutions are designed to be used 1 kit between 2 students

Learning objectives / experiments:

- Current and voltage measurement
- Current and voltage dividers
- Kirchoff's laws
- Power in DC circuits
- Electrostatics and capacitors
- AC measurements
- L-R, C-R and L-C-R circuits
- Transformers
- Diode characteristics
- Half and full wave bridge rectifiers

Total bid price is to include all shipping and handling and lift gate truck delivery to DeKalb Co. High School, 1130 West Broad St. Smithville, TN. 37166

If you have any questions about this invitation to bid, please contact the DeKalb County Board of Education, at (615)597-4084. Should any terms or conditions on the attached specifications differ from the Invitation to Bid, the terms and conditions of the Invitation to Bid shall govern the process.

- Items may be awarded to the lowest bid(s) or best overall bid, and DeKalb County School System reserves the right to award this bid on quality, price and availability of product specified, whichever is in the best interest of DeKalb County Schools.

- The use of the name of a manufacturer or any special brand, model or make in describing an item or the use of detailed descriptive specifications pertinent thereto, does not restrict bidders to that manufacturer or specific article or such detailed descriptive specifications; this means or method being used simply to indicate the character, or quality of the article desired; but the article on which bids are submitted must be of such character, quality and design as will serve the purpose for which it is to be used equally as well as that specified; must be the equal of the article described and equally suitable to the needs of the DeKalb County School System. If bidding on other than the make, model, or brand specified or such detailed descriptive specifications, the manufacturer's name and catalogue reference, together with specifications therefore must be given or other information given (CLEARLY STATED ON THE BID SHEET IN EVERY INSTANCE) to enable the Purchasing Agent to determine its suitability, or otherwise. DeKalb County Schools reserves the right, through the Purchasing Agent, to be the sole judge in such determinations. WHEN NO REFERENCE IS MADE BY THE BIDDER TO THE MAKE OR GRADE PROPOSED TO BE FURNISHED IT IS UNDERSTOOD THAT THE SPECIFIC ARTICLE NAMED IN THE BID SHEET WILL BE FURNISHED.

- All bids are ultimately subject to funding.

- Bids are to be valid for a minimum of 45 days.

- The language of this Invitation to Bid shall be binding unless mutually amended by DeKalb County School System and bidder. Issuance of the purchase order will be the award notice. The terms and conditions of this Invitation to Bid and detailed purchase order shall constitute entire agreement.

- Back orders are discouraged. Bills for partial shipments are not acceptable. No payment will be made until order is complete.

- All invoices must have an approved DeKalb County School System purchase order number. We require one itemized invoice per purchase order, which shall be presented after we receive 100% of the items on the original purchase order.
- Invoice must be reflective of original bid; DeKalb County Schools will not be responsible for added expenses. By submission of bid, vendor certified that all items are equal to or better than the referenced items and agrees to all terms and conditions stated herein.
- The bidder shall abide by and comply with the true intent of the specifications and not take advantage of any unintentional error or omission, but shall fully address the full intent and meaning of each aspect of the specifications.
- DeKalb County School System is a tax-exempt organization.
- It is the bidder's responsibility to comply with all local, state and federal laws, regulations, codes, licensing, and other requirements. The bidder must be prepared to substantiate compliance upon request by the Board's representative.
- The desired equipment should reasonably meet or exceed the specifications of the models included in the detailed specifications, which have been provided as a reference. Any item substituted must be an approved equivalent.
- The successful bidder must provide full arrangements for delivery, installation, clean up and removal of all debris from project site. All shipping and delivery cost shall be paid by vendor and included in bid price. All items shall be delivered, uncrated, assembled and installed by the vendor, unless otherwise noted.
- Bids will be awarded and purchase orders issued.

BID FORM

SUBMIT BID FORM TO: Matt Adcock, County Mayor
DeKalb County Purchasing Committee
DeKalb County Courthouse
1 Public Square, Room 204
Smithville, TN 37166

ITEMS: Items as contained in the DeKalb County Schools SPECIFICATIONS for MechLab Fundamentals of Manufacturing System for DeKalb County High School.

The bidder acknowledges by his signature that:

1. He has received, read, and understands the specifications and his bid is made in accordance therewith.
2. He has received the following addenda:
Addendum No. _____ Dated _____, 2022.
3. He is in agreement to:
 - A. If awarded the bid, comply with all requirements of the specifications.

Show amount in both words and figures for the total cost of a **MechLab Fundamentals of Manufacturing**, price to include shipping and handling with lift gate truck delivery to DeKalb County High School.

_____ dollars
\$ _____

Name of Company _____

Address _____

Signature and Title _____

Date _____ Phone Number _____

Federal ID Number _____

Bid must be signed by a person or persons authorized to bind the bidder. Failure to complete the Bid Form may be cause for rejection of bid. Bid opening will be 10:00 a.m. on Thursday, October 13, 2022.