



# Exploring Information Technology Careers

**Are you interested in learning more about a career in Information Technology?** Many Information Technology jobs are in high demand, pay well and are projected to have a bright future. In fact, Information Technology jobs are expected to grow at more than double the rate of jobs in Minnesota in general. Minnesota is already home to about 111,000 people working in Information Technology occupations. That's about 4.1% of all employment in Minnesota, while the national average for such occupations is about 3.6%. That means that Information Technology work is more concentrated in Minnesota than the nation as a whole. Almost all Information Technology jobs require education beyond high school. CareerForce can help you explore career opportunities, consider training options and prepare for a job search in Information Technology.

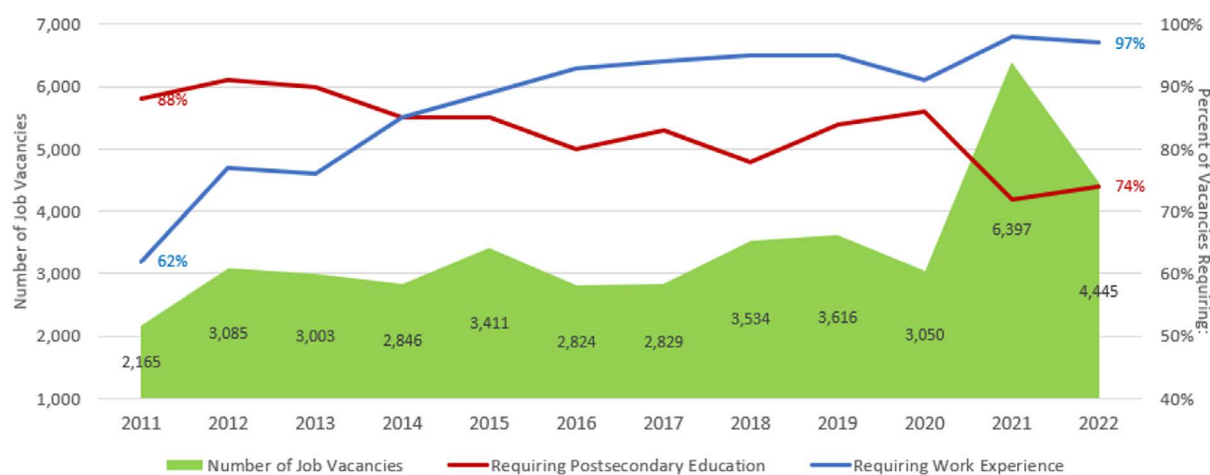
## Minnesota Information Technology Occupation Educational Requirements

SOC Code	SOC Occupational Title	Estimated Statewide Employment	Median Hourly Wage	Minnesota Educational Requirements for Occupations
11-3021	<a href="#">Computer &amp; Information Systems Managers</a>	9,330	\$76.82	Bachelor's Degree
15-1211	<a href="#">Computer Systems Analysts</a>	14,800	\$50.94	Bachelor's Degree
15-1212	<a href="#">Information Security Analysts</a>	2,520	\$51.40	Bachelor's Degree
15-1221	<a href="#">Computer &amp; Information Research Scientists</a>	140	\$66.46	Graduate Degree
15-1231	<a href="#">Computer Network Support Specialists</a>	8,320	\$31.79	Associate's Degree
15-1232	<a href="#">Computer User Support Specialists</a>	11,770	\$29.28	Vocational Training
15-1241	<a href="#">Computer Network Architects</a>	3,380	\$55.06	Bachelor's Degree
15-1242	<a href="#">Database Administrators</a>	1,720	\$50.56	Bachelor's Degree
15-1243	<a href="#">Database Architects</a>	890	\$61.43	Bachelor's Degree
15-1244	<a href="#">Network &amp; Computer Systems Administrators</a>	5,010	\$43.95	Bachelor's Degree
15-1251	<a href="#">Computer Programmers</a>	1,430	\$44.23	Bachelor's Degree
15-1252	<a href="#">Software Developers</a>	36,860	\$52.39	Bachelor's Degree
15-1253	<a href="#">Software Quality Assurance Analysts &amp; Testers</a>	1,950	\$48.48	Bachelor's Degree
15-1254	<a href="#">Web Developers</a>	1,710	\$42.89	Associate's Degree
15-1255	<a href="#">Web &amp; Digital Interface Designers</a>	1,700	\$38.12	Associate's Degree
15-1299	<a href="#">Computer Occupations, All Other</a>	4,380	\$40.96	Bachelor's Degree
15-2031	<a href="#">Operations Research Analysts</a>	2,230	\$40.83	Bachelor's Degree
15-2041	<a href="#">Statisticians</a>	860	\$40.24	Graduate Degree
15-2051	<a href="#">Data Scientists</a>	1,320	\$51.53	Bachelor's Degree



- Because of high demand for Information Technology workers, wages in these occupations are higher than for most occupations in Minnesota. In fact, the median hourly wage for Information Technology occupations was \$49.39 an hour in 2022 – that’s nearly \$25 an hour higher than the median for all occupations in the state, which was \$24.45 an hour.
- About 82% of the computer and mathematical jobs in the state are located in the 7-County Twin Cities metro area, with the other 18% spread across Greater Minnesota. Wages are also higher in the Twin Cities than in Greater Minnesota.
- It takes education and training to prepare for most Information Technology careers. The vast majority of Information Technology occupations require at least some postsecondary education, with most requiring a bachelor’s degree. However, educational requirements vary by the type of position.
- The lowest education requirements are for Web Developers and Computer User Support Specialists, where only about half of openings require postsecondary education. The highest educational requirements are for Computer & Information Systems Managers, Database Architects, Computer Programmers and Software Developers, Computer Network Architects, and Information Security Analysts, where more than 90% of job openings require a bachelor’s degree or higher.<sup>2</sup>
- The median wage offer for Information Technology vacancies was more than \$40 per hour in Minnesota in 2022. About 75% of the Information Technology job vacancies in 2022 required postsecondary education and 97% required at least a year of prior work experience – with wage offers closely tied to experience and training requirements.

### Characteristics of Job Vacancies for Computer & Mathematical Occupations, Minnesota



Source: DEED Job Vacancy Survey



<sup>1</sup>DEED’s [Occupational Employment Statistics](#)

<sup>2</sup>2nd Quarter DEED Job Vacancy Survey



## Even entry-level Information Technology jobs require significant education and training

■ These are the three in-demand Information Technology occupations with the lowest educational requirements – each require an associate degree or less. All three of these entry-level Information Technology occupations rank in the top 100 for jobs in demand in Minnesota now:

SOC Code	SOC Occupational Title	SOC Description	Median Wage	Typical Education Required for Entry in Minnesota
151232	Computer User Support Specialists	Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, via telephone, or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.	\$29.28	Vocational Training
151231	Computer Network Support Specialists	Analyze, test, troubleshoot, and evaluate existing network systems, such as local area networks (LAN), wide area networks (WAN), cloud networks, servers, and other data communications networks. Perform network maintenance to ensure networks operate correctly with minimal interruption.	\$31.79	Associate Degree
151257	Web Developers and Digital Interface Designers	Develop and implement websites, web applications, application databases, and interactive web interfaces. Evaluate code to ensure that it is properly structured, meets industry standards, and is compatible with browsers and devices. Optimize website performance, scalability, and server-side code and processes. May develop website infrastructure and integrate websites with other computer applications.	\$38.12	Associate Degree

## Training to develop needed technical skills

■ The Information Technology field offers opportunities to move up the career ladder to higher responsibility and greater pay through additional education and training. There are a variety of short-term tech training options for people who want to get their foot in the door for a career in Information Technology. Some training providers provide connections with employers, but don't guarantee job placement. Talk to staff at a CareerForce location near you or call 651-259-7500 for information about training providers.

Soft and Transferable Skills	Computer Network Support Specialists	Computer User Support Specialists	Web Developers
<b>Active Learning</b> — Understanding the implications of new information for both current and future problem-solving and decision-making.	X	X	X
<b>Active Listening</b> — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.	X	X	X
<b>Complex Problem Solving</b> — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.	X	X	X
<b>Critical Thinking</b> — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	X	X	X
<b>Instructing</b> — Teaching others how to do something.		X	
<b>Judgment and Decision Making</b> — Considering the relative costs and benefits of potential actions to choose the most appropriate one.	X	X	X
<b>Monitoring</b> — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.	X	X	
<b>Operation Monitoring</b> — Watching gauges, dials, or other indicators to make sure a machine is working properly.	X		
<b>Operations Analysis</b> — Figuring out what a product or service needs to be able to do.			X
<b>Programming</b> — Writing computer programs.			X
<b>Reading Comprehension</b> — Understanding written sentences and paragraphs in work related documents.	X	X	X
<b>Service Orientation</b> — Actively looking for ways to help people.		X	
<b>Speaking</b> — Talking to others to convey information effectively.	X	X	
<b>Systems Analysis</b> — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.	X	X	
<b>Systems Evaluation</b> — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.	X		
<b>Time Management</b> — Managing one's own time and the time of others.	X	X	
<b>Troubleshooting</b> — Determining causes of operating errors and deciding what to do about it.	X		
<b>Writing</b> — Communicating effectively in writing as appropriate for the needs of the audience.	X	X	

## CareerForce can help you explore a career in Information Technology

Contact CareerForce for help with Information Technology career exploration, training options, job search and other employment assistance.

■ [CareerForceMN.com/locations](https://www.careerforcemn.com/locations)

■ 651-259-7500