



## Manufacturing

### Highlights at a Glance

- The Manufacturing sector continues to be a significant contributor to both the Illinois economy and employment picture. Manufacturing is projected to provide 8.5 percent of the total employment in the state thru 2024.
- Many job openings will result from the need to replace experienced manufacturing workers who retire.
- Most manufacturing occupations have annual median wage rates higher than the average in other sectors.
- Many manufacturing occupations require skills acquired from previous positions and on-the-job training.

### Nature of the Industry

The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. Establishments in this sector are often described as plants, factories, or mills. The major Manufacturing sectors in Illinois are:

**Chemical, except Drugs (NAICS 325):** Chemical manufacturing consists of seven segments: basic chemicals; synthetic materials; agricultural chemicals; drugs; paint, coatings, and adhesives; cleaning preparations; and, other chemical products. The production of both organic and inorganic chemicals occurs in this segment.

**Pharmaceutical and Medicine (NAICS 3254):** The pharmaceutical and medicine manufacturing (drugs) industry develops and produces a variety of medicinal and other health-related products that save the lives of millions of people from various diseases and permits many people suffering from illness to recover to lead productive lives. About 31 percent of all jobs in the pharmaceutical and medicine manufacturing industry are in professional and related occupations, mostly scientists and science technicians. About 27 percent of jobs are in production occupations, including both low-skilled and high-skilled jobs.

**Computer and Electronic Products (NAICS 334):** The computer and electronic products manufacturing industry produces computers, computer peripherals, communications equipment, and similar electronic products. Many electronics products or components are incorporated into other industries' products, such as cars, toys, and appliances. The computer and electronic product manufacturing industry has a diverse workforce mainly composed of professionals, who conduct research and development work, and production workers, who are directly involved in the assembly and testing of the industry's products.

**Food (NAICS 311):** Workers in the food manufacturing industry link farmers and other agricultural producers with consumers. They do this by processing raw fruits, vegetables, grains, meats, and dairy products into finished goods ready for the grocer or wholesaler to sell to households, restaurants, or institutional food services. More than half (54 percent) of the industry's workforce are production workers, including skilled precision workers and less skilled machine operators and laborers.

**Machinery (NAICS 333):** Machinery encompasses a vast range of products, ranging from huge industrial turbines costing millions of dollars to the common lawn mower, but all machinery has one common defining feature: it either reduces or eliminates the amount of human work required to accomplish a task. It takes a wide variety of occupations to create and produce a machine, including engineers, technicians, production and assembly workers, supervisors and managers, and support personnel.

**Transportation Equipment (NAICS 336):** The transportation equipment manufactured in this industry include automobiles, sport-utility vehicles (SUVs), vans and pickup trucks, heavy duty trucks, buses, truck trailers, and motor homes. It also includes the manufacturing of the parts that go into these vehicles, such as the engine, seats, brakes, and electrical systems. As the industry strives to improve the flexibility of its workforce, employees are being asked to perform a greater variety of jobs, particularly in the manufacturing plants. This is causing the number of occupational specialties in this industry to shrink in favor of more generic titles, such as team assembler and maintenance worker.

**Printing (NAICS 323):** The printing industry includes establishments primarily engaged in printing text and images on to paper, metal, glass, and some apparel and other materials. Printing can be divided into three distinct stages: *prepress*, the preparation of materials for printing; *press* or *output*, the actual printing process; and *postpress* or *finishing*, the folding, binding, and trimming of printed sheets into their final form. Production occupations make up 53 percent of industry employment.

**Steel (NAICS 331& 332):** Establishments in this industry produce steel by melting iron ore, scrap metal, and other additives in furnaces. The molten metal output is then solidified into semifinished shapes before it is rolled, drawn, cast, and extruded to make sheet, rod, bar, tubing, beams, and wire. Other establishments in the industry make finished steel products directly from purchased steel. Production occupations, transportation and material moving occupations, and installation, maintenance and repair occupations make up the majority of jobs in steel mills.

Code	Standard Occupational Classification (SOC) Title	Emp. 2014	Employment Change		Average Annual Job Openings due to			2015	Training/ Education Level
			2014-2024		Growth	Replcmnts	Total	Median	
			Number	Percent				Annual Wage	
<b>00-0000</b>	<b>Total, All Occupations</b>	<b>6,166,236</b>	<b>512,336</b>	<b>8.31</b>	<b>55,296</b>	<b>143,981</b>	<b>199,277</b>	<b>\$35,721</b>	
<b>Production</b>									
537064	Packers & Packagers, Hand	47,288	2,787	5.89	279	1,257	1,536	\$22,756	Short-term on-the-job training
512092	Team Assemblers	58,987	843	1.43	84	1,267	1,351	\$29,439	Moderate-term on-the-job training
514041	Machinists	30,448	3,202	10.52	320	880	1,200	\$36,619	Long-term on-the-job training
519111	Packaging & Filling Machine Operators & Tenders	21,576	1,189	5.51	119	769	888	\$25,738	Short-term on-the-job training
519199	Production Workers, All Other	26,398	416	1.58	42	540	582	\$28,775	Moderate-term on-the-job training
514121	Welders, Cutters, Solderers & Brazers	15,089	401	2.66	40	433	473	\$36,041	Long-term on-the-job training
511011	1st-Line Svrs/Mgrs, Prod. & Operating Workers	27,541	-42	-0.15	0	435	435	\$58,008	Work exp. in a related occupation
512099	Assemblers & Fabricators, AO	11,723	833	7.11	83	252	335	\$26,207	Moderate-term on-the-job training
514011	Computer-Controlled Machine Tool Operators	6,787	1,281	18.87	128	206	334	\$37,730	Moderate-term on-the-job training
513011	Bakers	9,019	933	10.34	93	197	290	\$24,376	Long-term on-the-job training
513021	Butchers & Meat Cutters	7,778	667	8.58	67	154	221	\$25,399	Long-term on-the-job training
513092	Food Batchmakers	8,170	326	3.99	33	176	209	\$28,725	Moderate-term on-the-job training
514033	Grind/Polish Machine Tool Setters & Operators	4,694	-965	-20.56	0	196	196	\$33,461	Moderate-term on-the-job training
515112	Printing Press Operators & Job Printers	10,204	-1,448	-14.19	0	153	153	\$37,963	Postsecondary vocational award
514031	Cutting, Punching & Press Machine Operators	11,069	-2,076	-18.76	0	140	140	\$31,903	Moderate-term on-the-job training
519023	Mix/Blend Machine Setters, Operators & Tenders	5,471	60	1.10	6	119	125	\$34,761	Moderate-term on-the-job training
514081	Multiple Machine Tool Setters & Operators	6,176	143	2.32	14	107	121	\$35,496	Moderate-term on-the-job training
513023	Slaughterers & Meat Packers	4,612	231	5.01	23	91	114	\$26,120	Moderate-term on-the-job training
512022	Electric/Electronic Equipment Assemblers	8,863	-430	-4.85	0	109	109	\$29,535	Short-term on-the-job training
513093	Food Cooking Machine Operators & Tenders	3,864	246	6.37	25	80	105	\$26,564	Short-term on-the-job training
537063	Machine Feeders & Offbearers	4,226	102	2.41	10	93	103	\$29,351	Short-term on-the-job training
513022	Meat, Poultry & Fish Cutters & Trimmers	3,410	221	6.48	22	67	89	\$24,375	Short-term on-the-job training
514072	Molding/Corkmkg/Casting Machine Operators	5,178	-1,020	-19.70	0	77	77	\$32,681	Moderate-term on-the-job training
514122	Weld/Solder/Braz Machine Setters & Operators	2,653	-450	-16.96	0	76	76	\$34,916	Moderate-term on-the-job training
519121	Coat/Paint/Spray Machine Setters & Operators	3,784	47	1.24	5	71	76	\$32,354	Moderate-term on-the-job training
514021	Extruding/Drawing Machine Setters & Operators	2,954	-489	-16.55	0	73	73	\$31,970	Moderate-term on-the-job training
514034	Lathe/Turning Machine Tool Setters & Operators	2,770	-545	-19.68	0	68	68	\$39,011	Moderate-term on-the-job training
519041	Extruding/Formng/Compctng Machine Operators	1,906	-111	-5.82	0	68	68	\$33,677	Moderate-term on-the-job training
514193	Plating/Coating Machine Setters & Operators	2,546	-481	-18.89	0	63	63	\$31,845	Moderate-term on-the-job training
519122	Painters, Transportation Equipment	2,253	203	9.01	20	42	62	\$41,949	Long-term on-the-job training
519196	Paper Good Machine Setters, Operators & Tenders	4,386	-744	-16.96	0	62	62	\$33,669	Moderate-term on-the-job training
514023	Rolling Machine Setters, Operators & Tenders	2,469	-211	-8.55	0	61	61	\$40,701	Moderate-term on-the-job training
515113	Print Binding & Finishing Workers	3,265	-466	-14.27	0	49	49	\$32,156	Moderate-term on-the-job training
519032	Cutting/Slicing Machine Setters & Operators	2,321	-248	-10.69	0	46	46	\$32,683	Moderate-term on-the-job training
512041	Structural Metal Fabricators & Fitters	1,830	64	3.50	6	30	36	\$37,502	Moderate-term on-the-job training
514111	Tool & Die Makers	6,247	-559	-8.95	0	31	31	\$53,157	Long-term on-the-job training
514191	Heat Treating Equipment Setters & Operators	1,778	-315	-17.72	0	31	31	\$33,114	Moderate-term on-the-job training
515111	Prepress Technicians & Workers	1,832	-387	-21.12	0	29	29	\$39,673	Short-term on-the-job training
514022	Forging Mach Setters, Operators & Tenders	1,146	-215	-18.76	0	28	28	\$40,784	Moderate-term on-the-job training
512031	Engine & Other Machine Assemblers	1,177	23	1.95	2	24	26	\$40,703	Short-term on-the-job training
517011	Cabinetmakers & Bench Carpenters	2,266	83	3.66	8	18	26	\$39,141	Long-term on-the-job training
517042	Woodworking Machine Setters & Operators	1,188	56	4.71	6	20	26	\$28,398	Moderate-term on-the-job training
519012	Separate/Filter Mach Setters/Operators	697	19	2.73	2	22	24	\$42,206	Moderate-term on-the-job training
512023	Electromechanical Equipment Assemblers	1,747	-27	-1.55	0	22	22	\$35,161	Short-term on-the-job training
513091	Food Roast/Bake Machine Operators & Tenders	697	74	10.62	7	14	21	\$26,851	Short-term on-the-job training
519151	Photo Process Workers & Machine Operators	1,027	-324	-31.55	0	20	20	\$27,466	Short-term on-the-job training
<b>Manufacturing Production Process Development</b>									
414012	Sales Reps/Wholesale/Mfg,Ex.Tech/Scntific	68,555	4,504	6.57	450	1,410	1,860	\$58,829	Moderate-term on-the-job training
151132	Software Developers, Applications	29,316	7,676	26.18	768	419	1,187	\$91,339	Bachelor's degree
519061	Inspectors, Testers, Sorters & Weighers	21,545	487	2.26	49	542	591	\$34,316	Moderate-term on-the-job training
414011	Sales Reps, Whls/Mfg, Tech/SciProds	21,636	1,104	5.10	110	445	555	\$65,397	Moderate-term on-the-job training
151133	Software Developers, Systems Software	13,971	3,192	22.85	319	200	519	\$101,948	Bachelor's degree
172141	Mechanical Engineers	12,055	654	5.43	65	382	447	\$84,543	Bachelor's degree
151199	Computer Occupations, AO (Software Quality Assurance Engineers & Testers, Quality Control Technicians & Analytical Technicians)	17,312	1,513	8.74	151	223	374	\$85,662	Associate degree
172112	Industrial Engineers	10,109	162	1.60	16	296	312	\$78,146	Bachelor's degree
119041	Engineering Managers	6,856	228	3.33	23	210	233	\$122,943	Bachelor's degree, plus work exp.
172199	Engineers, AO (including Robotics Engineers)	7,838	729	9.30	73	157	230	\$86,182	Bachelor's degree
113051	Industrial Production Managers	7,117	-127	-1.78	0	202	202	\$89,329	Work exp. in a related occupation
172071	Electrical Engineers	5,263	122	2.32	12	116	128	\$92,036	Bachelor's degree
194099	Life, Physical & Social Science Technicians, AO (Quality Control Analysts & Analytical Technicians)	2,425	196	8.08	20	102	122	\$49,969	Associate degree
173029	Engineering Techs, exc Drafters, AO (Manufacturing Engineering & Manufacturing Engineering Technicians)	4,109	78	1.90	8	100	108	\$59,957	Associate degree
173023	Electrical & Electronic Engineering Technicians	3,882	-87	-2.24	0	95	95	\$65,147	Associate degree
172072	Electronics Engineers, exc Computer	3,751	39	1.04	4	83	87	\$97,765	Bachelor's degree
518091	Chemical Plant & System Operators	1,949	-26	-1.33	0	74	74	\$55,969	Long-term on-the-job training

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			2014-2024 Number	Percent	Growth	due to Replcmnts			Total
192031	Chemists	3,004	65	2.16	6	66	72	\$74,993	Bachelor's degree
194031	Chemical Technicians	2,202	19	0.86	2	66	68	\$44,986	Associate degree
194021	Biological Technicians	1,465	66	4.51	7	41	48	\$41,902	Associate degree
172041	Chemical Engineers	1,327	70	5.28	7	36	43	\$92,027	Bachelor's degree
173026	Industrial Engineering Technicians	1,569	-11	-0.70	0	38	38	\$52,575	Associate degree
191012	Food Scientists and Technologists	593	28	4.72	3	21	24	\$61,483	Bachelor's degree
173024	Electro-Mechanical Technicians	691	-1	-0.14	0	17	17	\$49,487	Associate degree
499069	Precision Instrument Equipment Repairers, AO (Electronic Instrument Technicians)	130	3	2.31	0	2	2	\$56,939	Moderate-term on-the-job training
173019	Drafters, All Other	N/A	N/A	N/A	N/A	N/A	N/A	\$58,779	Postsecondary vocational award
191021	Biochemists & Biophysicists	N/A	N/A	N/A	N/A	N/A	N/A	\$84,956	Doctoral degree
<b>Maintenance, Installation &amp; Repair</b>									
499071	General Maintenance & Repair Workers	54,226	3,016	5.56	302	1,421	1,723	\$40,694	Moderate-term on-the-job training
499041	Industrial Machinery Mechanics	11,486	2,530	22.03	253	298	551	\$54,482	Long-term on-the-job training
491011	1st-Line Svrs/Mgrs, Mechanics/Installers	13,811	930	6.73	93	275	368	\$65,086	Work exp. in a related occupation
499043	Maintenance Workers, Machinery	5,489	685	12.48	68	88	156	\$43,576	Short-term on-the-job training
492022	Telecommunication Eqpt Installers & Repairers	8,072	-145	-1.80	0	73	73	\$59,194	Long-term on-the-job training
173027	Mechanical Engineering Technicians (Maintenance Technicians)	1,963	17	0.87	2	48	50	\$52,799	Associate degree
492094	Electronic Repairers, Commercial & Industrial Eqpt (Robotics Technicians)	2,035	44	2.16	4	35	39	\$52,928	Postsecondary vocational award
499062	Medical Equipment Repairers	1,572	70	4.45	7	28	35	\$47,594	Associate degree
<b>Logistics &amp; Inventory Control</b>									
537062	Laborers & Freight/Stock Movers, Hand	153,776	14,411	9.37	1,441	4,577	6,018	\$24,310	Short-term on-the-job training
119199	Managers, AO (incl. Logistics Analysts)	76,873	1,199	1.56	120	1,696	1,816	\$90,564	Work exp. in a related occupation
537051	Industrial Truck & Tractor Operators	31,174	3,033	9.73	303	776	1,079	\$32,779	Short-term on-the-job training
131111	Management Analysts (incl. Logistics Analysts)	31,426	6,070	19.32	607	436	1,043	\$81,208	Bachelor's degree, plus work exp.
435071	Shipping Receiving & Traffic Clerks	31,099	100	0.32	10	675	685	\$31,550	Short-term on-the-job training
435061	Production, Planning & Expediting Clerks	11,721	385	3.28	38	318	356	\$46,200	Short-term on-the-job training
435032	Dispatchers	8,316	613	7.37	61	208	269	\$40,159	Moderate-term on-the-job training
113071	Transportation, Storage & Distribution Managers	6,436	328	5.10	33	142	175	\$81,317	Work exp. in a related occupation
131081	Logisticians	4,855	408	8.40	41	68	109	\$66,599	Bachelor's degree

Note: The Quality Assurance and Health, Safety and Environmental Assurance career pathways were not included in the cluster occupational analysis due to limited labor market information for the specialty occupations in these pathways.

Source: IL Dept. of Employment Security, Economic Information & Analysis Division