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Class Specifications  
for the Class:

ENGINEERING LABORATORY TECHNICIAN

Duties Summary:

Assists in the mechanical or civil engineering laboratory instructional and research programs by setting up laboratory testing apparatus for experimental purposes; assists instructors in the engineering laboratories by operating a variety of mechanical, electrical and/or hydraulic equipment, instruments, pumps and other auxiliaries for laboratory and lecture demonstrations and experiments; constructs, modifies and/or pretests research and experimental devices or instructional aids; services, makes adjustments and repairs laboratory and shop equipment; and performs other duties as required.

Distinguishing Characteristics:

This class differs from the class Electrical Laboratory Technician in that the Engineering Laboratory Technician operates, maintains and repairs a variety of mechanical, electrical and/or hydraulic equipment, machine tools, and laboratory testing apparatus in the mechanical or civil engineering laboratory including constructing, modifying, setting up and pretesting research and experimental devices; whereas the Electrical Laboratory Technician repairs, calibrates and modifies a variety of electrical and electronic equipment and constructs electrical and electronic circuits and equipment such as amplifier chassis mockups, artificial transmission lines and control circuits which are used to demonstrate electrical and electronic principles in an electrical engineering laboratory.

This class differs from classes in the Maintenance Mechanic series in that the Engineering Laboratory Technician assists instructors with their laboratory instructional and research programs by operating, maintaining and repairing a variety of mechanical, electrical and/or hydraulic equipment, and constructs, modifies, pretests and sets up testing apparatus and research models in the engineering laboratories; whereas classes in the Maintenance Mechanic series performs skilled mechanical work in the adjustment, maintenance and repair of a wide variety of mechanical and electrical equipment.

This class differs from that of a Machinist in that the Engineering Laboratory Technician assists instructors with their instructional program by operating, maintaining and repairing mechanical, electrical and/or hydraulic equipment, and laboratory

testing apparatus in the engineering laboratories, and occasionally constructs, modifies and fabricates machine parts and experimental devices using lathes, shapers and other machine tools; whereas the Machinist fabricates machine parts and tools as a major work assignment.

Examples of Duties:

Sets up testing apparatus for laboratory instructions and experiments in the mechanical engineering laboratory; operates a high pressure steam boiler and gas turbines; starts and operates diesel and gasoline powered generators; checks pressure, vacuum and other gauges; checks bearing temperatures and lubrication; inspects equipment operation for any irregularities and makes adjustments or repairs necessary to insure efficient performance; operates auxiliary power equipment; checks pumps and valves, replaces and grinds valves on boilers, pipelines, engines and pumps; operates lathes, drill presses and other tools in making repairs and adjustments to engines, auxiliaries and other equipment; occasionally performs oxyacetylene and electric welding; threads and fits pipes; paints plant and equipment; maintains and repairs testing equipment in the mechanical engineering laboratory; fabricates parts; performs bench machine and hand tool work in shaping, fitting, finishing and assembling of parts in the process of constructing, modifying or mounting laboratory equipment and research models for use in the mechanical engineering laboratory; maintains and repairs hand and powered machine tools such as bench lathes, power hacksaws, milling machines and drill presses, and periodically checks testing equipment in the mechanical engineering laboratory; maintains files of equipment, instruments, catalogs and standards available for laboratory use.

Sets up test equipment, assembles tools and other instructional aids for laboratory classes, demonstrations and experiments in the civil engineering laboratory; operates laboratory testing equipment such as hydraulic testing machines, strain indicators, soil testing machine and oscilloscopes in instructional demonstrations and experiments; instructs students in the operation of equipment; inspects equipment operation for any irregularities and makes necessary adjustment or repairs to insure efficient performance; checks pumps, valves and gauges; services, maintains and repairs testing apparatus; constructs research models, instructional aids and experimental devices from general descriptions of instructional personnel; modifies and/or mounts equipment purchased for instructional use; fabricates wood and metal parts by use of carpenter, welding, and machine shop tools and equipment for use in the civil engineering laboratory; operates and maintains hand and powered machine tools such as lathes, power hacksaws, milling machines and drill presses; occasionally performs oxyacetylene and electric welding;

periodically cleans, oils and makes necessary adjustments or repairs to civil engineering laboratory equipment; maintains files of equipment, instruments, catalogs and standards available for laboratory use.

Minimum Qualification Requirements:

Experience and Training: (1) Six years of work experience involving the operation, maintenance and/or repair of a variety of mechanical, electrical and hydraulic equipment, of which one year shall have involved machinist work experience (Civil Engineering Laboratory), or of which one year shall have involved machinist work experience and one year of which shall have involved the operation and maintenance of high pressure steam boilers (Mechanical Engineering Laboratory), and graduation from high school; or (2) any equivalent combination of experience and training.

Knowledge of: The methods, practices, tools, equipment and materials used in the engineering laboratories; methods and practices used in the repair and maintenance of laboratory equipment and other auxiliaries; mechanical trade and skill as a general mechanic; operation and servicing requirements of reciprocating and rotating equipment and machinery; industrial safety precautions; arithmetic and basic physics; basic instrumentation and laboratory practices; and -  
(Mechanical Engineering Laboratory)

Operation and maintenance of high-pressure boilers, steam turbines, and internal combustion engines.

Ability to: Operate lathes, drill presses and other machine shop tools; oil and service large mechanical, electrical or hydraulic machinery; use common hand tools with reasonable degree of skill; do mechanical work; communicate, understand and effectively carry out oral, written and graphic instructions; understand and explain basic underlying principles of equipment and instruments.

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This is a specification for the class Engineering Laboratory Technician which replaces the class Stationary Engineer.

APPROVED: February 20, 1963

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