

Industrial Designers

Summary



Industrial designers imagine how consumers might use a product when they create and test designs.

Quick Facts: Industrial Designers

2018 Median Pay	\$66,590 per year \$32.01 per hour
Typical Entry-Level Education	Bachelor's degree
Work Experience in a Related Occupation	None
On-the-job Training	None
Number of Jobs, 2018	43,900
Job Outlook, 2018-28	3% (Slower than average)
Employment Change, 2018-28	1,500

[What Industrial Designers Do](#)

Industrial designers combine art, business, and engineering to develop the concepts for manufactured products.

[Work Environment](#)

Industrial designers work in a variety of industries. Although industrial designers work primarily in offices, they may travel to testing facilities, design centers, clients' exhibit sites, users' homes or workplaces, and places where the product is manufactured.

[How to Become an Industrial Designer](#)

A bachelor's degree is usually required for entry-level industrial design jobs. It is also important for industrial designers to have an electronic portfolio with examples of their design projects.

[Pay](#)

The median annual wage for industrial designers was \$66,590 in May 2018.

[Job Outlook](#)

Employment of industrial designers is projected to grow 3 percent from 2018 to 2028, slower than the average for all occupations. Consumer demand for new products and new product styles should sustain the demand for industrial designers.

[State & Area Data](#)

Explore resources for employment and wages by state and area for industrial designers.

[Similar Occupations](#)

Compare the job duties, education, job growth, and pay of industrial designers with similar occupations.

[More Information, Including Links to O*NET](#)

Learn more about industrial designers by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

What Industrial Designers Do



Industrial designers work primarily in offices, but they may travel to the places where the products are manufactured.

Industrial designers develop the concepts for manufactured products, such as cars, home appliances, and toys. They combine art, business, and engineering to make products that people use every day. Industrial designers consider the function, aesthetics, production costs, and usability of products when developing new product concepts.

Duties

Industrial designers typically do the following:

- Consult with clients to determine requirements for designs
- Research the various ways a particular product might be used, and who will use it
- Sketch ideas or create renderings, which are images on paper or on a computer that provide a visual of design ideas
- Use computer software to develop virtual models of different designs
- Create physical prototypes of their designs
- Examine materials and manufacturing requirements to determine production costs
- Work with other specialists, such as mechanical engineers and manufacturers, to evaluate whether their design concepts will fill needs at a reasonable cost
- Evaluate product safety, appearance, and function to determine if a design is practical
- Present designs and demonstrate prototypes to clients for approval

Some industrial designers focus on a particular product category. For example, they may design medical equipment or work on consumer electronics products, such as computers and smart phones. Other designers develop ideas for products such as new bicycles, furniture, housewares, and snowboards.

Other designers, sometimes called *user interface designers* or *interaction designers*, focus on the usability of a product, such as an electronic device, and ensure that the product is both simple and enjoyable to use.

Industrial designers imagine how consumers might use a product and test different designs with consumers to see how each design looks and works. Industrial designers often work with [engineers](#), production experts, and [market research analysts](#) to find out if their designs are feasible. They apply the input from their colleagues' professional expertise to further develop their designs.

For example, industrial designers may work with market research analysts to develop plans to market new product designs to consumers.

Computers are a major tool for industrial designers. Industrial designers use two-dimensional computer-aided design and drafting (CADD) software to sketch ideas, because computers make it easy to make changes and show alternatives. Three-dimensional CAD software is increasingly being used by industrial designers as a tool to transform their two-dimensional designs into models with the help of three-dimensional printers. If they work for manufacturers, they also may use computer-aided industrial design (CAID) software to create specific machine-readable instructions that tell other machines exactly how to build the product.

Work Environment



Work spaces for industrial designers often include drafting tables and meeting rooms for brainstorming with colleagues.

Industrial designers held about 43,900 jobs in 2018. The largest employers of industrial designers were as follows:

Manufacturing	31%
Self-employed workers	23
Wholesale trade	10
Specialized design services	8
Architectural, engineering, and related services	7

Work spaces for industrial designers often include work tables for sketching designs, meeting rooms with whiteboards for brainstorming with colleagues, and computers and other office equipment for preparing designs and communicating with clients. Although industrial designers work primarily in offices, they may travel to testing facilities, design centers, clients' exhibit sites, users' homes or workplaces, and places where the product is manufactured.

Work Schedules

Industrial designers who are self-employed or work for firms that hire them out to other organizations may need to adjust their workdays frequently in order to meet with clients in the evenings or on weekends. In addition, they may spend some of their time looking for new projects or competing with other designers for contracts.

How to Become an Industrial Designer



A bachelor's degree in industrial design, architecture, or engineering is usually required for entry-level industrial design jobs.

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Education

A bachelor's degree in industrial design, architecture, or engineering is usually required for entry-level industrial design jobs. Most industrial design programs include courses in drawing, computer-aided design and drafting (CADD), and three-dimensional modeling, as well as courses in business, industrial materials and processes, and manufacturing methods.

The [National Association of Schools of Art and Design](#) accredits more than 360 postsecondary colleges, universities, and independent institutes with programs in art and design. Many schools require successful completion of some basic art and design courses before granting entry into a bachelor's degree program. Applicants also may need to submit sketches and other examples of their artistic ability.

Many programs provide students with the opportunity to build a professional portfolio of their designs from classroom projects, internships, or other experiences. Students can use these examples of their work to demonstrate their design skills when applying for jobs and bidding on contracts for work.

Important Qualities

Analytical skills. Industrial designers use logic or reasoning skills to study consumers and recognize the need for new products.

Artistic ability. Industrial designers sketch their initial design ideas, which are used later to create prototypes. As such, designers must be able to express their design through illustration.

Computer skills. Industrial designers use computer-aided design software to develop their designs and create prototypes.

Creativity. Industrial designers must be innovative in their designs and the ways in which they integrate existing technologies into their new product.

Interpersonal skills. Industrial designers must develop cooperative working relationships with clients and colleagues who specialize in related disciplines.

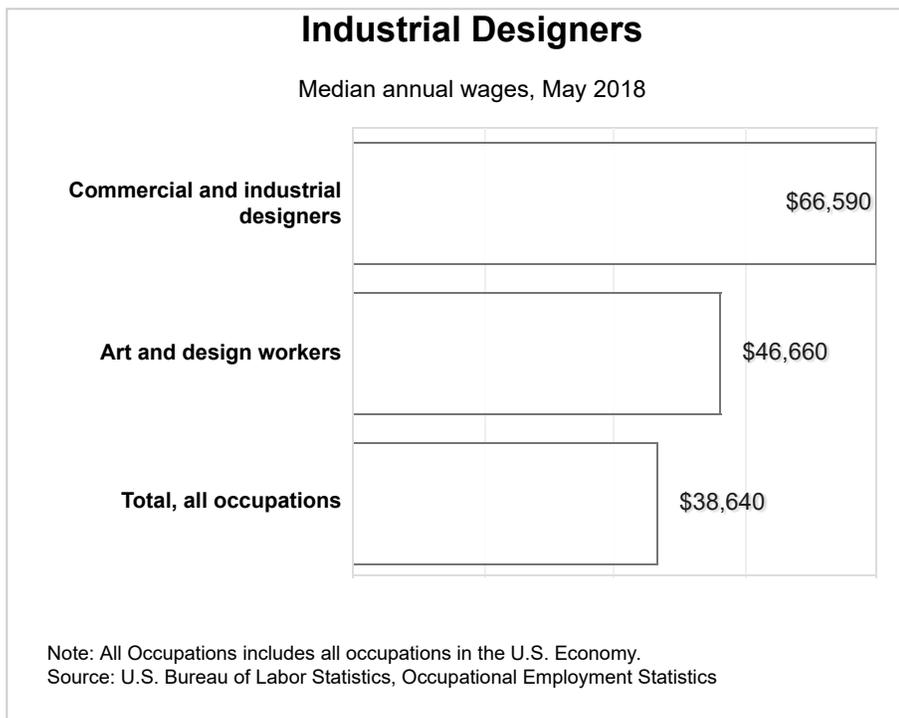
Mechanical skills. Industrial designers must understand how products are engineered, at least for the types of products that they design.

Problem-solving skills. Industrial designers determine the need, size, and cost of a product; anticipate production issues; develop alternatives; evaluate options; and implement solutions.

Advancement

Experienced designers in large firms may advance to chief designer, design department head, or other supervisory positions. Some designers become [teachers](#) in design schools or in colleges and universities. Many teachers continue to consult privately or operate small design studios in addition to teaching. Some experienced designers open their own design firms.

Pay



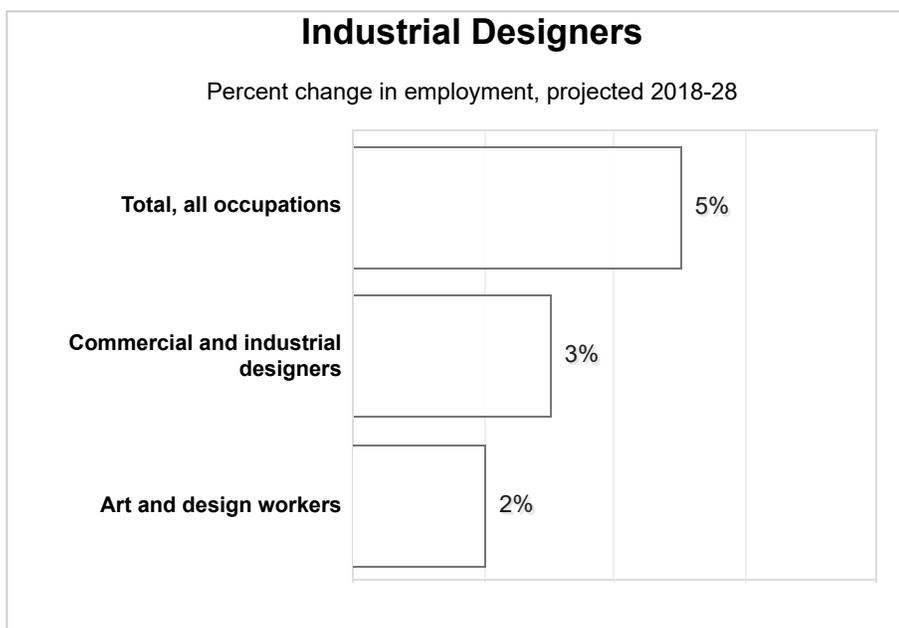
The median annual wage for industrial designers was \$66,590 in May 2018. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$38,630, and the highest 10 percent earned more than \$108,040.

In May 2018, the median annual wages for industrial designers in the top industries in which they worked were as follows:

Architectural, engineering, and related services	\$83,490
Wholesale trade	64,660
Manufacturing	64,170
Specialized design services	59,450

Industrial designers who are self-employed or work for firms that hire them out to other organizations may need to adjust their workdays frequently in order to meet with clients in the evenings or on weekends. In addition, they may spend some of their time looking for new projects or competing with other designers for contracts.

Job Outlook



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

Employment of industrial designers is projected to grow 3 percent from 2018 to 2028, slower than the average for all occupations. Consumer demand for innovative products and new product styles should sustain the demand for industrial designers.

Employment of industrial designers is likely to continue to grow in areas that require a high degree of technical ability and design sophistication. Products in these areas require detailed user specifications to be incorporated into the design process in order to meet consumer expectations and ensure the efficient and enjoyable use of the product.

However, employment in the manufacturing industry is projected to show little or no change over the next decade.

Job Prospects

Prospects should be best for job applicants who have a strong background in two- and three-dimensional computer-aided design and drafting (CADD) and computer-aided industrial design (CAID). The increasing trend toward the use of sustainable resources is likely to improve prospects for applicants who know how to work with sustainable resources.

In addition, as more products become digitized and Internet-capable, applicants with experience in user interface (UI), user experience (UX), and interactive design (IxD) may have better job prospects.

Employment projections data for industrial designers, 2018-28

Occupational Title	SOC Code	Employment, 2018	Projected Employment, 2028	Change, 2018-28		Employment by Industry
				Percent	Numeric	
Commercial and industrial designers	27-1021	43,900	45,300	3	1,500	Get data

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

State & Area Data

Occupational Employment Statistics (OES)

The [Occupational Employment Statistics](#) (OES) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. The link(s) below go to OES data maps for employment and wages by state and area.

- [Commercial and industrial designers](#)

Projections Central

Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual state Employment Projections offices. All state projections data are available at www.projectionscentral.com. Information on this site allows projected employment growth for an occupation to be compared among states or to be compared within one state. In addition, states may produce projections for areas; there are links to each state's websites where these data may be retrieved.

CareerOneStop

CareerOneStop includes hundreds of [occupational profiles](#) with data available by state and metro area. There are links in the left-hand side menu to compare occupational employment by state and occupational wages by local area or metro area. There is also a [salary info tool](#) to search for wages by zip code.

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of industrial designers.

	OCCUPATION	JOB DUTIES	ENTRY-LEVEL EDUCATION	2018 MEDIAN PAY
	Architects	Architects plan and design houses, factories, office buildings, and other structures.	Bachelor's degree	\$79,380

	OCCUPATION	JOB DUTIES	ENTRY-LEVEL EDUCATION	2018 MEDIAN PAY
	<u>Desktop Publishers</u>	Desktop publishers use computer software to design page layouts for items that are printed or published online.	Associate's degree	\$42,910
	<u>Drafters</u>	Drafters use software to convert the designs of engineers and architects into technical drawings.	Associate's degree	\$55,550
	<u>Graphic Designers</u>	Graphic designers create visual concepts, using computer software or by hand, to communicate ideas that inspire, inform, and captivate consumers.	Bachelor's degree	\$50,370
	<u>Industrial Engineers</u>	Industrial engineers devise efficient systems that integrate workers, machines, materials, information, and energy to make a product or provide a service.	Bachelor's degree	\$87,040
	<u>Interior Designers</u>	Interior designers make indoor spaces functional, safe, and beautiful by determining space requirements and selecting essential and decorative items.	Bachelor's degree	\$53,370
	<u>Art Directors</u>	Art directors are responsible for the visual style and images in magazines, newspapers, product packaging, and movie and television productions.	Bachelor's degree	\$92,780
	<u>Fashion Designers</u>	Fashion designers create clothing, accessories, and footwear.	Bachelor's degree	\$72,720
	<u>Software Developers</u>	Software developers create the applications or systems that run on a computer or another device.	Bachelor's degree	\$105,590

Contacts for More Information

For more information about industrial designers, visit

[Industrial Designers Society of America](#)

For more information about accredited college-level programs in art and design, visit

[National Association of Schools of Art and Design](#)

Related BLS articles

Career Outlook:

- [“Careers for people who are creative”](#)
- [“From prototype to production: Careers that bring ideas into being”](#)

O*NET

[Commercial and Industrial Designers](#)

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