

Structural Engineering Intern – Job Description

Structural Engineering Student Intern Position: Assist engineers with routine design work including the preparation of drawings in AutoCAD and Revit, design criteria and structural designs of concrete, masonry, steel, and wood members. Provide administrative assistance as required. Infrequent field work such as assisting engineers with the gathering of as-built building information. Previous AutoCAD and/or Revit experience is a plus.

Qualifications: Minimum 3rd year student pursuing a degree in Civil Engineering with a concentration in structures. Good GPA and work experience and/or extra-curricular activities while in school a plus.

IEI Training Program

The structural internship position at Innovative Engineering Inc. is geared towards BSCE or MSCE students with a specialization in structural engineering. Recognizing that a college education in engineering helps the student master the fundamentals, it does not always provide practical and useful knowledge applicable in the workplace. We find there are many gaps. Therefore, our training program starts with the assignment of small project with most of the structural elements found on a larger project as well as a senior level engineer mentor. Next, design criteria are developed based on the applicable building code. This involves researching the jurisdiction where the project is located for local code requirements and special frost depth, snow, wind, and seismic conditions. Next through coordination with the architect, the dead load of materials is researched as well as applicable live loads from the building code and included in the design criteria. The student is encouraged to learn from our extensive library and pre-recorded webinars the basis for the design criteria input.

A framing plan is then sketched and from this free body diagrams for lateral as well as gravity design and analysis are generated. Lateral analysis is performed utilizing hand and computerized techniques. Gravity design is performed utilizing computerized techniques. Guidance for selecting members, unbraced lengths and deflection criteria is provided. The importance of checking the reasonableness of results is reviewed including rules of thumb, computer rendering of the model and shear moment and deflection diagrams.

Connection and foundation design is covered next to complete the engineering for the project.

Most schools continue to teach AutoCAD even though it is antiquated software. For this reason, students are exposed to Revit BIM software through mentoring, self-education from pre-recorded webinars as well as formalized training.

Innovative believes in substantive continuing education and spends approximately 4 times the national average on training. An experienced senior structural engineer serves

as a mentor and meets frequently with the student to answer questions and review concepts not covered in school.