

PART II	DEPARTMENT OF EDUCATION STATE OF HAWAII	8G.001 8G.002 8G.003 8G.004 8G.005 8G.006
	Minimum Qualification Specifications for the Classes:	

ENGINEERS I, II, III, IV, V & VI

Basic Education/Experience Requirements:

All applicants must meet one of the requirements specified in A, B or C below:

- A. Graduation from a school of engineering in an accredited college or university.

Note: For some positions, graduation from an accredited college or university with a degree in physics, mathematics or chemistry may be accepted as qualifying, provided the applicant has had at least 15 credits in engineering sciences, common to all engineering disciplines, e.g. thermodynamics, statics, electrical science, applied mechanics, engineering drawing, strength of materials, etc.

- B. Administrative, professional or technical experience involving the application and knowledge of the fundamental physical and mathematical sciences underlying professional engineering including physics, chemistry, mathematics through integral calculus and engineering sciences such as statics, dynamics, strength of material, thermodynamics, fluid mechanics and engineering drawing and other specialized courses to one of the branches of engineering. Such experience must be substantially equivalent to the knowledge and understanding gained by completion of a college training leading to a Bachelor's degree in engineering; or

- C. A combination of college training in engineering and experience mentioned in B above substantively equivalent to completion of a college training leading to a Bachelor's degree in engineering.

Experience Requirements:

Except for the substitutions provided for in this specification, applicants must have had progressively responsible experience of the kind and quality described below and in the amounts shown in the following table:

Class Title	Engineering Experience (years)	Supvry or Staff Advisory Exp (years)	Admin Exp (Yrs)	Total Exp (Yrs)
Engineer I	0	0	0	0
Engineer II	1	0	0	1
Engineer III	2	0	0	2
Engineer IV	3*	0	0	3
Engineer V	4*	**	0	4
Engineer VI	4*	1	***	5

*For the Engineers IV, V and VI levels, at least one year of the required engineering experience must have been experience comparable to the next lower level.

**For the Engineer V level, supervisory potential rather than actual supervisory experience may be accepted.

***Administrative Experience: Professional engineering experience which included the planning (including budget planning and justification), organizing, staffing, policy formulation and implementation of same and directing a program providing staff services and/or assistance.

Engineering Experience: Progressively responsible professional engineering which required the knowledge and application of the basic physical and mathematical sciences and the engineering sciences to the solution of theoretical or practical engineering problems.

Examples of qualifying professional engineering experience are as follows:

- A. The development and design of machines, equipment, structures or power, water, communication or transportation systems and facilities or the preparation of development, design or construction specifications for such materials or systems, involving the use of theoretical and applied mechanics, a knowledge of the properties of materials and other appropriate engineering and scientific knowledge and skills.
- B. Original research in one or more branches of engineering, developing engineering applications of physical and other scientific principles.
- C. Administration of engineering programs and projects, involving analysis of requirements for equipment and materials, study of technical feasibility and cost, selection of approach and direction of problem solution.

- D. Interpretation of systems operational requirements in terms of physical facilities and the design and development of standard procedures for efficient operational use or maintenance of such facilities.
- E. Evaluation, investigation or survey of engineering projects, structures, devices or services.
- F. Such activities as production, construction, regulation and testing, when they involve engineering considerations and decisions as important and controlling elements.

Note: In some situations, experience which is not of itself clearly professional engineering experience may be accepted in lieu of "professional" engineering experience. In such cases, the experience must have been preceded by prior "professional" engineering experience and must contribute directly and significantly to the candidate's professional engineering competence. For example, an engineer may be assigned to a management or a computer systems analysis position in preparation for assumption of higher-level responsibilities in engineering administration.

Quality of Experience:

For the Engineers IV, V and VI levels, at least one year of the required engineering experience must have been experience comparable to the next lower level.

In any case, the required amount of experience for any level will not in itself be accepted as proof of qualification. The applicant's record of experience and education must show that applicant has the ability to perform efficiently the duties of the position.

Supervisory or Staff Advisory Experience:

- A. Supervisory Experience: Professional engineering experience which included training subordinates, coordinating and assigning workloads, evaluating performance, assisting in difficult and problem areas and maintaining high standards of work and timely accomplishment of work objectives.

For the Engineer V level, supervisory potential rather than actual supervisory experience may be accepted. Supervisory potential or the ability to perform supervisory duties will be considered to have been met when there is strong evidence of the necessary supervisory aptitudes as demonstrated by

outstanding performance on special assignments of understudy supervisory activities, self-development programs such as further education or training in supervision or affirmative appraisals by supervisors as to leadership qualities; and/or

- B. Staff Advisory Experience: Professional engineering experience as technical expert in a specialized area or program function performing staff advisory, consultative and/or reviewing the work of a staff of specialist assigned to such activities as long-range planning, research and/or development of specific projects, programs, etc.

Administrative Experience: Professional engineering experience which included the planning (including budget planning and justification), organizing, staffing, policy formulation and implementation of same and directing a program providing staff services and/or assistance.

Substitutions Allowed:

Substitution of a Master's Degree in Engineering for Engineering Experience: A Master's degree in a pertinent engineering field from a school of engineering in an accredited college or university may be substituted for one year of engineering experience.

Substitution of Supervisory, Staff Advisory Experience or Administrative Experience for Engineering Experience: Excess Supervisory, Staff Advisory or Administrative experience of the type and quality described above may be substituted for Engineering experience on a year-for-year basis.

Substitution of Administrative Experience for Supervisory, Staff Advisory Experience: Excess Administrative experience of the type and quality described above may be substituted for Supervisory or Staff Advisory experience on a year-for-year basis.

Licenses Required:

Professional License Requirement: For the Engineer IV and higher levels, applicants must possess a Hawaii State Certificate of Registration as a professional engineer.

Driver's License: For some positions, applicants may be required to have a valid Hawaii State driver's license.

Tests:

An applicant who qualifies through Education Requirement option B or C may be required to take and pass a written test designed to measure the applicant's knowledge of the fundamental physical and mathematical sciences underlying professional engineering and applicant's understanding of the engineering sciences and techniques and applicant's application to engineering problems.

Note: Applicants who have qualified on the Engineering-In-Training (EIT) examination administered by the Professional and Vocational Licensing Board of the Department of Commerce and Consumer Affairs will not be required to take the written test mentioned in the above paragraph.

Quality of Experience:

Possession of the required number of years of experience will not in itself be accepted as proof of qualification for a position. The applicant's overall experience must have been of such scope and level of responsibility as to conclusively demonstrate that applicant has the ability to perform the duties of the position for which applicant is being considered.

Selective Certification:

Specialized knowledge, skills and abilities may be required to perform the duties of some positions. In such positions, certification may be restricted to eligibles who possess the pertinent experience and/or training required to perform the duties of the position.

Agencies requesting selective certification must show the connection between the kind of training and/or experience on which they wish to base selective certification and the duties of the position to be filled.

Physical and Medical Requirements:

Applicants must be physically able to perform, efficiently and effectively, the essential duties of the position which typically require the ability to read without strain printed material the size of typewritten characters, glasses permitted, and the ability to hear the conversational voice, with or without a hearing aid, or the ability to compensate satisfactorily. Handicaps in these or other areas will not automatically result in disqualification. Those applicants who demonstrate that they are capable of performing the essential functions of the position will not be disqualified under this section.

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Any condition which would cause applicants to be a hazard to themselves or others is cause for disqualification.

Any disqualification under this section will be made only after a review of all pertinent information, including the results of the medical examination, and requires the approval of the Superintendent or designee.

Due to the transfer of authority to the Department of Education to administer its own Civil Service System pursuant to Act 51 Session Laws of Hawaii 2004, this is an adoption of the minimum qualification specifications for the Executive Branch Civil Service classes ENGINEERS I, II, III, IV, V & VI by the Department of Education Civil Service system.

DATE APPROVED: MAR 21 2006

EFFECTIVE DATE: JUL - 1 2005



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