Engineer

University of California, Los Angeles
March, 1973

Class Specifications - E.20
Principal Engineer - 7151
Senior Engineer - 7152
Associate Engineer - 7153
Assistant Engineer - 7154
Junior Engineer - 7155

SERIES CONCEPT

Engineers conduct and coordinate the planning, design, construction and alteration of electrical, mechanical, gaseous and liquid systems in buildings, facilities, and other structures; and perform other related duties as required.

Incumbents typically are assigned responsibility for coordination of the engineering aspects of construction projects involving large permanent buildings and facilities, for both new construction and major alterations; provide professional engineering information and advice to committees of current or prospective occupants who recommend or determine building needs and priorities; act as engineering liaison officers and coordinators in relationships between Executive Architects, Executive Engineers, and staff members; review and recommend action on engineering design development documents and construction documents to insure compliance with the specified programs and policies of the University; coordinate the services of commissioned engineers, contractors, and inspectors in the solution of problems arising during construction; participate in on-site inspections before final acceptance of the University of the project under Construction; design or supervise the design of electrical, mechanical, utility, drainage, and road systems; serve as technical specialists and advisors on design, construction, operation, and maintenance of electrical, mechanical, and utility systems; and assemble and evaluate information and prepare reports with respect to new and revised concepts of engineering design and construction, for possible University application.

The general engineering series includes civil, electrical, and mechanical engineering specialties. The series includes positions involved in physical planning and construction, both at the campus level and University-wide level. Emphasis of the series is on design, construction, operation, and maintenance of physical plant facilities for general purposes.

CLASS CONCEPTS

Principal Engineer

Under general direction, incumbents assist a campus or University-wide administrator in plannings organizing, and supervising the work of professional engineering and administrative staffs engaged in physical planning and construction; represent the officer to whom they are responsible at meetings and
conferences involving campus, University, state and federal levels of authority in matters related to engineering design considerations and financial requirements dependent on engineering design considerations; and carry major responsibility for University programs in relationships with Executive Architects, Executive Engineers, contractors, and University committees and staff members, as a principal assistant to the administrative officer in charge.

**Examples of assignments allocated to this level of difficulty and responsibility are:**

Supervisor of the engineering section of the campus physical planning and construction staff, with responsibility for all engineering specialties (civil; electrical; and mechanical).

Supervisor of the engineering section and the construction management section of the campus physical planning and construction staff, with responsibility for all engineering specialties and for all construction inspection and acceptance of contractors' work.

Principal assistant to the University Engineer in the engineering responsibilities assigned to this officer, reviewing campus building programs, projects, and presentations; for engineering design aspects and fiscal considerations, and representing University and campus needs at state and federal levels of review and authorization.

**Senior Engineer**

Under direction, incumbents assist a campus or University-wide administrator in planning, organizing, supervising, and/or performing the work of a professional engineering staff engaged in a specialized engineering phase of physical planning and construction; represent the officer to whom they are responsible at meetings and conferences involving campus, University, state, and federal levels of authority in matters related to engineering design considerations and financial requirements dependent on engineering design considerations; and carry major responsibility for University construction programs in relationships with Executive Architects, Executive Engineers, contractors, and University committees and staff members, as a senior assistant to the Principal Engineer or administrative officer in charge.

**Examples of assignments allocated to this level of difficulty and responsibility are:**

Supervisor of one of the engineering specialty functions (civil, electrical, or mechanical) of the engineering section of the campus physical planning and construction staff.

Supervisor of one of the engineering specialty functions (civil, electrical, or mechanical) and of the construction management section of the campus physical planning and construction staff.

Senior assistant to the University Engineer in the engineering responsibilities assigned to this officer, reviewing campus building programs, projects, and presentations, and providing staff advice to this officer and/or incumbents principal assistants.

Specialist, advisor; and consultant on engineering design problems in a specialty function (civil, electrical, or mechanical) to campus and/or University-wide administrative officers and committees, with responsibility for assembling and evaluating information and preparing reports with respect to new and revised concepts of engineering design and construction, for possible University application.

Senior level assignments typically carry responsibility for the supervision of Associates Assistant, and/or Junior Engineers. Non-supervisory assignments at the senior level are reserved for specialists, who are
widely recognized and consulted by University staff members for their expert knowledge of an engineering specialty field.

**Associate Engineer**

Under direction, incumbents perform all or many of the duties indicated for the series under the Series Concept. This is the full professional level at which incumbents are expected to operate rather independently in a specialized engineering phase of major construction projects. Supervision over such positions is usually exercised by a Senior or Principal Engineer.

**Examples of assignments allocated to this level of difficulty and responsibility are:**

Project engineer (civil, electrical or mechanical) for a major construction project, either new construction or major alterations, with responsibility for engineering liaison and coordination through all or most segments of the project, from inception to completion.

Design engineer (civil, electrical, or mechanical) for projects of limited scope undertaken by University staff, such as small buildings and structures, minor alterations to large buildings, and utility, drainage, and road systems.

Physical plant engineer at either the campus or University-wide level; concentrating in same particular aspect of the physical planning and construction program or the physical plant operation and maintenance program, where the level of difficulty and volume of work require professional engineering skills and knowledges, such as continuing analysis and effort to improve the design, operation, and maintenance features of electrical, mechanical, and/or utility systems.

**Assistant Engineer**

Under general supervision, incumbents design and prepare engineering plans and specifications for construction projects, both new construction and minor alterations; and inspect and advise on engineering features of construction work by University staff members and by contractors.

Assignments at his level are expected to be of moderate difficulty and responsibility, with work subject to checking and review by a licensed engineer.

Incumbents typically are expected to progress to the class of Associate Engineer, subject to licensure.

**Examples of assignments allocated to this level of difficulty and responsibility are:**

Engineering designer (civil, electrical or mechanical) for projects of limited scope undertaken by University staff, with work subject to checking and review by a licensed engineer.

Assistant to the project engineer (civil; electrical, or mechanical) for a major construction project, with responsibility for limited phases of the engineering work.

**Junior Engineer**

Under supervision, incumbents perform entry level professional engineering work. In the specialty of civil engineering incumbents supervise an engineering survey crew in the field; perform instrument work; make notes and sketches of surveys; calculate grades; determine excavation and fill areas and
quantities; and prepare office record maps of utilities, topography, roads, and structures. In the specialties of electrical and mechanical engineering, incumbents prepare layouts of utilities, prepare drawings of existing utilities, estimate costs of alterations to existing structures and utility systems, and prepare work orders and bills of materials.

This is the entry-level class for graduates in engineering. Assignments are structured to provide training experience under supervision of a licensed engineer. Incumbents typically are expected to progress to the class of Assistant Engineer.

MINIMUM QUALIFICATIONS

Principal Engineer
Graduation from college with major work in engineering and six years of engineering experience; including three years of responsibility design work; or an equivalent combination of education and experience. Professional engineering license required.

Senior Engineer
Graduation from college with major work in engineering and five years of engineering experience, including two years of responsible design work; or an equivalent combination of education and experience. Professional engineering license required.

Associate Engineer
Graduation from college with major work in engineering and three years of engineering experience, including one year of responsible design work; or an equivalent combination of education and experience. Professional engineering license required.

Assistant Engineer
Graduation from college with major work in engineering and two years of engineering experience, including one year of design drafting or survey work; or an equivalent combination of education and experience.

Junior Engineer
Graduation from college with major work in engineering; or an equivalent combination of education and experience.