



STATE OF COLORADO

CLASS SERIES DESCRIPTION

July 1, 1999

ENGINEERING/PHYSICAL SCIENCE ASSISTANT

D9B1IX TO D9B3XX

DESCRIPTION OF OCCUPATIONAL WORK

This class series uses three levels in the Labor, Trades, and Crafts Occupational Group and describes work in assisting engineers, scientists, or technicians with work related to those fields. Work in this class series entails duties which are of a more physical, manual nature. The work involves performing prescribed tests or inspections for compliance with orders, procedures, or other directives. The work includes collecting data; recording measurements, readings, or quantities; preparing calculations from prescribed methods and practices; accumulating information for reports or summaries; monitoring instruments or activities for conformance with rules, regulations, or specifications; distributing supplies or equipment; and, operating instruments, equipment, controls, valves, gates, or similar measuring or control devices. The work may include preparing drawings and estimating material quantities using standard drafting techniques of computer aided design (CAD) systems. The work may also include conducting standard inspections or test procedures or steps to verify compliance with rules, regulations, or contract specifications.

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ENGINEERING/PHYSICAL SCIENCE ASSISTANT I

D9B1IX

CONCEPT OF CLASS

This class describes the entry level. Work is designed to train positions for a higher level in the class series. Although tasks are similar to those of the clearly defined level, assignments are structured and performed with direction and assistance from others. Positions carry out established work processes and operations by learning to apply and follow procedures, techniques, rules, and regulations. Once training has been completed, the position is to be moved to the next level. Positions should not remain in this class indefinitely.

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ENGINEERING/PHYSICAL SCIENCE ASSISTANT II **D9B2TX**

CONCEPT OF CLASS

This class describes the clearly defined level. Positions in this level operate equipment and devices to record or measure readings or quantities and prepare records of such. The work may involve making prescribed calculations to determine follow-on actions based on set standards or requirements. Positions are expected to select from clearly defined alternatives and follow procedures outlined in manuals, guides, specifications, or instructions. This class differs from the Engineering/Physical Science Assistant I on all factors.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the defined level, as described here. Within limits prescribed by the operation, choices involve selecting alternatives that affect the manner and speed with which tasks are carried out. These choices do not affect the standards or results of the operation itself because there is typically only one correct way to carry out the operation. These alternatives include independent choice of such things as priority and personal preference for organizing and processing the work, proper tools or equipment, speed, and appropriate steps in the operation to apply. For example, positions choose the proper equipment to perform a task or decide their own priority for accomplishing assigned tests or inspections according to established procedures. By nature, the data needed to make decisions can be numerous but are clear and understandable so logic is needed to apply the prescribed alternative. Positions can be taught what to do to carry out assignments and any deviation in the manner in which the work is performed does not change the end result of the operation. For example, positions determine if measurements are within tolerances stated in the guides.

Complexity -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions study recordings, measurements, or readings to determine what it means and how it fits together in order to get practical solutions in the form of reports or adjustments to gates, valves, or controls. Guidelines in the form of specifications, procedures, limits, or charts exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation. For example, positions choose the appropriate settings for equipment or test operations based on readings or measurements.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of any of the following:

Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints. For example, positions collect information for test records on measurements obtained by others.

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Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe reporting of abnormal measurements to determine the cause of readings or recordings that are outside normal operating limits.

Securing regulatory compliance by issuing or revoking licenses and persuading or training others to correct problems. Regardless of the methods used to attempt to obtain compliance, the position can ultimately rely on legal authority to impose sanctions and penalties. For example, positions inspect facility operations to insure compliance with occupational and safety regulations or practices and train operators in correct procedures.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team.

ENGINEERING/PHYSICAL SCIENCE ASSISTANT III D9B3XX

CONCEPT OF CLASS

This class describes the fully-operational level. Positions in this level perform work with decision making limited to how and what operations will be completed based on a range of alternatives. This class differs from the Engineering/Physical Science Assistant II on Decision Making.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. Choices are within a range of specified, acceptable standards, alternatives, and technical practices. For example, positions choose which tests will be conducted and how the required quantity will be reached.

Complexity -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions study recordings, measurements, or readings to determine what it means and how it fits together in order to get practical solutions in the form of reports or adjustments to gates, valves, or controls. Guidelines in the form of specifications, procedures, limits, or charts exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation. For example, positions use judgment to select the appropriate

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drafting procedures to use or select the most appropriate means of estimating quantities needed for materials listings.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of any of the following:

Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints. For example, positions collect information for test records on measurements obtained by others.

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe reporting of abnormal measurements to determine the cause of readings or recordings that are outside normal operating limits.

Securing regulatory compliance by issuing or revoking licenses and persuading or training others to correct problems. Regardless of the methods used to attempt to obtain compliance, the position can ultimately rely on legal authority to impose sanctions and penalties. For example, positions inspect contractor's operations to insure compliance with the requirements and can issue contract violations as penalties.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

ENTRANCE REQUIREMENTS

Minimum entry requirements and general competencies for classes in this series are contained in the State of Colorado Department of Personnel web site.

For purposes of the Americans with Disabilities Act, the essential functions of specific positions are identified in the position description questionnaires and job analyses.

CLASS SERIES HISTORY

Effective 7/1/99 (DLF). LTC consolidation study changed class title and codes. Draft published 3/31/99 and proposed 5/24/99.

Effective 9/1/93 (DLF). Job Evaluation System Revision project. Published as proposed 6/1/93.

Revised 1/15/91. Changed class codes, titles, nature of work and entrance requirements; added options Engineering/Physical Sciences Technical Assistant (A3037-39).

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Revised 12/1/86. Changed nature of work, entrance requirements, and examples of work, Drill Operator (A4564).

Revised 11/1/79. Changed entrance requirements, Engineering/Physical Sciences Aide (A3037-39).

Revised 8/1/77. Changed overtime status, Water Commissioners (A6401-04).

Created 1/1/75. Engineering/Physical Sciences Aide (A3037-39), Water Commissioners (A6401-04), Drill Operator (A4564).

SUMMARY OF FACTOR RATINGS

Class Level	Decision Making	Complexity	Purpose of Contact	Line/Staff Authority
Engineering/Physical Science Assistant I	na	na	na	na
Engineering/Physical Science Assistant II	Defined	Patterned	Exchange, Detect, or Secure	Indiv. Contributor
Engineering/Physical Science Assistant III	Operational	Patterned	Exchange, Detect, or Secure	Indiv. Contributor