

0810 – Civil Engineering

Major Duties for This Position May Include:

- Perform operation and maintenance involving design and construction that encompasses the maintenance, repair, upgrade, and operation of infrastructure facilities, including utility systems, utilizing a professional knowledge of civil engineering.
- Monitor/manage construction projects for new construction, renovations, and improvements to real property facilities from start to finish including the performance of preconstruction site surveys all the way to completion to as-built drawings.
- Provide civil engineering assistance on solving current job problems and in-shop planning.
- Prepare and/or provide technical review of design calculations, analyses, drawings, and specifications to ensure compliance with project requirements.

Related Competencies

- Civil Engineering
- Customer Service (Clerical/Technical)
- Problem Solving
- Technical Competence

Basic Requirements

Successful completion of a degree in engineering. To be acceptable, the program must:

- Lead to a bachelor's degree in a school of engineering with at least one program accredited by the Accreditation Board for Engineering and Technology (ABET); or
- Include differential and integral calculus courses (more advanced than first-year physics and chemistry) in five of the following seven areas of engineering science or physics:
 - Statics, dynamics
 - Strength of materials (stress-strain relationships)
 - Fluid mechanics, hydraulics
 - Thermodynamics
 - Electrical fields and circuits
 - Nature and properties of materials (relating particle and aggregate structure to properties)
 - Any other comparable area of fundamental engineering science or physics, such as optics, heat transfer, soil mechanics, or electronics.

Or

A combination of education and experience - college-level education, training and/or technical experience that furnished (1) a thorough knowledge of the physical and mathematical sciences underlying professional engineering, and (2) a good understanding, both theoretical and

practical, of the engineering sciences and techniques and their applications to one of the branches of engineering. The adequacy of such background must be demonstrated by one of the following:

1. Professional registration or licensure - Current registration as an Engineer Intern (EI), Engineer in Training (EIT), or licensure as a Professional Engineer (PE) by any State, the District of Columbia, Guam, or Puerto Rico. Absent other means of qualifying under this standard, those applicants who achieved such registration by means other than written test (e.g., State grandfather or eminence provisions), are eligible only for positions that are within or closely related to the specialty field of their registration.
2. Written Test - Evidence of having successfully passed the Fundamentals of Engineering (FE) examination or any other written test required for professional registration by an engineering licensure board in the various States, the District of Columbia, Guam, and Puerto Rico.
3. Specified Academic Courses - Successful completion of at least 60 semester hours of courses in the physical, mathematical, and engineering sciences and that included the courses specified in the basic requirements. The courses must be fully acceptable toward meeting the requirements of an engineering program as described in A above.
4. Related Curriculum - Successful completion of a curriculum leading to a bachelor's degree in an appropriate scientific field, (e.g., engineering technology, physics, chemistry, architecture, computer science, mathematics, hydrology, or geology, may be acceptable in lieu of a bachelor's degree in engineering, provided the applicant has had at least 1 year of professional engineering experience acquired under professional engineering supervision and guidance. Ordinarily there should be either an established plan of intensive training to develop professional engineering competence, or several years of prior professional engineering-type experience, e.g., in interdisciplinary positions. (The above examples or related curricula are not all-inclusive.)

Minimum Qualifications

In additions to meeting the basic requirements above, applicants must meet the minimum qualifications requirement as defined below:

GS-11 Specialized Experience Requirements

You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-09 grade level in the Federal Service. Specialized experience for this position includes:

- Monitored day-to-day performance of a contract by reviewing drawings for accuracy and adequacy
- Evaluated requests for routine design deviations, and/or conducted site surveys to determine the need for new equipment or material; **and/or**
- Prepared civil engineering design criteria for smaller or less complex projects

Or Education

Ph.D. or equivalent doctoral degree **or** three (3) full years of progressively higher-level graduate education leading to such a degree **or** LL.M., if related. **TRANSCRIPTS REQUIRED.**

Or Combination

You may qualify on a combination of education and experience. The total percentage of experience at the required grade level compared to the requirement, must equal at least 100 percent. Only graduate level education more than the first 36 semester hours (54 quarter hours) may be combined to be considered for qualifying education. **TRANSCRIPTS REQUIRED.**

GS-12 Specialized Experience Requirements

You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-11 grade level in the Federal Service. Specialized experience for this position includes:

- Preparing engineering designs, project plans and specifications for infrastructure projects
- Managing infrastructure programs for dams, bridges, pavements, and other systems that involve recurring inspections
- Implementing multi-year programs to repair, restore, upgrade, and expand systems

Note: There is no substitution of education for specialized experience at the GS-12 level.

GS-13 Specialized Experience Requirements

You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-12 grade level in the Federal Service. Specialized experience for this position includes:

- Producing detailed designs, drawings, and construction documentation; originate, assess, and provide advice on concrete and reinforcing designs, engineering drawings, hydraulic designs, and soil and foundation mechanics; negotiate cost of minor changes with contractor representatives; and anticipate, evaluate, and resolve problems and issues affecting the quality, scheduling, budgeting, or progress of work performed in completing projects; etc.

Note: There is no substitution of education for specialized experience at the GS-13 level.

GS-14 Specialized Experience Requirements

You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-13 grade level in the Federal Service. Specialized experience for this position includes:

- Design, review and/or approval of all civil design features of assigned civil works and/or military projects; preparation of feasibility and engineering studies, site plan, provide advice and guidance on diversified engineering problems and technical expertise

covering modifications, review and interpret engineering data, criteria, and higher headquarters policy and regulations pertinent to civil engineering designing and construction etc.

Note: There is no substitution of education for specialized experience at the GS-14 level.

GS-15 Specialized Experience Requirements

You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-14 grade level in the Federal Service. Specialized experience for this position includes:

- Applying new developments and experienced judgement to solve novel or obscure problems
- Ability to extend and modify existing techniques
- Ability to develop new approaches for use by other technical experts in providing structurally sound and secure facilities and infrastructure

Note: There is no substitution of education for specialized experience at the GS-15 level.

Experience refers to paid and unpaid experience. Examples of qualifying unpaid experience may include volunteer work done through National Service programs (such as Peace Corps and AmeriCorps), as well as work for other community-based philanthropic and social organizations. Volunteer work helps build critical competencies, knowledge, and skills; and can provide valuable training and experience that translates directly to paid employment. You will receive credit for all qualifying experience, including volunteer experience.