CAREERS IN ADVANCED MANUFACTURING

The Skills Gap & What it Means for Future Employment

MFG DAYS

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"Manufacturing has undergone a seismic shift in the way it operates. While traditional assembly line jobs exist, the industry is moving rapidly toward jobs with irreplaceable human skills, such as creativity, ingenuity and critical thinking."

~ Forbes

CAREERS IN MANUFACTURING

(NATIONAL DATA)

1. U.S. manufacturing is will need to fill 4 million jobs by 2030.

2. There are currently 500,000 manufacturing job openings in the U.S.

3. Average annual compensation for a manufacture worker is $61K.

4. Manufacturing employs more than 11 million people in the U.S., making it the 5th largest sector.

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WHY ARE THERE SO MANY MANUFACTURING JOBS?

- Aging workforce, nearly one-fourth of manufacturing workers are 55 years or older. As workers age there is a need to backfill positions.
- Misconceptions that manufacturing is a dirty and unsafe environment. Today's facilities are clean, high tech, and safe.
- Lack of awareness about career growth and education/training opportunities. Many manufacturers provide career and workforce development programs.
- Innovation and technological enhancements will continue to redefine work.
- Growing skills gap

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WHAT IS THE "SKILLS GAP"?

- A mismatch between the skills employers rely on in their employees, and the skills that job seekers possess.
- The mismatch makes it difficult to find jobs and for employers to find appropriately trained workers.
- High wage middle-skill jobs are increasingly difficult to fill.
  - Welding, Machinists, Maintenance Technicians, etc.
  - Post-secondary applied training programs typically take between several months to more than a year. Graduates from these programs/certifications are in high demand.
  - Experience and knowledge can be gained through high school CTE classes, part-time and full-time jobs, Co-ops and on-the-job training.

SKILLS GAP CRISIS

1. Five out of ten open positions for skilled workers remain unoccupied due to skills gap crisis.

2. Inability to fill higher paying entry-level production positions, let alone find and retain skilled workers for specialized roles.

3. Finding the right talent is now 36% harder than it was in 2018, even though the unemployment rate has nearly doubled since.

4. Five of six fastest growing manufacturing occupations require a skill set that spans the human and technology aspect but does not require a post-secondary education.

5. Eight in ten job titles with the highest number of job postings in 2019 and 2020 were for entry and mid-level positions, generally requiring only a post-secondary certificate or high-school diploma.

*Deloitte Manufacturing Skills Gap Survey

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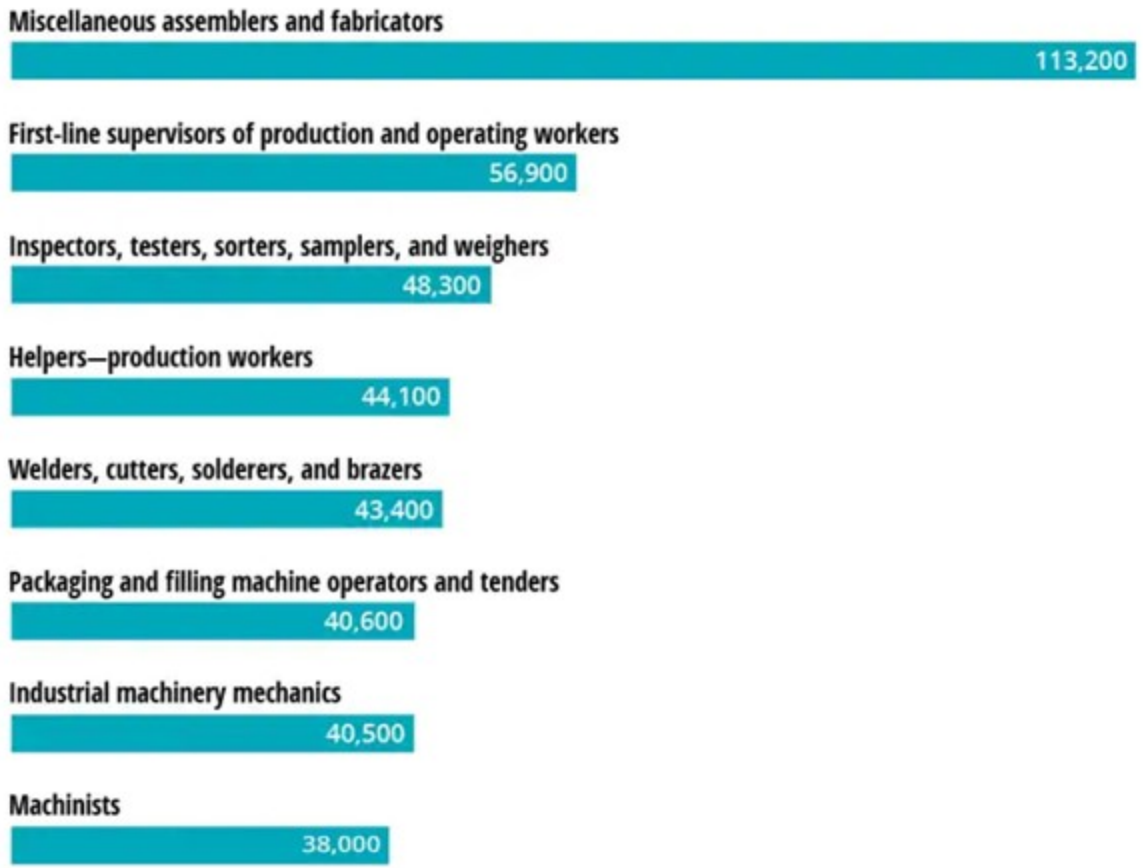
FIGURE 3

Inability to fill key middle-skill roles looms large for manufacturing companies

Manufacturing middle-skill occupations with the highest projected job openings during 2019–2029



Note: Only those jobs considered where at least 50% are employed by manufacturing industry.

Source: Deloitte analysis of data from O*Net.

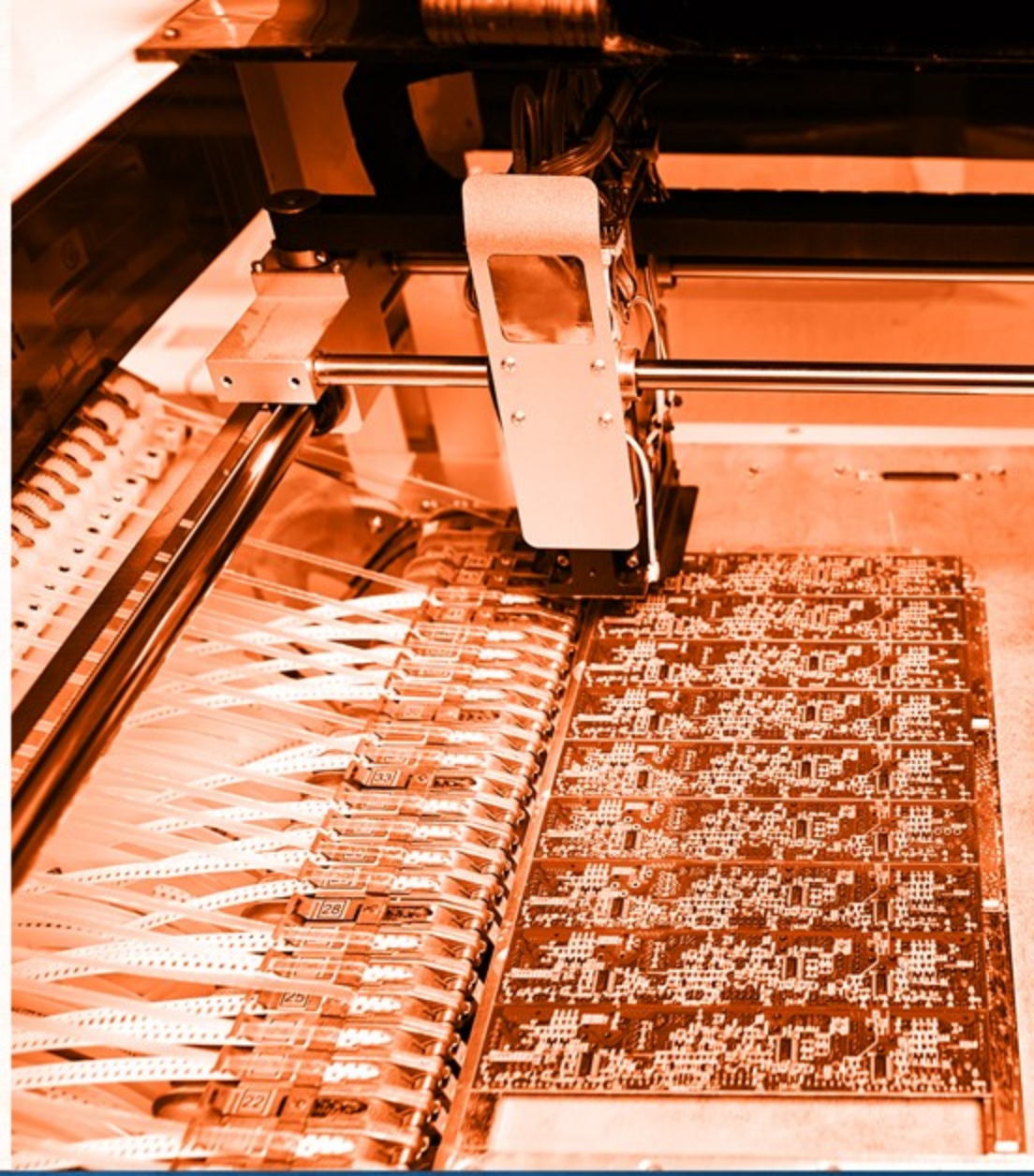


FIGURE 4

An estimated 2.1 million open positions may prove difficult to fill by 2030

1.5 million
new jobs due to expected growth in manufacturing

2.5 million
open jobs from retirements

JOB OPENINGS

4 million
MANUFACTURING JOBS TO FILL FROM 2020–2030

JOBS

2.1 million
jobs to go unfilled from 2020–2030 due to skill gap

1.9 million
jobs likely to be filled

53/100 positions may prove difficult to fill due to the lack of qualified talent or skills.

Note: Retirement age of 66 was considered for the above analysis.

Source: Deloitte analysis of data from the Bureau of Labor Statistics and estimates from the Deloitte economic analysis using the Oxford Global Economic Model.

FIGURE 5

The changing nature of skills, roles, and jobs further challenges manufacturers

An illustration of how current manufacturing jobs are likely to change in coming years

Human capabilities

- Basic digital learning agility
- Management of resources
- Decision-making/problem-solving
- Ability to handle multiple teams and team members
- Advanced digital skills such as process twin development and testing

Specialized skills

- Understanding and working with state-of-the-art robotics and automated equipment
- Data analysis
- Proficiency with advanced manufacturing technologies
- Automated process monitoring and control
- Production process proficiency
- Leveraging digital systems

Technology skills

- Understanding of connected equipment and industrial control software
- Computer aided manufacturing (CAM)
- 6-sigma DMAIC or DFSS certified
- Advanced customer data analytics
- Advanced computer skills and knowledge of document and spreadsheet products
- Working knowledge of statistical analysis

Source: Deloitte analysis based on data from O*Net.

TOP SKILLS NEEDED

- Working with tools and techniques
- Critical thinking
- Digital skills
- Technology & computer skills
- Programming for robots & automation
- Strong work ethic
- Follow directions
- Willingness to Learn

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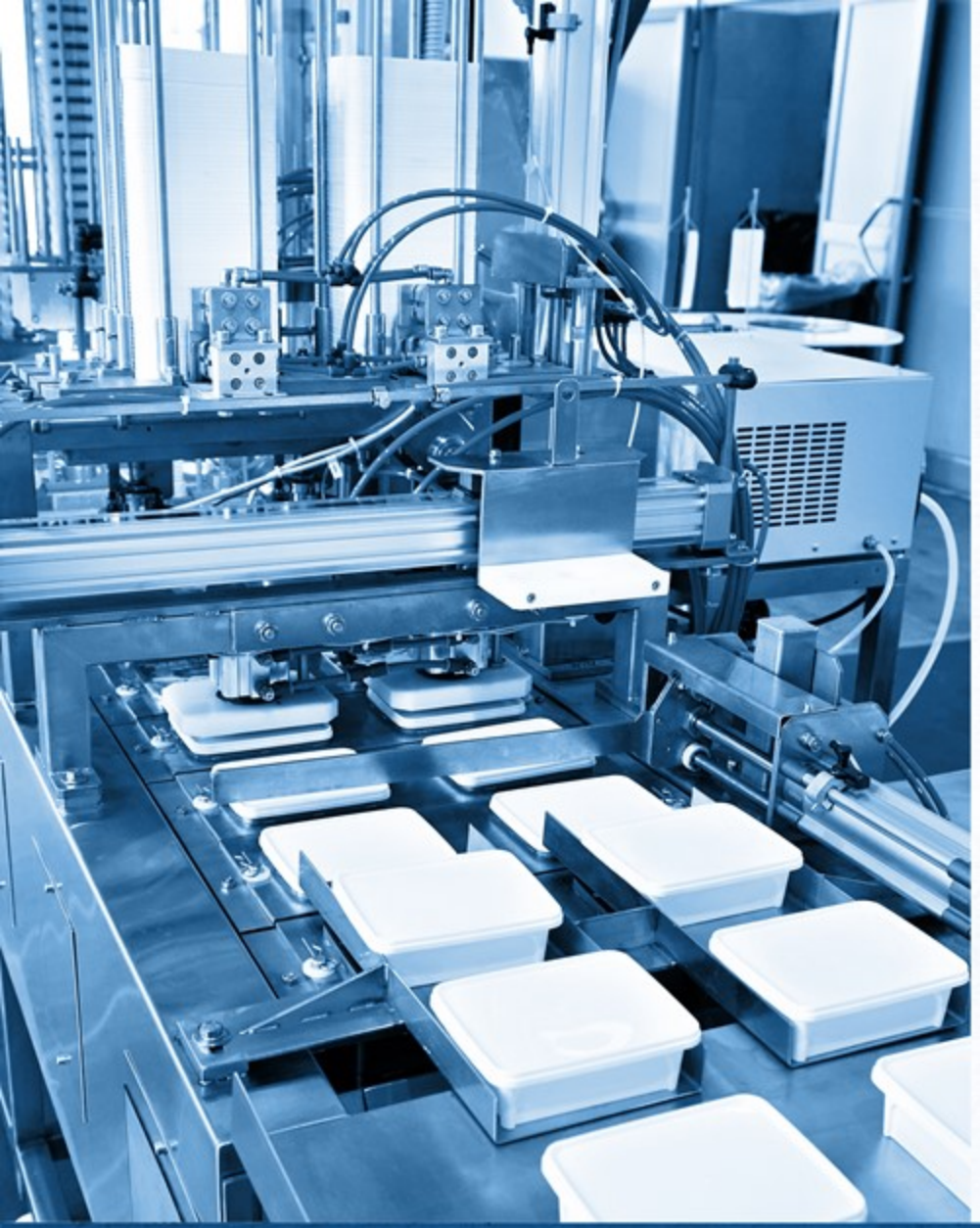

TOP PRODUCTION CAREERS & ANNUAL SALARY

- CNC Operators ($42,260)
- CNC Programmers ($57,470)
- Industrial Technologists/Technicians ($57,320)
- Machinists ($47,800)
- Maintenance Worker, Machinery ($50,100)
- Production Workers ($31,420)
- Quality Control Analyst ($52,460)
- Tool & Die Maker ($55,520)
- Welders, Cutters, Solderers, Brazers, & Fitters ($46,690)

ADDITIONAL CAREERS
IN MANUFACTURING & ANNUAL SALARIES

- First-Line Supervisors of Mechanics ($70,240)
- First-Line Supervisors of Production Workers ($62,850)
- Human Resources Manager ($121,220)
- Human Resource Specialist ($63,490)
- Product Designer ($87,112)
- Marketing Production Manager ($62,000)
- Mechanical Engineer ($90,160)
- Network & Computer Administrator ($84,810)
- Supply Chain Manager ($96,390)

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MAKING SENSE OF IT ALL –
WHY IS MANUFACTURING A GOOD CAREER?

1. There is a growing need for workers due to a labor and skill shortage, resulting in the potential for 2.1 million jobs to go unfilled by 2030.

2. Jobs are not being eliminated; they are evolving to become more advanced, requiring a skilled workforce with an average annual salary of $61,000 verse the average salary $56,00 for all jobs in U.S.

3. Manufacturing plants are increasingly becoming cleaner and safer environments due to innovation and technological enhancements resulting in better working conditions for employees.

4. The pandemic has increased the reshoring of manufacturing jobs in the U.S, with 2021 on track to add 224,000 jobs from overseas.

5. Enjoy a fulfilling career with upward career growth and geographic mobility.

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RESOURCES

www.asme.org/topics-resources/content/state-of-american-manufacturing-2019

www.nam.org/facts-about-manufacturing/

www.forbes.com/sites/realspin/2017/03/08/future-proofing-manufacturing-jobs/#647bf9771375

https://www2.deloitte.com/us/en/pages/manufacturing/articles/future-of-manufacturing-skills-gap-study.html

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