

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

Geologist 3

Definition

Under general supervision, performs advanced geology research work or performs advanced level professional consultative geology work in one or more of the following areas: stratigraphy, economic geology, hydrogeology, quaternary geology, remote sensing, geographic information systems, soils geology, and/or highway construction; 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

Directs and conducts a variety of research projects to gather geological information to be used for reports, maps, charts, recommendations, etc.

Prepares technical reports to document findings from research or projects and/or to recommend changes or new methods; presents recommendations, conclusions, or desired results in a clear and concise way.

Uses/maintains a variety of laboratory and field equipment to study the natural features of Iowa, research the geological history of Iowa, and determine potential water and/or mineral resources.

Conducts or directs a variety of field and laboratory tests and surveys on a specific aspect of geology or a geological problem.

Provides agency staff and other public and private organizations and groups with information to acquaint them with the terms and techniques used in geological research and exploration and to instruct them in the use of a wide variety of geological tools and equipment; conducts seminars and workshops; provides individual instruction either in the agency or in the field.

Proofreads geologic manuscripts prepared by staff geologists to assure completeness, accuracy, and clarity.

Serves on one or more of a variety of geological boards, task forces, or committees to make recommendations on desirable or necessary action in regard to the natural resources of Iowa.

Competencies Required

Knowledge:

- Law and Government – Laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- English Language – The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Computers and Electronics – Circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

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- Engineering and Technology – 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.
 - Mathematics – Arithmetic, algebra, geometry, calculus, statistics, and their applications.
 - Geography – Principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.
 - Physics – Prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.
 - Chemistry – Chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Abilities:

- Law and Government – Understand and adhere to applicable laws, legal codes, administrative rules, and regulations.
- Written Expression – Communicate information and ideas in writing so others will understand.
- Written Comprehension – Read and understand information and ideas presented in writing.
- Speech Clarity – Speak clearly so others can understand.
- Speech Recognition – Identify and understand the speech of another person.
- Category Flexibility – Generate or use different sets of rules for combining or grouping things in different ways.
- Flexibility of Closure – Identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.
- 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.
- Monitoring – Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- Science – Using scientific rules and methods to solve problems.
- Time Management – Managing one's own time and the time of others.
- 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.

Minimum Qualification Requirements

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

- 1) Graduation from an accredited four-year college or university with a degree in geology, physical geography, or a closely related geological science, and experience equal to three years of full-time work in geology.
- 2) Graduation from an accredited four-year college or university with a degree in a natural science, computer science, math, or engineering field, and experience equal to four years of full-time work in ground water, soils, environmental geology, geographic information systems, or other related earth science specialty.
- 3) All of the following (a, b, and c):
 - a. One year of full-time work experience in geology; and
 - b. A total of four years of education and/or full-time experience (as described in part a), where thirty semester hours of accredited college or university coursework in geology, physical geography, or a closely related geological science equals one year of full-time experience; and
 - c. A total of two years of graduate-level education and/or full-time experience (as described in part a), where twenty-four semester hours of accredited graduate college or university coursework in geology, physical geography, or a closely related geological science equals one year of full-time experience.
- 4) Current, continuous experience in the state executive branch that includes eighteen months of full-time work as a Geologist 2.

Effective date: 08/23 KC