

Employment Opportunities

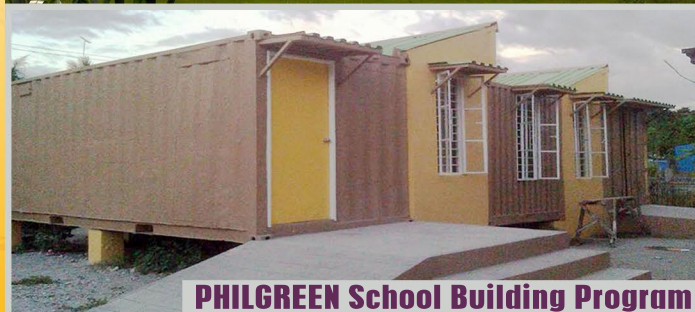
A vast array of jobs await a Civil Engineer. He can be an independent practitioner, or can work in a consultancy firm or in a government institution, in any one of the following fields of specialization:

- 1) **Structural Engineering:** his main task is the analysis and design of structures. The long list of structures include private dwellings, mixed use condominiums, government buildings and physical infrastructures. He prepares, signs and seals construction plans, structural calculations, specifications and bill of materials.
- 2) **Project Management & Construction Engineering:** he can choose to be employed and to specialize in any of the following responsibilities:
 - a. **Quantity survey** – preparing estimates, costs of the project and keeping track of any variations to the contract;
 - b. **Quality control** – coordinating plans, monitoring compliance of project activities with contract specifications;
 - c. **Rebar engineer** – preparing steel shop drawings and checking that placement of reinforcing bars comply with the structural code of practice;
 - d. **Concrete engineer** – assuring that the specified correct strength is attained;
 - e. **Formwork engineer** – responsible for the containment of poured fresh concrete to attain the required shape of the structure, preventing leakages causing honeycombs, and checking that the formwork can safely withstand the construction loads placed on it.



At a higher level, after years of experience, the civil engineer can be employed as **Project Manager** either during the design phase or the construction phase. He coordinates the design of all disciplines involved, engineering and architectural, monitors construction activities in accordance with the project schedule, coordinates with clients and review agencies, and manages project information.

Civil Engineer



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Civil Engineer

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Civil Engineering

The practice of civil engineering shall embrace services in the form of consultation, design, preparation of plans, specifications, estimates, erection, installation and supervision of the construction of buildings and physical infrastructures, including demolition and retrofitting.

Functions

A Civil Engineer is a Builder and a Problem Solver. He is responsible for producing safe, economical and environmentally – sound buildings and infrastructures either as a Consulting Civil Engineer or as a Contracting Civil Engineer. The civil engineer who has passed the licensure examination administered by the Professional Regulation Commission, duly registered and holds a valid professional identification card is authorized to affix his seal and sign the plans, technical specifications and bill of materials for buildings and infrastructure projects.

Consulting Civil Engineer

Key responsibility is designing of the project in conformance with the prevailing codes of practice. He incorporates soils and site investigation reports, hydrological and topographical data, material strengths and behavior, to properly plan and design projects.

Contracting Civil Engineer

The significant role is to transform a planned design layout into real architecture. He is engaged in actual construction, manages, directs and monitors progress, ensures compliance to design specifications and turns the plans into reality within the time frame and budget.

Cost of Education

The cost of education in the civil engineering course ranges from P10,000 to P60,000 per semester depending on the college or university one is enrolled in.

Skills and Competencies

A successful Civil Engineer must possess the following skills:

- **Technical Skills:** capability to apply mathematical formulas and principles, design techniques, methods and the technology involved in his work
- **Critical Thinking:** ability to identify the most reasonable and effective solution to problems and to resolve issues before they can become problems
- **Effective Communication:** ability to explain ideas and plans clearly with clients and with either technical or non-technical personnel involved in the project
- **Leadership Skills:** ability to lead a diverse group of professionals to complete the various aspects of the project on time and on budget

Basic Educational Requirement

The applicant for admission to the civil engineering licensure examination must have completed the prescribed curriculum in civil engineering from a school, institute, college or university recognized by the Philippine Government or the State wherein it is established.

Salary Compensation

Salaries of civil engineers are highly variable, increasing with years of related work experience and higher academic qualifications. Others who have been granted a certificate of recognition by the Professional Regulation Commission in one of the specialized fields also enjoy a higher compensation package. Some companies give low salaries but give bonuses as incentive for hard work.

The minimum entry salary of newly licensed civil engineers without experience in the job position he is assigned to ranges from P13,000.00 to P15,000.00.

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- 3) **Geotechnical Engineering:** his job is to determine the strength and adequacy of the rock and soil that support the structures, analyses soil composition and behavior to provide solutions to prevent erosion of embankments, landslides, and settlement of foundations.
- 4) **Transportation Engineering:** government institutions, particularly the Dept. of Public Works & Highways and the Dept. of Transportation & Communications are in constant need of civil engineers to provide roads, highway networks, bus and mass transit systems, and airports. Land development projects of private entities are also in dire need of civil engineers.
- 5) **Water & Hydraulics Engineering:** his concern is the flow and efficient conveyance of water from natural resources, drainage and irrigation facilities. In navigable waterways, he provides solutions to prevent flooding and erosion. The National Irrigation Administration, MWSS, Local Water Utilities Administration and the Philippine Ports Authority employ civil engineers.
- 6) **Environmental & Energy Engineering:** energy efficiency of buildings and mitigation of greenhouse gas emissions, water and wastewater treatment facilities, sewage collection and disposal systems and environmental impact assessment of the designated development are the concerns of a civil engineer. The Dept. of Environmental & Natural Resources and the Dept. of Energy are some of the institutions where he could be employed
- 7) **Education:** subjects in the civil engineering curriculum are best taught by civil engineers themselves.