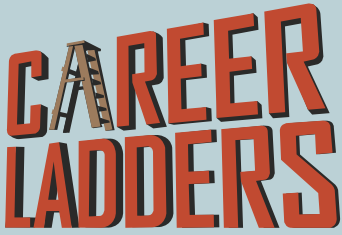


COMPUTER-AIDED DRAFTING AND DESIGN TRAINEE



Computer-aided drafting and design trainees are employees who combine on-the-job training with related classes to create blueprints for manufactured products and provide technical support for other engineering activities.

JOB TITLES COMMON TO THIS CAREER OCCUPATION INCLUDE:

CAD Operator Trainee CAD Designer Trainee Rapid Prototype Trainee
 CAD Detailer Trainee Expediter Trainee Service Technician Trainee

SAGINAW VALLEY

Each ladder depicts a series of work experiences that leads to more challenging and higher paying opportunities. While every level of the ladder can provide a satisfying job, some employees will choose to gain even more skills and responsibilities that will advance them in their careers. To do so, they will need more education, training, and work experiences. Some jobs will require a certificate, a license, or an advanced degree.

CLIMBING THE CAREER LADDER

ADVANCED LEVEL

Bachelor's degree or proven technical skills that can be demonstrated through industry experience

Design Engineer \$20.00-\$30.50/hour	Manager \$19.00-\$32.00/hour
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MID LEVEL

Associate's degree or equivalent training and experience

Design Specialist \$15.00-\$23.50/hour	Skilled Trades \$17.85-\$24.00/hour	Manufacturing Support Specialist \$15.00-\$23.50/hour
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ENTRY LEVEL

High school diploma and completion of the Engineering/Manufacturing and Industrial Technology Career Pathway requirements and/or appropriate career and technical education classes

CAD and Design Trainee \$8.10-\$12.00/hour	Apprentice \$8.00-\$15.00/hour	Machinist Trainee \$8.10-\$12.00/hour
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Wages will vary within this occupation based on the ability of the employee to perform the job without the aid of close supervision. The ability to do work with a high degree of accuracy will also increase the wage and the employee's advancement opportunities in the company.

JOB DESCRIPTION

Each occupation is described in terms of specific tasks and typical job duties.

A COMPUTER-AIDED DRAFTING AND DESIGN TRAINEE MUST BE ABLE TO:

- Learn to make blueprints from engineering and customer product descriptions
- Learn the use of computer-aided drafting programs and equipment
- Use mathematics and learn to do calculations to determine the location of various features on a designed part
- Show good writing skills and communicate written thoughts to others
- Communicate with coworkers and supervisors to receive information and instructions
- Be reliable and punctual in attendance

WAGES

Wage information was obtained from the Michigan Department of Labor and Economic Growth and from local employers to give a general idea of the wages and salaries for this occupation.

WAGE RANGE

\$8.10-\$12.00/hour

WORKING CONDITIONS

Most CAD and design trainees work a standard 40-hour week with only a small number who work part-time. They usually work in comfortable offices furnished to accommodate their tasks. They may sit at adjustable drawing boards or drafting tables when doing manual drawings, although most CAD and design trainees work at computer terminals much of the time. Because they spend long periods of time in front of computer terminals doing detailed work, they may be susceptible to eyestrain, back discomfort, and hand and wrist problems.

EDUCATION AND TRAINING

Courses, programs, and certificates that are needed for employment are offered by local education and training providers.



HIGH SCHOOL

- Completion of high school's Engineering/Manufacturing and Industrial Technology Career Pathway and/or appropriate career and technical education classes
- Algebra
- Geometry
- Trigonometry
- Physics
- Career studies, such as engineering/computer-aided drafting and pre-engineering
- Co-op work experience
- Saginaw/Midland/Bay Michigan Works! automation certificate

COMMUNITY COLLEGE

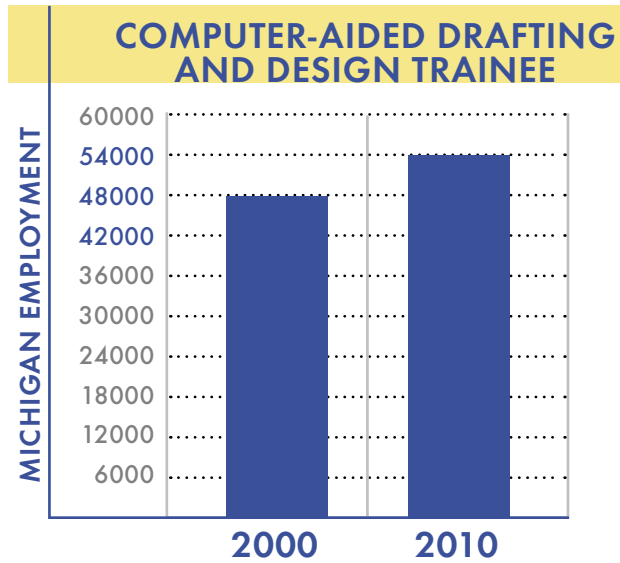
- Computer-aided drafting/computer numeric control certificate
- Delta College: certificate in computer-aided drafting; individual classes; associate's in applied science, manufacturing technology; bachelor of science transfer programs

LOCAL EDUCATION AND TRAINING PROVIDERS

- Local school districts
- Bay-Arenac ISD Career Center
- Saginaw Career Complex
- Saginaw/Midland/Bay Michigan Works!
- Delta College

JOB OUTLOOK

The rate of growth within this occupation is projected by data from local employers and the Michigan Department of Labor and Economic Growth.



ADVANCEMENT

Computer-aided drafting and design trainees are employees beginning their careers in advanced manufacturing. With continuing education and on-the-job training, they will advance to a design specialist position or be considered for other promotions within the company. Most companies will provide a training plan for the new employee. Computer-aided drafting and design trainees are supervised by an experienced employee who helps them learn how to create quality blueprints. Trainees are usually given progressively challenging job assignments to increase their skills.

WHAT THE EMPLOYER SAID



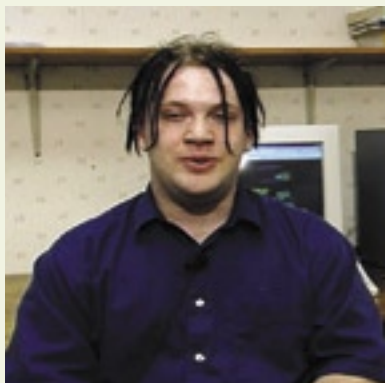
WHAT DO YOU LOOK FOR IN A POTENTIAL EMPLOYEE FOR THIS POSITION?

“When we look for someone who is a CAD and design trainee, we look for someone who is knowledgeable in computer-aided drafting and design. Sometimes our company hires students from career centers because they have the training that we need. We also look for someone who can work independently and yet ask questions when he or she is not sure about something. We also look for someone who can use multiple software packages, has great attendance, and is willing to tackle a wide scope of projects.”

Aurora Ratza, technical director
Ortho Design Inc.

STAR PROFILE

This interview is intended to show you what is needed to be a star employee.



EMPLOYEE:
SPENCER KANE

OCCUPATION:
DESIGNER

COMPANY:
ORTHO DESIGN INC.

TELL US HOW YOU ATTAINED YOUR CURRENT POSITION.

I was enrolled at the Saginaw Career Complex and did job-shadowing for a week at Ortho Design. Because I knew CAD design so well, I was then allowed to work four days a week. The company then hired me.

DESCRIBE YOUR TYPICAL DAY.

I work from 7:30 a.m. to 4:00 p.m. I have all office work, with my own cubicle. I work for the designers doing whatever work they need me to do. The software packages that I use are AutoCAD and Inventor.

WHAT TRAINING AND EDUCATION DID YOU NEED TO ENTER THIS POSITION?

I went to school at the Saginaw Career Complex and learned how to do CAD design.

WHAT QUALITIES MAKE SOMEONE A “STAR” IN THIS OCCUPATION?

A star has determination and willpower. They also want to do this type of work. There is a lot to learn so there is a fast learning curve. A star has to be able to learn new software, how new machines work, and be able to multi-task.

WHAT DO YOU LIKE MOST/LEAST ABOUT YOUR JOB?

The thing I like most is the work environment. Everyone I work with makes it lots of fun. My boss chose to make the environment non-chaotic to boost worker morale. I don't get bored because things are always interesting.

The thing I like least is how much time I sit at the computer.

WHAT ADVICE CAN YOU GIVE SOMEONE SEEKING A JOB IN YOUR FIELD?

If you can, attend the Saginaw Career Complex and participate in a job-shadowing experience so that you can actually see what people do on the job.

ARE THERE ANY LICENSES OR CERTIFICATIONS NEEDED FOR YOUR POSITION?

No licenses or certifications are needed for my position.

ACKNOWLEDGMENTS

The Career Ladders project began as a Saginaw County Vision 2020 initiative. To date, more than 300 individuals have been involved in the project. It is impossible to list them all, but the Comprehensive Education and Workforce Development Committee appreciates each one and the incredible participation by our major employers and educational institutions, as well as the support from the Arnold and Gertrude Boutell Memorial Fund, The Dow Chemical Company, The Dow Corning Foundation, the Fordney Club, the Hospital Council of East Central Michigan, the Michigan Department of Labor and Economic Growth, the National Tooling and Machining Association – Saginaw Valley Chapter, the Saginaw Community Foundation, the Saginaw County Business and Education Partnership, the Saginaw County Chamber of Commerce Foundation, Saginaw County's local school districts, Saginaw County's Promise, the Saginaw County Vision 2020, the Saginaw Future Inc., the Saginaw/Midland/Bay Michigan Works!, the Saginaw Township Business Association, the Saginaw Valley Manufacturers' Association, and the Saginaw Valley Tech Prep Partnership. We also want to thank NOVA for their guidance.

EQUAL OPPORTUNITY EMPLOYER/PROGRAM. AUXILIARY AIDS AND SERVICES ARE AVAILABLE UPON REQUEST TO INDIVIDUALS WITH DISABILITIES.