WELDING AND CUTTING EDUCATION SOLUTIONS

LINCOLN ELECTRIC
In 1936, the company further committed itself to the advancement of welding as an art and science with the creation of the James F. Lincoln Arc Welding Foundation—a non-profit educational organization. Formed when the arc welding industry was in its infancy, the Foundation is now in its seventh decade of publishing educational texts and granting awards to recognize achievements by those involved in welding.

Today, the Foundation is committed to advancing welding as a career by providing educators with the tools and materials to help their students succeed. Through comprehensive welding texts, scholarship programs, educational DVDs and even project kits, the Foundation truly remains an evolving cornerstone in welding education initiatives across the globe, assisting those who teach and those who learn.

This support extends beyond the Foundation into the Lincoln Electric organization, as a whole. With programs designed for welders of all skills and abilities looking to improve and advance. Lincoln Electric takes pride in opening the door to all that welding has to offer in the educational market by providing a wide range of equipment, tools, curriculum and support for welding educators and their students.
ADDRESSING A CRITICAL LABOR SHORTAGE

Finding, hiring and retaining qualified talent in the skilled labor pool poses a great challenge to today’s employers. Manufacturers face a significant and growing gap between the key talent they need to grow their business and the candidates actually available to them. In a 2011 study conducted by Deloitte and the Manufacturing Institute, 67 percent of study respondents reported a moderate to severe shortage of available, qualified workers. Fifty-six percent said they anticipated the shortage to grow worse over a five-year period. Respondents say they cannot fill 600,000 jobs, with nearly 75 percent noting the biggest shortage falls in the realm of skilled production jobs – including welders and operators.

We believe today’s youth, tomorrow’s workforce, needs to be engaged and excited about skilled career paths. We want to show them a welding career could take them in life—from working with robotics on the manufacturing floor to creating the world’s infrastructure on a pipe or construction site.

That’s why we remain committed to being a key player in developing the skilled workforce of the future and keeping pace with industry’s employment needs today...and tomorrow.
WELDING SCHOOL DESIGN & DEVELOPMENT

From bricks-and-mortar welding booth design and layout support to full training on newly installed robotic education cells, Lincoln Electric is there to provide assistance.

BOOTH AND FUME SYSTEM DESIGN

We can partner not only with a school’s or training facility’s faculty and administration but also with the architectural and engineering team, consulting on the layout and configuration of welding booths. We also can assist with the specification of welding equipment and fume extraction systems to ensure it meets industry requirements.

INSTRUCTOR TRAINING

After installation, we can train personnel at the school on everything installed, from manual welding systems and cutting tables to sophisticated, automated robotic welding cells designed specifically for use in training tomorrow’s skilled workforce.

We understand education goes well beyond the classroom—and we’re there to help enhance that learning experience every step of the way.
SUPPORTING INDUSTRY TRAINING

RECRUITING. SCREENING. TRAINING.

Our approach to education isn’t just limited to young students. We believe in the concept of lifelong learning. We understand industry’s challenges to bridge the skills gap, including recruiting, screening and training.

Lincoln Electric offers comprehensive support to companies seeking to train new hires or refresh the skills of existing workers – through targeted curriculum, custom-designed “train-the-trainer” sessions or on-site training.

We also support the American Welding Society, a number of union training programs and top level multi-national companies in manufacturing, shipbuilding and other industries in their welding trade recruitment and screening efforts.

One way that happens is with the use of the VRTEX virtual reality welding simulation training systems. These organizations use the VRTEX system to attract talent in recruiting events all over the country. Anyone can put on a virtual reality helmet and try their hand at welding, without additional safety equipment or training.

For the same reasons, several companies are using the VRTEX system to screen prospective employees for open welding positions. Competency and technique are scored and can be objectively compared to the performance of master welders already successful on the job.

INTRODUCING U/LINC™

U/LINC is a complete curriculum of lesson plans, videos, student handouts, tests, presentations and more designed to supercharge the teaching experience and free you from curriculum development.

www.lincolnelectric.com/weldingschool | 5
EQUIPMENT SOLUTIONS

FROM THE LAB TO THE REAL WORLD

It’s important for students at every level to train on the equipment they will work with throughout their career. Using professional level equipment from industry leaders helps each student hit the ground running at their first job and beyond. We offer the welding industry’s most comprehensive line of welding and cutting equipment suitable for training the most rudimentary skills to industry’s most advanced applications.

» Welding Power Sources for Every Arc Welding Process
» Wire Feeders
» Welding Electrodes and Wire
» Welding Gear
» Welding and Cutting Automation
» CNC Plasma Cutting Equipment
» Brazing, Soldering and Oxyfuel Cutting and Welding
» Fume Control Systems

WELDING EQUIPMENT

STICK/TIG
• Square Wave™ TIG 200
• Precision TIG® 225
• Precision TIG® 275

MIG
• POWER MIG® 256

MULTI-PROCESS
• POWER MIG® 210 MP
• POWER WAVE® C300 Advanced Process Welder

CUTTING SYSTEMS
Hand, Mechanized and CNC Plasma Cutting Scaled for Any Environment

Whether your mission is to teach basic oxyfuel cutting and welding, or expose your students to advanced industrial cutting systems, Lincoln Electric has the tools—and supporting curriculum—you need to get the job done.

• Oxyfuel Apparatus
• Hand-held Plasma Cutting Systems
• CNC Plasma Cutting Tables Systems for Plate - Scalable for Every Environment

• Pipe and Tube Profiling Equipment
• Robotic CNC Plasma Cutting Structural Steel Systems
• Laser Cutting/Welding/Processing Systems

FILLER METAL APPARATUS
Learn the Basics

• Brazing
• Soldering
• Oxyfuel Cutting and Welding
ROBOTICS
Advanced Technology for Advanced Manufacturing

This self-contained, small footprint Education Cell is designed to fit through standard doorways to move quickly and easily between the classroom and the lab.

INCLUDES:
- Full-featured welding power source
- Welding wire
- Integrated safety systems
- Instructor training
- WeldPro® offline programming
- Fanuc® Robotics arm
  (leading supplier of robots in North America)
- Optional vision package
VRTEX® VIRTUAL REALITY TRAINERS
Engaging. Measurable. Scalable.

Independent academic research confirms virtual reality welding training can be extremely effective in enhancing or ‘blending’ with traditional training, by delivering repetition that can speed proper technique and muscle memory development. It can also enhance certification rates. More successful students means happier employers, and that can translate into higher enrollment rates for schools that feed those regional employer partners.
VRTEX is also an attractive education tool for other reasons. First, it’s extremely engaging to student generations raised on immersive game-like environments. Next, VRTEX offers advantages to instructors, including the ability to demo optimal welds, showing proper position, angles and travel speed. In review, the instructor can replay a student weld from any ‘camera’ angle, including inside the student’s helmet. For the first time, welding instructors see what the student sees and can coach the student to change misconceptions or improper technique. VRTEX also seamlessly helps instructors track and objectively score weld performance and progress.

Last, VRTEX is scalable, meaning our Extensions™ Upgrades allow a school to add new capabilities, environments and features as their program evolves or technology advances.

VRTEX is currently offered in three versions — Self-contained tabletop Engage™ for exploratory career pathway programs, Mobile™ for screening and training and VRTEX 360, featuring a full-size, all-position welding table and a host of top level features.

**REALWELD® WELDING TRAINERS**

Students need consistent guidance when learning welding techniques and positioning. There’s no replacement for the instructor, but a guided welding experience and immediate feedback on every weld is like having an instructor in the booth full time, helping to move each student forward on the lesson plan.

REALWELD teaches stick and wire welding processes in a number of positions and joint types. The system prompts the user with audio coaching in both Arc On and Off modes every step of the way. Single and multi-pass welding can be practiced on coupons up to 18 inches (457 mm) in length. Instant feedback and reporting functions aid the instructor with student evaluation.
In welding, safety is a major concern for all. Lincoln Electric provides the fume control systems, welding gear, and most importantly, the safety curriculum and class materials you need to keep your students safe—now and later throughout their careers.

**WELD FUME CONTROL SYSTEMS**

Choose portable, wall-mounted or shop-wide systems for reducing fume and particulate in the welding lab.

- MINIFLEX®
- MOBIFLEX® 100
- MOBIFLEX® 200M & 400MS
- STATIFLEX® 200-M & 400-MS
- MODULAR EXTRACTION HOOD
- CENTRAL SYSTEM WELD FUME CONTROL
- CIRCULATOR®
- WELDING BOOTH

**WELDING GEAR & TOOLS**

Equip your students from head to toe with proper PPE (Personal Protection Equipment) and tools for safety in the lab.

- VIKING™ AUTO-DARKENING HELMETS
- SAFETY GLASSES
- GLOVES
- JACKETS
- SLEEVE S
- LAB COATS
- CAPS
- WOMEN’S WELDING GEAR
- HAND TOOLS
- MAGNETIC FIXTURES
- HAND LIFTERS
- WELDING CURTAINS
- HEAT RESISTANT BLANKETS
- ROD OVENS

**CURRICULUM AND INTERACTIVE SAFETY GUIDE**

Our U/LINC™ curriculum includes several section on welding and shop safety.

In addition, Lincoln Electric offers an Interactive Welding Safety Guide that can be viewed online at a computer, tablet or smart phone. The content is aimed at welder’s at any experience level, making it ideal for the classroom or homework.
WELDING CONSUMABLE SOLUTIONS

WELDING ELECTRODES AND WIRE
Application-Specific. Comprehensive Offering.

Industry now demands welding consumables that deliver very specific performance for very specific applications – automotive, construction, heavy equipment, power generation, cross country pipe.

We offer targeted consumables in a wide array of alloys, packages and process types to meet the needs of industry, as well as your own school program. Just as it’s important to teach using top industrial-grade equipment, it’s just as important to allow your students to practice with the industry’s top welding consumables.

• STEEL
• STAINLESS STEEL
• ALUMINUM
• HIGH ALLOY
• HARDFACING

• SMAW
• GMAW
• GTAW
• FCAW
• SAW
TEACH YOUR TRADE. WE’LL DO THE REST.

EDUCATION RESOURCE AND PURCHASING PORTAL

Exclusively for educational institutions, this comprehensive web-based portal was developed to help educators get the materials necessary to run welding programs at any level.

• Stick Electrodes
• GMAW and FCAW Wire
• GMAW Guns, GTAW Torches and related accessories
• Helmets and Welding Gear
• Specific Curriculum Items
• Arc Welding Safety Materials
• Classroom Training Materials

Affiliate online purchases with a participating distributor. Get free standard shipping on orders over $500 in the contiguous United States.

U/LINC™ CURRICULUM

There is a science and an art to welding — and teaching. Using Lincoln Electric web-delivered U/LINC curriculum, you can focus on teaching your trade and leave the curriculum development to us. We are committed to making welding instructors better — one class at a time.

Topics include:

• Safety
• Thermal Cutting
• Aluminum
• Principles of Welding
• CNC Plasma Cutting
• Stainless Steel
• SMAW
• Lab Activities for Each Position
• Robotics
• GMAW (Dependent on Process)
• Fabrication
• FCAW
• Mathematics in Welding
• Manufacturing & Engineering
• GTAW
• Careers
• Pipe
OTHER TRAINING PROGRAMS AND MATERIALS

Choose from a series of informative posters that can help you explain welding symbols, joint design, transfer modes, parts of a weld, types of weld discontinuities, causes of weld cracking and the visual indicators of common errors in technique. Use our welding guides to help explain concepts and set starting procedures. Attend one of our instructor or administrator targeted seminars to learn about new technologies, new approaches to the classroom, new reporting, grant writing and other topics.

- Posters
- Welding Process Guides
- Product Specific Project Based Lessons
- Train-the-Trainer Seminars
- Educators Workshop for Administrators
- Lincoln Electric Welding School Teacher/Observer Audit Program
- Grant Writing Assistance
YOUTH PROGRAMS

Lincoln Electric is involved in engaging youth and building pathways to a career in the skilled trades at all levels—global, national, regional and even local. Our involvement in targeted youth programs reaches students in grades K through college. We provide materials to these partner organizations, including comic books, project books, and fun activities designed to inspire kids to get interested in welding and keep them interested as they grow.

Through these efforts, we partner with and sponsor the activities of many notable youth organizations:

- Boy Scouts of America’s welding merit badge program.
- Girl Scouts of America
- FFA Organization
- 4H
- Skills USA programs and competitions
- World Skills International programs and competitions

JFLF AWARDS PROGRAM

And, through the James F. Lincoln Arc Welding Foundation’s Awards Program, students at high school and college levels can submit welding projects and white papers to compete for cash prizes, equipment and industry recognition. There is no entry fee for any level of competition in this awards program.

PARTNERING WITH INDUSTRY ASSOCIATIONS

Education with industry, ensuring that the right skills, applications and techniques are being taught to the workforce tomorrow on the highest quality equipment. We achieve this in part through key partnerships with like-minded industry associations by sponsoring or equipping competitions, demonstration and outreach as well as jointly developing educational materials. This mission is intended to find ways to engage and attract the future skilled workforce and get the word about the exciting technical careers.

Our valued industry partners include the following:

- American Welding Society (AWS)
- National Institute of Metalworking Standards (NIMS)
- National Center for Construction Education and Research (NCCER)
- Weld-ED
- American Association of Community Colleges (AACC)
- Association of Agricultural Educators (NAAE)
- Tooling U
CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company® is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers’ particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.