

Iowa Department of Administrative Services – Human Resources Enterprise
Job Classification Description

Telecommunications Engineer

Definition

This job classification is used only by the Iowa Communications Network.

Performs technical engineering work in the design, development, provisioning, implementation, monitoring, and maintenance of telecommunications systems and networks, including broadband and fiber-optic services, to ensure reliable voice, video, and data transmission; troubleshoots and resolves problems; consults with stakeholders on system requirements and upgrades; performs related work as required.

The work examples and competencies listed below are for illustrative purposes only and not intended to be the primary basis for position classification decisions.

Work Examples

Designs and configures wired, wireless, and satellite communication systems for voice, video, and data services.

Implements system renovation projects in collaboration with technical staff, consultants, and vendors.

Installs or coordinates the installation of new or modified hardware, software, or programming modules for telecommunications systems.

Monitors and analyzes network performance to identify and resolve issues.

Conducts regular tests and inspections of products, services, or processes to evaluate quality and performance.

Provides user support by diagnosing network and device problems and implementing technical solutions.

Consults with users, administrators, and engineers to identify business and technical requirements for system modifications or technology purchases.

Documents technical specifications, operating standards, and procedures for hardware and software installation.

Stays informed of industry trends and emerging technologies, such as 5G, SD-WAN, and IoT.

Competencies Required

Knowledge:

- Telecommunications – Transmission, broadcasting, switching, control, and operation of telecommunications systems.
- Customer and Personal Service – Principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

- English Language – The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Engineering and Technology – The practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Computers and Electronics – Circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Abilities:

- Written Expression – Communicate information and ideas in writing so others will understand.
- Written Comprehension – Read and understand information and ideas presented in writing.
- Oral Expression – Communicate information and ideas in speaking so others will understand.
- Oral Comprehension – Listen to and understand information and ideas presented through spoken words and sentences.
- Deductive Reasoning – Apply general rules to specific problems to produce answers that make sense.
- Inductive Reasoning – Combine pieces of information to form general rules or conclusions.
- Information Ordering – Arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- Problem Sensitivity – Tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Skills:

- Active Listening – 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.
- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Reading Comprehension – Understanding written sentences and paragraphs in work related documents.
- Speaking – Talking to others to convey information effectively.
- Writing – Communicating effectively in writing as appropriate for the needs of the audience.
- Negotiation – Bringing others together and trying to reconcile differences.
- Active Learning – Understanding the implications of new information for both current and future problem-solving and decision-making.
- Judgment and Decision Making – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Service Orientation – Actively looking for ways to help people.
- Complex Problem Solving – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

- Quality Control Analysis – Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- Systems Evaluation – Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
- Systems Analysis – Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- Operations Monitoring – Watching gauges, dials, or other indicators to make sure a machine is working properly.

Minimum Qualification Requirements

Applicants must meet at least one of the following minimum requirements to qualify for positions in this job classification:

- 1) Five years of full-time work experience in telecommunications or outside plant construction and planning as a technical or associate engineer.
- 2) A total of five years of education and/or full-time experience (as described in number one), where thirty semester hours of accredited college or university coursework in major coursework in engineering, telecommunications technology or related area equals one year of full-time experience.
- 3) Graduation from an accredited four-year college or university with a degree in telecommunications, engineering, or a closely related field, and experience equal to one year of full-time work as described in number one.
- 4) Current, continuous experience in the state executive branch that includes one year of full-time work as a Technical Service Specialist.

Effective date: 12/25 KC