

Geographic Information Systems

About my job:

As a geographic information systems (GIS) technician, I assist scientists, technologists and related professionals in building, maintaining, modifying and using GIS databases. I also perform some custom application development and provide user support.



What I do every day:

- Design and develop graphic representations of GIS data, using GIS applications
- Analyze GIS data and identify spatial relationships and results of analyses, using maps, graphs or tabular data
- Maintain or modify existing GIS databases
- Enter data into GIS databases, using techniques such as coordinate geometry, keyboard entry of tabular data, manual digitizing data to vectors or conversion of other sources
- Review existing and incoming data for currency, accuracy, usefulness and completeness of documentation
- Perform geospatial data building, modeling and analysis, using advanced spatial analysis, data manipulation and cartography software
- Design and coordinate the development of integrated GIS spatial or non-spatial databases
- Select cartographic elements needed for effective presentation of information
- Provide technical support to users or clients regarding the operation of GIS databases, equipment and applications

What makes my job great?

Job growth:

Employment of GIS technicians is projected to grow 14 percent from 2012 to 2022, which is faster than the average for all occupations.

Short-term training:

Entry level positions in this field require a 2-year associate degree.

Good pay:

The median salary for GIS technicians is \$40,000. (That means that 50 percent of GIS technicians earn less and the other 50 percent earn more).

Benefits:

Most GIS technicians work full time, with benefits that may include:

- Health care
- Dental
- Paid vacation

How can you become an GIS technician?



Academic/training credentials:

Many entry-level positions in this field require an associate degree; some may require a bachelor's degree.

GIS certification is available for individuals pursuing this field. While this certification is not required for employment, it is preferred by many employers. In order to obtain this certification, an employee must work full time for three years in the field, as well as complete continuing education hours and other professional development opportunities and projects.

GIS technician, specialist or analyst:

Associate degree in geospatial technology

GIS coordinator:

Bachelor's degree in geography, environmental science, computer science or engineering

Geographic information officer, GIS manager, GIS scientist:

Master's degree

Skills and requirements:

- Strong computer skills
- Excellent problem-solving and creative thinking skills
- Strong verbal and written communication skills
- Excellent decision-making skills
- Well-developed interpersonal and communication skills
- Skilled at processing information

Where you can find jobs:

- Online job boards
- Temp services
- Local career fairs
- Networking
- Department of Career Services at colleges

Potential job titles:

- Geographic information systems assistant
- Geographic information systems analyst
- Geographic information systems specialist
- Cartographer
- Geographic information systems coordinator
- Technical support specialist

Potential local employers:

- Government agencies like counties, cities or park districts
- Utilities such as GCRTA and NEORS
- Kucera International
- CT Consultants
- Nonprofits such as Western Reserve Land Conservancy and Cuyahoga River Community Planning



Local educational opportunities

Two-year institutions:

- Lakeland Community College: Associate of Applied Science in Geospatial Technology

Four-year institutions:

- Kent State University: Bachelor of Arts with a GIS concentration
- University of Akron: master's degree in geography-geographic information sciences
- Cleveland State University: undergraduate certificate in urban geographic information systems, graduate certificate in geographic information system



Work experience/internship:

Many companies/organizations are looking for interns. To find out more about local opportunities, contact Lakeland Career Services at 440.525.7222.



Coursework per educational entity:

Secondary pathway:

Geospatial Technology

Postsecondary program:

Geospatial Technology

An Example of Course with Secondary and Postsecondary Credits

| | | | | | | | | | |
|---|------------------------|---------------------------|--|-----------------------------------|------------------------------------|----------------------------------|------------------------------------|--------------------|--|
| Secondary | 7 8 | English I | Algebra I | Physical Science | Social Studies | Fine Arts | Information Technology | | |
| | 9 10 | English II | Geometry | Biology | World History | Health (.5) PE (.5) | Programming | World Languages | |
| | 11 | English III | Algebra II | Chemistry | U.S. History | World Languages | Object Oriented Programming | Visual Programming | |
| | 12 | English IV | Trigonometry/ Calculus | Physics | U.S. Government | Systems Analysis & Design | Database Applications Development | | |
| Postsecondary | Year 1 1st Semester | English Composition I | First Year Experience | Introduction to Geography | Physical & Environmental Geography | Geographic Information Science I | Computers & Information Processing | | |
| | Year 1 2nd Semester | English Composition II | World Regional Geography | Geographic Information Science II | Programming Logic | Statistics | | | |
| | Year 2 1st Semester | Effective Public Speaking | Spatial Data Acquisition & Management | Spatial Analysis & Modeling | U.S. National Government | Technical Elective | | | |
| | Year 2 2nd Semester | Remote Sensing | Project Mgmt. in Geospatial Technology | Geospatial Technology Internship | Arts & Humanities Elective | Technical Elective | | | |
| High School Career-Technical Education Program Courses | | | | | | | | | |
| High School Courses for Postsecondary Credit (Including Apprenticeship Hours) and the Corresponding Postsecondary Courses | | | | | | | | | |
| Required Courses | | | | | | | | | |
| Recommended Electives | | | | | | | | | |

How can I grow my career?



Academic/ Training Credentials:

An associate of applied science degree is required; a bachelor's degree can promote advancement in this career.

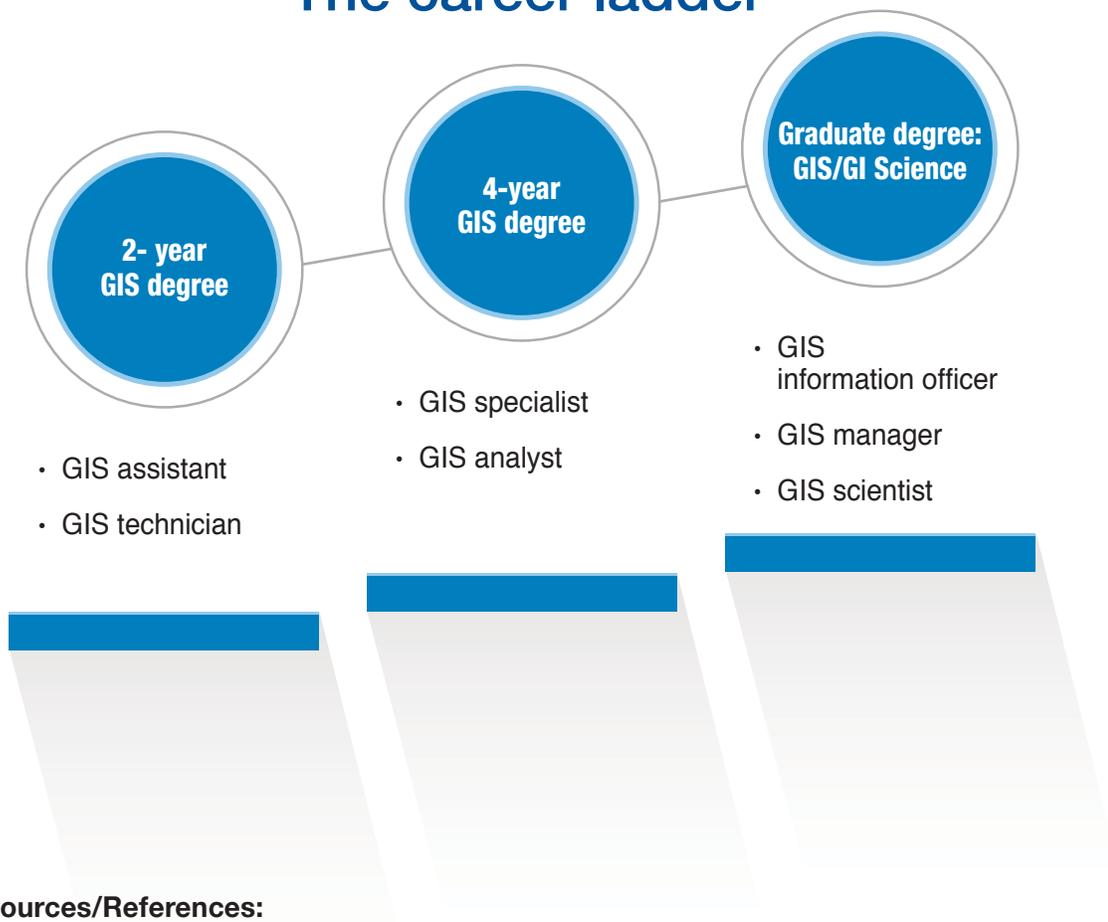
Work Experience:

Most employers require work experience in GIS. Internship opportunities are very important, because they provide students with relevant experience.

Where could I focus or specialize in my career?

- GIS technician, specialist or analyst
- GIS coordinator
- Geographic information officer
- GIS manager
- GIS scientist

The career ladder



Sources/References:

Ohio Means Jobs, Bureau of Labor Statistics – Occupational Outlook Handbook

O*Net Online-Summary Report, Ohio Labor Market and Finance 2013 Information