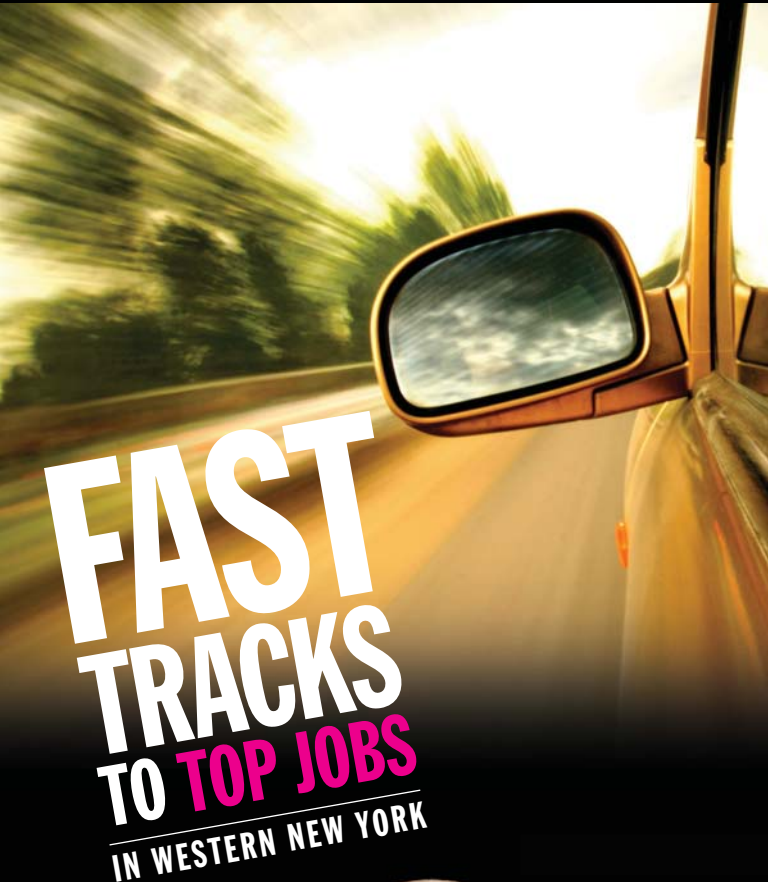


**ADVANCED MANUFACTURING**



**FAST  
TRACKS  
TO TOP JOBS**  
IN WESTERN NEW YORK





# FAST TRACKS TO TOP JOBS

IN WESTERN NEW YORK

## TODAY'S ADVANCED MANUFACTURING

### What's so "new" in manufacturing today?

Forget those stereotyped images of low paying assembly line jobs that have left the country. Right now there is a growing need for technically trained workers to manage the emerging advanced tech systems that are key to the success of high-performance manufacturing companies.

**That means high-paying jobs with stable, long-term futures right here in Western New York.**

Job openings are projected to increase as the baby-boom generation retires in the next five years. But these openings require highly skilled workers with the training, education and skills needed for an advanced manufacturing environment. The last two pages in this booklet will tell you where you can get training.



ADVANCED MANUFACTURING

### HOW TO FIND YOUR FAST TRACK TO TOP JOBS

There are six job tracks identified in this booklet that will help steer you in the right direction.

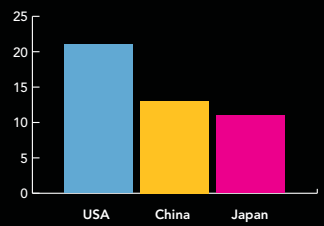
- ▶ Production
- ▶ Manufacturing Product Process Development
- ▶ Maintenance, Installation and Repair
- ▶ Quality Assurance
- ▶ Logistics and Inventory Control
- ▶ Health, Safety and Environmental Assurance

Each of the six job categories has a brief job description, sample job titles and salaries, and educational/training requirements.

The last two pages of this booklet contain the information you need to start on your fast track. You'll find area schools and programs offering specialized programs, degrees and certifications that match the needs of advanced manufacturing in WNY. Discover the high-paying job in your own future.

### World's Largest Manufacturers

Source: National Association of Manufacturers



The United States is the world's largest manufacturing economy, producing 21% of manufactured products worldwide. China is second at 13% and Japan is third at 11% (2006).

# GO AHEAD. GET EXCITED.

Advanced manufacturers are the people that make and use technology to drive the economy.

You can get excited about your future. There might be things here that you know and then some that are new. The point is, there's probably something you'll like, and it's all in **advanced manufacturing**.

## Salaries are probably more than you expected.

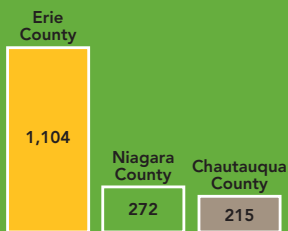
Most employers offer benefits that might include health insurance, vacation time, workplace training and retirement plans.

Looking ahead, jobs requiring an associate's degree are projected to make the biggest jump over the course of the decade.

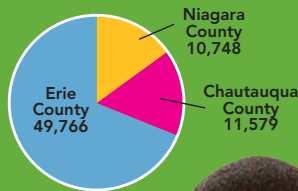
Production; transportation and material moving; building and grounds cleaning and maintenance; installation; maintenance and repair occupations are seen as the region's **top growing** non-degree occupations.\*

### 2007 Business Statistics

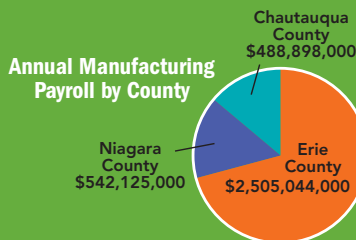
Source: U.S. Census Bureau



### Number of Paid Employees by County



### Annual Manufacturing Payroll by County



### US Manufacturing Subsectors

The following are industry sectors within the manufacturing world. You might find something that interests you.

- ▶ Food Manufacturing
- ▶ Beverage and Tobacco Product Manufacturing
- ▶ Textile Mills
- ▶ Textile Product Mills
- ▶ Apparel Manufacturing
- ▶ Leather and Allied Product Manufacturing
- ▶ Wood Product Manufacturing
- ▶ Paper Manufacturing
- ▶ Printing and Related Support Activities
- ▶ Petroleum and Coal Products Manufacturing
- ▶ Chemical Manufacturing
- ▶ Plastics and Rubber Products Manufacturing
- ▶ Nonmetallic Mineral Product Manufacturing
- ▶ Primary Metal Manufacturing
- ▶ Fabricated Metal Product Manufacturing
- ▶ Machinery Manufacturing
- ▶ Computer and Electronic Product Manufacturing
- ▶ Electrical Equipment, Appliance, and Component Manufacturing
- ▶ Transportation Equipment Manufacturing
- ▶ Furniture and Related Product Manufacturing
- ▶ Miscellaneous Manufacturing

### GET IN ON THE ACTION

	Av. Salaries
Helpers – installation, maintenance, and repair workers . . . . .	\$28,200
Assemblers and fabricators . . . . .	\$47,210
Millwrights . . . . .	\$31,890
Computer operators . . . . .	\$32,030
Commercial and industrial designers. . . . .	\$53,970
Maintenance and repair workers, general. . . . .	\$36,170

Source: Business First of Buffalo

Advanced manufacturing relies on modern techniques to produce sophisticated, high-value products.

\*Certification may be required for some of these fields.

# FAST TRACK #1

## PRODUCTION

DO YOU WONDER HOW THINGS ARE MADE? IF YOU DO, YOU CAN BE A PART OF THAT PRODUCTION. JOBS CAN INCLUDE THE USE OF COMPUTER-GUIDED MACHINES TO ASSEMBLE ELECTRONIC PARTS, CONSTRUCTING MODULAR HOUSING, PRECISION WELDING OR PRINTING.

### Job Titles You Could Have:

- ▶ Assembler
- ▶ Automated Manufacturing Technician
- ▶ Bookbinder
- ▶ Calibration Technician
- ▶ CNC Set-up and Operator
- ▶ Electromechanical Equipment Assembler
- ▶ Extruding and Drawing Machine Operator
- ▶ Machine Operator
- ▶ Medical Appliance Maker
- ▶ Tool and Die Maker

**Average WNY Salary: \$47,210\***

\*categories and circumstances may vary

### Training Required

A variety of schools offer degrees in the job specialties listed as well as certificate programs that are recognized by these industry associations:

- ▶ National Institute for Metalworking Skills
- ▶ Society of the Plastics Industry
- ▶ American Welding Society
- ▶ American Electronic Association
- ▶ Electronics Industry Association
- ▶ National Council for Skill Standards in Graphic Communications

### Job Outlook

As plants rapidly move to more process automation, **all skills that cannot be automated will provide the greatest job growth opportunities.** Jobs in demand include welders, tool and die makers, and multiple machine operators, for example.

"My first job right after graduation was a tool and die maker for a growing medical appliance manufacturer. It was a great way to combine my computer skills with the specialized training in production processes I received at school."

Melanie Z., Tonawanda, NY



# FAST TRACK #2

## MANUFACTURING PRODUCTION PROCESS DEVELOPMENT

IF YOU ENJOY WORKING WITH CUSTOMERS TO DESIGN NEW PRODUCTS AND THE MANUFACTURING PROCESSES TO MAKE THEM, THIS FIELD MAY BE FOR YOU. IT REQUIRES CREATIVE THINKING AS WELL AS A GRASP OF THE CUTTING-EDGE PROCESS CONCEPTS INCLUDING KNOWLEDGE OF MATERIAL CHARACTERISTICS AND TOLERANCES.

### Job Titles You Could Have:

- ▶ Design Engineer
- ▶ Industrial Engineer
- ▶ Labor Relations Manager
- ▶ Manufacturing Engineer
- ▶ Power Generating and Reactor Plant Operator
- ▶ Precision Inspector, Tester and Grader
- ▶ Process Improvement Technician
- ▶ Production Manager

**Average WNY Salary: \$43,980\***

\*categories and circumstances may vary

### Training Required

Engineering-related courses from secondary and post-secondary schools lead to degrees from associate and baccalaureate levels to graduate degrees. Specialty certificates from the following associations are highly valued:

- ▶ Society of Manufacturing Engineers
- ▶ National Society of Professional Engineers

### Job Outlook

Labor relations manager positions and electrical engineering jobs should have a steady growth rate. Industrial engineers and production managers may experience growth as well, but at a bit slower pace due to increasing automation.

“With a wife and child on the way, I no longer wanted to work in retail—working nights and weekends at the pizzeria. Through training, I started as a general machine operator making rubber parts. I continued my education and was promoted to supervisor, then manufacturing production process development technician and now plant production manager.”  
Erin P., Batavia, NY



# FAST TRACK #3

## MAINTENANCE, INSTALLATION AND REPAIR

ARE YOU FASCINATED WITH WHAT MAKES THINGS WORK? IF SO, THIS FIELD USES VALUABLE SKILLS IN TROUBLESHOOTING AND REPAIR OF HIGH-TECH EQUIPMENT AND SYSTEMS. JOBS IN THIS FIELD INCLUDE DEVELOPING PREVENTIVE MAINTENANCE PROCEDURES ON MACHINES, TOOLS, EQUIPMENT AND FACILITIES. IN ADDITION TO ROUTINE MECHANICAL REPAIR, THIS CAN INCLUDE USING COMPUTER-BASED INVENTORY CONTROL SYSTEMS, RETRIEVING INFORMATION HISTORIES FROM COMPUTER RECORDS AND RECORDING REPAIR ACTIVITIES.

### Job Titles You Could Have:

- ▶ Biomedical Equipment Technician
- ▶ Communication System Installer/Repairer
- ▶ Computer Installer/Repairer
- ▶ Instrument Control Technician
- ▶ Job/Fixture Designer
- ▶ Laser Systems Technician
- ▶ Meter Installers/Repairer
- ▶ Security System Installers/Repairer

Average WNY Salary: \$40,640\*

\*categories and circumstances may vary

### Training Required

A post-secondary education degree and training is often required. This can include machine and tool repair, die/jig toolmaking plus courses in such areas as programmable logic controllers. Credentials can include:

- ▶ BAT Apprenticeship
- ▶ Society for Maintenance and Reliability Professionals—Certified Maintenance and Reliability Professional

There are also specific certifications depending on the field including boilers, hydraulics, pneumatics and pump repair.

### Job Outlook

A projected shortage of qualified applicants indicates strong job opportunities in this field in the next five years. Increased automation and the increasing complexity of computer equipment will require job seekers to have broad skill sets. Computer technicians and repair positions are expected to have new openings in the near future.

“Growing up, I was always intrigued with fixing our appliances and video equipment. After completing my coursework in electronic systems, I was hired by a prominent manufacturer of computer-controlled cutting equipment. My salary advanced after the first year, and I am looking forward to the many advancement opportunities of this job.”

Kevin G., Cheektowaga, NY



# FAST TRACK #4

## QUALITY ASSURANCE



ARE YOU A STICKLER FOR DETAIL AND ALWAYS EXPECTING HIGH-QUALITY PERFORMANCE? IF SO, THIS MIGHT BE YOUR FIELD. THESE JOBS ASSURE THAT QUALITY STANDARDS AND PROCEDURES ARE ADHERED TO AND THAT PRODUCTS AND SERVICES MEET THEIR PERFORMANCE CLAIMS. THIS CAN INCLUDE MONITORING AND MAINTAINING THE QUALITY OF PARTS, OVERSEEING THE WORKING OF THE MANUFACTURING PROCESS AND TESTING PRODUCTS AND PARTS TO MEET CUSTOMER SPECIFICATIONS.

### Job Titles You Could Have:

- ▶ Calibration Technician
- ▶ Inspector
- ▶ Lab Technician
- ▶ Process Control Technician
- ▶ Quality Control Technician
- ▶ Quality Engineer
- ▶ SPC Coordinator

Average WNY Salary: \$38,080\*

\*categories and circumstances may vary

### Training Required

Jobs requiring complex precision inspections will require a degree (associate, bachelor, or graduate) that includes courses and certification in quality assurance. Certifications are available through the following:

- ▶ American Society of Quality
- ▶ Quality Certification Bureau, Inc.
- ▶ ISO 9000 Certification for Organizations

### Job Outlook

The job applicant with training and experience in automation systems will find the best opportunities because manufacturers are increasingly relying on automation in the inspection processes.

"An apprenticeship training program led directly to my first job as a Machinist. From there I experienced steady advancement in the Quality Assurance field. My work in CNC machining and programming soon resulted in a top management position. I see a bright future in this field for anyone searching for a high-tech job focused on close tolerances."

Tom J., Buffalo, NY



# FAST TRACK #5

## LOGISTICS AND INVENTORY CONTROL

**THIS FIELD REQUIRES WORKERS WHO APPRECIATE THE PROCESS FLOW OF MOVING RAW MATERIALS THROUGH THE MANUFACTURING LINE TO FINISHED PARTS AND SHIPPING. THIS OFTEN INCLUDES COORDINATION WITH TRAFFIC MANAGERS AND ACCURACY IN MOVING ITEMS THROUGHOUT THE PRODUCTION CYCLE.**

### Job Titles You Could Have:

- ▶ Dispatcher
- ▶ Freight, Stock and Material Mover
- ▶ Industrial Truck and Tractor Operator
- ▶ Logistical Engineer
- ▶ Logistician
- ▶ Material Handler
- ▶ Process Improvement Technician
- ▶ Quality Control Technician
- ▶ Traffic Manager

**Average WNY Salary: \$49,240\***

\*categories and circumstances may vary

### Training Required

Associate and B.S. degrees are available in Business, Marketing, Logistics, Engineering and Transportation. Certification can be obtained through these organizations:

- ▶ Certified Professional Logistician (CPL)
- ▶ Certified in Transportation and Logistics (CTL)

### Job Outlook

Positions in this broad field will continue to be available in the next five years. Material movers, dispatchers and schedulers in particular have strong job opportunities ahead.

"While I was attending school, I had a part-time job unloading trucks in a stainless steel fixtures plant. After getting my degree, I was able to find a job with the same company as a Traffic Manager overseeing the flow of all materials coming into and out of the plant. My school training and practical experience made all the difference."  
John T., Niagara Falls, NY





# FAST TRACK #6

## HEALTH, SAFETY AND ENVIRONMENTAL ASSURANCE

IF THE HEALTH AND THE WELL-BEING OF THOSE AROUND YOU ARE IMPORTANT TO YOU, THIS FIELD MAY BE A GOOD CHOICE. JOBS INCLUDE ENSURING EQUIPMENT IS USED SAFELY, PLANNING SAFE PRODUCTION PROCESSES, CONDUCTING INCIDENT AND HAZARD INSPECTIONS AND DEVELOPING ENVIRONMENTAL PROGRAMS AND PROCEDURES.

### Job Titles You Could Have:

- ▶ Environmental Engineer
- ▶ Environmental Specialist
- ▶ Health and Safety Representative
- ▶ Safety Coordinator
- ▶ Safety Team Leader
- ▶ Safety Technician

**Average WNY Salary: \$35,380\***

\*categories and circumstances may vary



### Training Required

Many safety engineers, safety technicians and environmental compliance inspectors need specialized certification in addition to one- to two-year training programs from these schools:

- ▶ Community colleges
- ▶ Technical institutes

Four-year colleges and universities offer degree programs in the following:

- ▶ Business
- ▶ Engineering
- ▶ Engineering technology

### Job Outlook

Growth in this field is expected to expand faster than average with positions increasingly focused on prevention of environmental problems taking the lead.

Many secure positions will become available in local, state and federal government.

"I could never have gotten my position without my associate degree in environmental planning. I am now going on with an advanced degree in this field—all paid by my employer."

Debbie F., South Wales, NY



# YOUR FAST TRACK FUTURE STARTS HERE.

The following list includes area schools and examples of degrees and certificates that provide the training you need to **secure a top job in the expanding field of Advanced Manufacturing.**

Contact the schools directly for more details about academic programs, scholarships and tuition assistance.

## Alfred State College



800-4-ALFRED or 607-587-4215 | [www.alfredstate.edu](http://www.alfredstate.edu)

2-year and 4-year Degrees:

- ▶ Mechanical Engineering Technology
- ▶ Electrical Engineering Technology
- ▶ Electromechanical Engineering Technology
- ▶ Computer Engineering Technology
- ▶ Welding Technology
- ▶ Machine Tool Technology
- ▶ Drafting/CAD
- ▶ Robotic & Computerized Control
- ▶ Electrical Construction & Maintenance Electrician

## Buffalo Public Schools Adult Education Division



716-816-3500 | [www.buffaloschool.org](http://www.buffaloschool.org)

Programs in Manufacturing Technology:

- ▶ Machine Tool Operation
- ▶ Auto CAD and Blueprint Reading
- ▶ Hydraulics and Pneumatics

## Buffalo State College



716-878-4017 | [www.buffalostate.edu](http://www.buffalostate.edu)

4-year Bachelor Degrees:

- ▶ Electrical Engineering Technology (Electronics)
- ▶ Electrical Engineering Technology (Power and Machines)
- ▶ Industrial Technology
- ▶ Mechanical Engineering Technology

## Cattaraugus Allegany BOCES



716-376-8200 | [www.caboces.org](http://www.caboces.org)

Programs in Manufacturing Technology:

- ▶ Advanced Manufacturing
- ▶ Computer Aided Design

## Erie Community College



716-851-1ECC | [www.ecc.edu](http://www.ecc.edu)

Certificates and 2-year Associate Degrees:

- ▶ Industrial Technology
- ▶ CNC Precision Machining
- ▶ Mechanical Engineering Technology
- ▶ Engineering Science
- ▶ Computer Aided Drafting and Design (CADD)

## Erie 1 BOCES



716-822-3333 | [www.e1b.org](http://www.e1b.org)

Programs in Manufacturing Technology:

- ▶ Precision Machine Technician

## Erie 2 BOCES



800-228-1184 or 716-549-4454 | [www.e2ccb.org](http://www.e2ccb.org)

Programs in Manufacturing Technology:

- ▶ Motorsports Fabrication/Precision Machining
- ▶ Computer Assisted Design and Drafting
- ▶ Pre-Engineering Technology
- ▶ Metal Fabrication

## Jamestown Community College



800-388-8557 or 716-338-1000 | [www.sunjcc.edu](http://www.sunjcc.edu)

Certificates and 2-year Associate Degrees:

- ▶ Mechanical Technology
- ▶ Computer Aided Design
- ▶ Engineering Science
- ▶ Welding Technology
- ▶ Machine Tool Technology

## Monroe Community College (MCC)



585-292-2000 | [www.monroecc.edu](http://www.monroecc.edu)

Certificates and 2-year Associate Degrees:

- ▶ Precision Machining
- ▶ Mechanical Technology
- ▶ Engineering Science
- ▶ Manufacturing Technology

## Niagara County Community College (NCCC)



716-614-6222 | [www.niagaracc.suny.edu](http://www.niagaracc.suny.edu)

Certificates and 2-year Associate Degrees:

- ▶ Computer-Aided Drafting and Design (CADD)
- ▶ Mechanical Technology: Mechanical Design

## Orleans Niagara BOCES



800-836-7510 | [www.onboces.org](http://www.onboces.org)

Programs in Manufacturing Technology:

- ▶ Industrial Blueprint Reading

## UB School of Engineering and Applied Sciences



716-645-2771 | [www.eng.buffalo.edu](http://www.eng.buffalo.edu)

4-year Bachelor Degrees:

- ▶ Electrical Engineering
- ▶ Industrial Engineering
- ▶ Mechanical Engineering
- ▶ Aerospace Engineering

### Sources used to compile information for this brochure:

Buffalo Niagara Enterprise	National Association of Manufacturers
Buffalo Niagara Partnership	New York State Department of Labor
Business First of Buffalo	University at Buffalo Regional Institute
Manufacturing Association of Central New York	U.S. Census Bureau
	U.S. Department of Labor



## ADVANCED MANUFACTURING PARTNERS

- ▶ Buffalo and Erie County Workforce Development Consortium, Inc.
- ▶ Buffalo and Erie County Workforce Investment Board, Inc.
- ▶ Buffalo/Niagara Manufacturing Alliance
- ▶ Buffalo Niagara Partnership Manufacturers Council
- ▶ Machine Shops Association of Western New York (MSA of WNY)
- ▶ NTMA, Manufacturers Alliance
- ▶ Alfred State College
- ▶ Buffalo Public Schools Adult Education Division
- ▶ Buffalo State College
- ▶ Cattaraugus Allegany BOCES
- ▶ Erie Community College
- ▶ Erie 1 BOCES
- ▶ Erie 2 BOCES
- ▶ Jamestown Community College
- ▶ Monroe Community College (MCC)
- ▶ Niagara County Community College (NCCC)
- ▶ Orleans Niagara BOCES
- ▶ UB School of Engineering and Applied Sciences



### Buffalo and Erie County Workforce Investment Board, Inc.

716-504-1480

[www.worksourceone.com](http://www.worksourceone.com)



This brochure was developed by ECC under funding made possible by the New York State Department of Labor.

Brochure concept and design  
by Sassy Design Group.