



**APPROVED BY: THE CHIEF
ADMINISTRATIVE OFFICER**

EFFECTIVE: March 2005

ENGINEERING TECHNICIAN I/II/III

Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.

DEFINITION

To perform a variety of technical duties in preparing, presenting, creating, amending, and updating engineering drafting and technical drawings, maps, visual aids, and presentation materials; to utilize a variety of technical engineering computer software and hardware applications including CADD (Computer Aided Drafting and Design) and GIS (Geographic Information System) programs; to compile and analyze data for presentations and reports; and to perform a variety of duties related to assigned areas of responsibility.

DISTINGUISHING CHARACTERISTICS

Engineering Technician I

This is the entry level, training class in the Engineering Technician series. Since this class is typically used as a training class, employees may have only limited or no directly related work experience. Advancement to the "II" level is based on demonstrated proficiency in performing the assigned functions, and is at the discretion of higher level supervisory or management staff.

Engineering Technician II

This is the experienced class within the Engineering Technician series. This class recognizes positions that require limited time on the job before an incumbent is capable of functioning at the full journey level. Positions at this level are initially expected to

perform under immediate supervision, progressing to general supervision as knowledge of operating procedures is gained. Positions in this class are flexibly staffed and are normally filled by advancement from the “I” level, or when filled by the outside, have prior experience. Advancement to the “III” classification is dependent on organizational need for advanced level skills, as determined by higher level supervisory and management staff, and by demonstrating proficiency through passing a District test designed to measure advanced level skills specific to assigned area.

Engineering Technician III

This the full journey level class within the Engineering Technician series. Employees at this level are distinguished from other levels within this classification by the performance of the full range of duties as assigned. Employees at this level receive only occasional instruction or assistance as new or unusual situations arise, and are fully aware of the operating procedures and policies of the work unit. Employees at this level are required to be fully trained in all procedures related to assigned area of responsibility. Advancement to this level is dependent on organizational need for advanced level skill, as determined by higher level supervisory and management staff, and by demonstrating proficiency through passing a District test designed to measure advanced level skills specific to assigned area. This class is distinguished from Senior Engineering Technician in that the latter is the advanced journey level and possesses a specialized technical or functional expertise within the area of assignment.

SUPERVISION RECEIVED AND EXERCISED

Engineering Technician I

Receives immediate supervision from assigned supervisory or management personnel.

Engineering Technician II

Receives general supervision from assigned supervisory or management personnel.

Engineering Technician III

Receives direction from assigned supervisory or management personnel.

ESSENTIAL FUNCTION STATEMENTS

Essential responsibilities and duties may include, but are not limited to, the following:

1. Perform a variety of technical duties in preparing, presenting, creating, and updating engineering drafting and technical drawings, maps, graphics, visual aids, and presentation materials.
2. Prepare and review technical maps, drawings, visual aids, graphic presentations, drafting materials, and other items as needed for various District projects using computers and manual methods; amend or revise drawings during design and construction phases; prepare as-built drawings.
3. Research, collect, and analyze project data including engineering and surveyor notes, assessor book and aerial photographs; format data in presentation materials, and graphic displays.
4. Conduct field investigations to obtain and verify engineering data; make measurements and rough sketches; locate public utility lines from surveyors' field notes; prepare limited design drafting.
5. Utilize a variety of technical engineering software applications to produce maps, drawings, and other technical documents including CADD and GIS programs; provide assistance to staff using engineering or graphic design hardware and software applications; create new software applications on an as-needed basis in the completion of assigned job tasks; create image files by scanning documents; remain current on new hardware and software developments.
6. Perform a variety of complex engineering calculations related to areas, quantities, and costs; verify submitted calculations by other District staff.
7. As assigned, provide support to District space planning projects; create database to plot employee locations and space occupancy; monitor and track proposed space allocations; generate architectural modifications to accommodate planned allocations; ensure compliance with mandated building and design codes.
8. As assigned, perform inventory control for District building assets; data read and connect bar code inventory to data base to provide graphic information on the location and condition of fixed assets; create furniture inventory, generate reports.
9. As assigned, determine parameters of project; plan and produce graphics and related artwork; transform data into camera-ready form; coordinate printing.
10. Utilize a variety of graphics hardware and software applications to design and develop presentation materials; provide technical support to users utilizing systems.

11. Produce and maintain standard drafting manuals for the District as assigned; oversee the District's collection of drafting and other technical materials; catalog all materials obtained.
12. Examine contractual documents to ensure accuracy and conformity with relation to assigned area of responsibility as assigned; recommend alterations as needed.
13. Interpret legal documents related to District activities; interpret property descriptions and maps.
14. Receive, review, and process land use permits; coordinate engineering review process; research maps and right of way records; respond to inquiries on flood hazard issues; communicate District policies on permit requirements; ensure process permits comply with District ordinances, policies, and regulations.
15. As assigned, provide technical support in land use issues; serve as liaison with public agencies, developers, consultants, and land owners in receiving and processing land issues in relation to District facilities.
16. Maintain various files and records; prepare a variety of correspondence and documents as needed.
17. Perform related duties and responsibilities as assigned.

QUALIFICATIONS

Engineering Technician I

Knowledge of:

Basic principles and practices of manual and computer-aided drafting and design.
Operational characteristics of equipment and materials in assigned program area.
Proper English usage, grammar, spelling, and punctuation.

Algebra, geometry, and trigonometry associated with drafting and other technical tasks.

Principles and practices of filing and record keeping.

Pertinent federal, state, and local laws, codes, and ordinances.

Ability to:

Utilize tools and materials in assigned program area.

Perform mathematical calculations.

Maintain and update various electronic and paper files.
Understand and follow oral and written instructions.
Communicate clearly and concisely, both orally and in writing.
Establish and maintain effective working relationships with those contacted in the course of work.

Experience and Training Guidelines

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

No experience is required.

Training

Equivalent to completion of the twelfth grade supplemented by college level course work in engineering, geography, mathematics, or a related field.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determination made on a case-by-case basis at the time of job posting.

Engineering Technician II

In addition to the qualifications for Engineering Technician I:

Knowledge of:

Methods and techniques of manual and computer aided drafting and design.
Basic principles and practices of surveying.
Basic methods and techniques of map making.
Principles and practices of property research, including boundary determination and land title examination.
Operational characteristics of hardware and software applications in assigned area including technical engineering, graphics presentation, and GIS programs.
Principles of research and report preparation.

Basic methods and techniques of designing and creating visual graphics and displays.

Basic civil engineering practices and terminology in assigned program area.

Basic methods and techniques of evaluating space allocation requirements.

Basic principles of Geographic Information Systems (GIS).

Operations, services, and activities of a public water agency.

Ability to:

Perform property research activities, including boundary determination and land title examination.

Prepare engineering maps, drawings, diagrams, and other technical documents and materials.

Learn to prepare a variety of visual graphics and display materials.

Perform field investigations take notes, and make calculations.

Learn to use software programs to produce finished presentation and graphic materials.

Learn to analyze drafting and design issues.

Learn to analyze computer hardware and software problems in assigned area.

Prepare GIS maps.

Experience and Training Guidelines

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

One year experience equivalent to the Engineering Technician I level.

Training

Equivalent to completion of the twelfth grade supplemented by college level course work in engineering, geography, mathematics, or a related field.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

Engineering Technician III

In addition to the qualifications for Engineering Technician II:

Knowledge of:

Methods and techniques of designing and creating a variety of visual graphics and displays.

Principles, practices, methods, and techniques of producing a variety of reports and presentations.

Operational characteristics of database applications in assigned program area.

Methods and techniques of analyzing space allocation requirements.

Methods and techniques of creating space allocation and inventory computer databases.

Basic principles and practices of corrosion and water treatment processes as assigned.

Methods and techniques of 3-D drafting and/or modeling.

Ability to:

Prepare a variety of engineering maps, drawings, diagrams, and other technical documents and materials including architectural drawings to accommodate space planning allocations.

Prepare a variety of graphic presentation and display materials.

Utilize software programs to produce finished presentation and graphic materials.

Analyze drafting and design issues and make recommendations on problem resolution.

Analyze computer hardware and software issues and make recommendations on problem resolution.

Perform computer based inventory control duties for District furniture and fixed assets.

Create 3-D drawings and/or models.

Analyze engineering design calculations and criteria for accuracy.

Experience and Training Guidelines

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

Two years of increasingly responsible technical engineering support experience equivalent to the Engineering Technician II classification.

Training

Equivalent to completion of the twelfth grade supplemented by college level course work in engineering, geography, mathematics or a related field.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

WORKING CONDITIONS

Environmental Conditions

Office environment; exposure to computer screens; work closely with others; some assignments may require field visits, travel from site to site, exposure to inclement weather and other outdoor hazards.

Physical Conditions

Essential and other important functions may require maintaining physical condition necessary for sitting, walking, and standing for extended periods of time; possible light to moderate lifting and carrying; some assignments may require kneeling, crawling, and working in confined spaces.