World Leader in Technical and Technology Training Systems
Lab-Volt Systems Meets the Demand

For 50 years, Lab-Volt has been a global leader in the design and manufacture of hands-on training laboratories for public education, industry, and the military. Our products prepare students for technical careers in the fields of Electricity and Electronics, Electric Power, Telecommunications, Fluid Power, Instrumentation and Process Control, Automation and Robotics, and Air Conditioning and Refrigeration. In our quest to provide our customers with the most cost-effective training solutions available, Lab-Volt has been a pioneer in the development of computer-based training, simulation software, multimedia programs, and classroom management systems. Some of our better-known products include the FACET® series of computer-based courses in electronics, LVSIM® simulations for training in fields ranging from fluid power to telecommunications, Tech-Design® and Tech-World® for multimedia-based programs in technology education and manufacturing, and Industrial Training Zone® for on-line training in industrial maintenance.

All Lab-Volt equipment is developed and manufactured in Québec, Canada.

The corporate office, including the development of software and web-based programs, as well as sales and marketing, is located in Farmingdale, New Jersey, USA.
FACET® Computer-Based Electronics System

The award-winning FACET curriculum offers one of the most advanced hands-on instructional tools for electrical and electronics training available today for high school through university levels. Both computer-based and manual versions provide a comprehensive competency-based curriculum that builds knowledge and troubleshooting skills in 30 areas of electronics, including Digital and Microprocessor Electronics, Industrial Electronics, and the latest in Communications Systems. The computer-based system, Tech-Lab® FACET® and the Web-based eSeries FACET® enhance learning speed and retention by featuring interactive multimedia, including simulation software for circuit design and analysis.

Electric Power and Controls

Lab-Volt’s EMS Series (Electromechanical Systems) offers a modular approach to studying basic and advanced electrical power technology. This electromechanical and controls system provides comprehensive hands-on training on machines, circuits, and systems used to produce, distribute, and control electrical power. The motors and generators have functionalities and properties similar to much larger industrial machines. The training system is available for either manual or computer-based training, which can include simulation software. Combining off-line simulation training with more sparing use of hardware permits the design of more cost-effective laboratories.
Only a few years ago, many alternative energy sources, such as biomass, wind, solar, wave, tidal, and hydro, seemed an economically unattainable utopian goal. Today, much of the world seems to be embracing these technologies, with wind farms, biofuel plants, solar arrays, etc. becoming more and more prevalent. While new programs addressing wind power and other technologies are flourishing in colleges and universities worldwide, the need for hands-on training systems in this technology is acute. To answer this need, Lab-Volt Systems, Inc. is proud to lead the way in offering a new hands-on training program in Alternative Energy Technology. Lab-Volt offers Alternative Energy training programs not only for those who can make a difference today but also for those who will shape the future of these technologies, from middle school through adult education.
The Power Plant Training (PPT) program by Lab-Volt Systems is designed to meet the dynamics of today’s industry. PPT is a comprehensive program that develops the skills necessary for optimal performance in the power industry. As the demand for Power Plant Training increases, leading multinational companies are embracing the solutions offered by Lab-Volt as a cornerstone of their training programs. PPT courses are designed for a broad audience, from power plant professionals, to workforce re-trainees, to those who need an understanding of the principles of power generation, power transmission, power networks, and the operation of the power grid.

Instrumentation and Process Control Training System

Lab-Volt’s Instrumentation and Process Control Training System introduces students to industrial processes, process instruments, and process controls. The use of modern equipment coupled with a complete training program helps students gain the theoretical and practical knowledge that is mandatory for employment in the process control industry. To maximize the educational efficiency of the system, the teaching material covers industry standards for maintenance concurrently with the main training objectives.
Fluid Power

Lab-Volt’s comprehensive and flexible fluid power programs provide the skills and knowledge students need to work with hydraulic and pneumatic systems. A solid foundation in principles, concepts, and applications is followed by hands-on experience with components and circuits, and development of troubleshooting and testing skills. As with most Lab-Volt programs, simulation software is available, which duplicates the performance of the actual trainers. Lab-Volt’s LVSIM®-HYD and LVSIM®-PNEU interactive software programs present a virtual laboratory, complete with virtual components, that fully simulate the mechanical characteristics of the hydraulics and pneumatics training systems.

Mechanical Training System

Engineered for extreme ease of use, the Mechanical Training System familiarizes students with the selection, installation, use, maintenance, and troubleshooting of mechanical drive components. Students prepare setups on a universal steel base, which allows flexibility of configuration for varied and specific tasks. Learning is based on practical, hands-on tasks using industrial-grade components, ensuring that students are well-prepared for today’s competitive workforce.
Flexible Manufacturing System

Lab-Volt’s Flexible Manufacturing System (FMS) allows students to familiarize themselves with manufacturing applications commonly encountered in modern facilities and to experience realistic industry situations. Equipped with real-world industrial components, the FMS enables students to strengthen their understanding of a number of related technologies, including artificial vision, power electronics, sensors, and wiring. All system operations are controlled with one or more PLCs with networking capabilities.

Rigging System

Transporting machinery is a basic requirement in any industrial plant. Uniquely shaped and/or asymmetrical machines pose specific challenges for the rigger, and transport methods must be specialized for individual machines. Installing machines in tight spaces also poses unique challenges. The hands-on activities performed using Lab-Volt’s Rigging System cover fundamentals of rigging practices and help students develop the techniques required to move and install machines safely.
**Industrial Wiring**

The Industrial Wiring Training System is a hands-on training tool designed to prepare students for careers as electricians and electrical maintenance technicians. The system, which uses high-quality UL-listed components, reproduces an industrial environment where students can develop their skills in the installation and wiring of industrial electrical equipment, in compliance with the National Electrical Code® (NEC®). The system can also be used to teach students how to adjust and maintain industrial electrical equipment as well as enforce industrial workplace safety rules.

**Industrial Controls Training System**

The Industrial Controls Training System is designed to teach the theory and techniques of electric motor controllers. The system modules include actual state-of-the-art industrial components that familiarize students with the operation of industrial-grade controllers, allow them to select and mount control devices to form typical control circuits, and challenge them to troubleshoot once a fault is inserted. The variety of available modules makes it possible to create an array of setups to fit many different training needs. The training covers fundamentals through various types of controls found in industry today.
Piping Training System

The Piping Training System is a hands-on training tool designed to prepare students for careers as pipe fitters and piping maintenance technicians. With this system, students develop their skills in reading piping schematics, calculating pipe lengths, and fabricating, installing, and testing industrial piping systems, including galvanized steel pipes, PVC pipes, copper tubing, and hoses. The industrial-grade system ensures realistic training and enables students to learn how to maintain industrial piping systems and follow and enforce industrial workplace safety rules.

Pumps Training System

Lab-Volt’s industrial-grade Pumps Training System familiarizes students with pump operation principles and associated maintenance. Students are also introduced to the use, characteristics, and maintenance of various pumps through disassembly and by measuring operating parameters. A wide variety of pumps are offered as options in the curriculum and correspond to the most common types found in industry. System modularity makes it possible to create various setups to fit many different training needs.
Fire Alarm Training Systems

The Fire Alarm Training Systems are hands-on training tools designed to prepare students for careers as fire alarm technicians. These systems reproduce typical workplace settings, allowing students to develop their skills in the installation and wiring of fire alarm systems. Two systems are available: the Conventional Fire Alarm System and the Addressable Fire Alarm System. Student learning is based on practical hands-on tasks using commercial-grade components.

Industrial Training Zone (ITZ) by Lab-Volt

Industrial Training Zone by Lab-Volt (www.itz.net) delivers powerful web-based training on demand – the right content in the right context, with comprehensive assessments and the latest performance-measurement tools. ITZ’s industry-proven courseware offers more ways than ever to meet industrial training needs with a wide range of industrial courses including: Electrical, Mechanical, Hydraulics, Pneumatics, PLC Fundamentals, AC/DC Motor Drives, Diesel Engines, and Welding.
Lab-Volt Automation

Through hands-on exercises with industry-standard equipment, students learn about the role of automation and robotics in manufacturing environments. Students are introduced to industrial-grade software and equipment that help develop skills in computer-aided design (CAD) and manufacturing (CAM), computer numerically controlled (CNC) manufacturing processes, and work-cell programming. Emphasis is placed on programming robots, CNC mills, and CNC lathes, as well as various devices necessary for integrated manufacturing technologies and processes. Simulation software enables students to accurately test-run their programs, preventing potential damage to equipment.

Heating, Ventilation, Air Conditioning, and Refrigeration

This modular training program begins with a basic Refrigeration System Demonstrator, which introduces students to the physics and hardware involved in refrigeration and heat pump systems and their major subsystems. This leads to more advanced training programs, including domestic and commercial applications, troubleshooting, and repair of refrigeration and heat pump systems. The advanced Air Handling and Energy Management System incorporates a programmable logic controller (PLC) system to control air flow, humidity, and temperature.
Telecommunications

Through hands-on experiences and computer-assisted learning, students learn the basic principles and operations of electronic communications systems. They progress to intermediate and advanced levels of analog and digital systems, and then to applications in microwave, telephony, fiber optics, antenna, and radar technologies. Combining simulation training for analog and digital telecommunications systems with more sparing use of hardware permits the design of more cost-effective laboratories. The simulation software duplicates the actual operation of the hands-on hardware. Complex algorithms produce identical instrument readings and data traces as would be attained with real-world hardware. Lab-Volt’s latest telecommunications training system is a state-of-the-art digital system, including instruments, which facilitates the study of various types of digital modulation/demodulation technologies.

Engineering Education & Research Equipment for the 21st Century

Lab-Volt’s Engineering programs are designed specifically for instructional purposes and comprise integrated systems of hands-on equipment, computer-based courseware, student manuals, instrumentation, student work centers, classroom management software, simulation software, and instructor demonstration materials that are fully compatible electrically, mechanically, and educationally. They represent state-of-the-art technologies based on current pedagogical practices. Lab-Volt is committed to developing cost-effective engineering programs that address today’s dynamic technological environment by providing better supporting equipment and curriculum for colleges and universities.
Military Technology Training Systems

Today’s military forces are on constant alert for fast, efficient, and effective methods to train their personnel in state-of-the-art technical applications. Lab-Volt Systems, Inc. has developed an extensive series of computer-based and simulation training programs in basic, intermediate, and advanced technical applications. Lab-Volt’s training hardware and software are installed at military training centers around the world.
Information Technology

With Lab-Volt’s training systems, students will be prepared for a wide range of jobs in the growing field of Information Technology. These practical, skills-based programs cover basic computer operation through network installation and troubleshooting and are preferred by hundreds of trade, vocational, and technical schools throughout the world for their comprehensive and up-to-date coverage of contemporary computer technology. Several courses are approved by CompTIA to provide students with the competitive edge they will need to pass A+, Network+, and DHTI+ Certification exams. These products are designed and manufactured by the Graymark International subsidiary of Lab-Volt:

- Cable Termination™ Trainer
- CablingTech™ Cable Installation Trainer
- COMMANDER® PC Troubleshooting & Repair Trainer (A+)
- DisplayPro™ Monitor Repair Trainer
- GPS-101™ Global Positioning System Technology Trainer
- NETtech™ Network Technology Training Program (Network+)
- Printer Repair Trainer
- Ranger® PC Familiarization Course
- SuiteLink™ Home Systems Installation and Integration Trainer (DHTI+)

STEMCART™ by Lab-Volt®

STEMCART™ by Lab-Volt® is a complete mobile demonstration lab with flexible resources designed to boost student performance in integrated Science, Technology, Engineering, and Math. This self-contained cart is easily rolled from classroom to classroom, safely secured and stored when not in use, and designed to be shared among grades and classrooms. The STEMCART™ provides physical and multimedia presentation resources specifically designed for teaching adaptability and flexibility and includes materials for hands-on student experiments and data logging.
Lab-Volt’s Pre-Engineering and Manufacturing Technologies program offers students insight into industrial and manufacturing engineering, as well as business operations. Using state-of-the-art software and industry-standard equipment, they explore and apply current technologies in Quality Control, Automation and Material Handling, Design, Manufacturing Processes, Mechanical Systems, and Electricity and Electronics. This pre-engineering course builds entry-level skills for careers in manufacturing while preparing students for engineering studies.

Featuring a competency-based, interactive multimedia curriculum, Tech-Design has led the way in meeting the highest standards in modular technology education today. The 42 Tech-Design technology modules are designed to meet the standards established by the International Technology Education Association (ITEA). An additional 17 Tech-Design modules meet standards for Family and Consumer Sciences (FACS) education. Every Tech-Design module features dynamic, interactive multimedia and hands-on activities to reinforce specific skills and student employability.