



Civil Engineering Professional Experience Programme (PEP)

BE in Civil Engineering at NUI Galway

The first year at NUI Galway is common to all engineering students so that they get important early exposure to other engineering professions. This is achieved primarily through a module on engineering fundamentals and three design and build projects. In addition, a strong basis in mathematics, engineering sciences (physics, chemistry), graphics and computing is provided. The focus on core civil engineering applications begins in the second year, and continues into the third and fourth years, with learning consolidated through a mix of lectures, design, laboratory and project work.



Primary areas of undergraduate training

Building and Construction	Principles of Building, Properties of Building Materials, Energy in Buildings, Construction Operations, Conditions of Contract, Health and Safety, Project Management, Setting out and Surveying
Structural Design	Principles of Structural Design to Eurocodes, Loads on Structures, Steel Work, Reinforced and Prestressed Concrete, AutoCAD Structural Drawings
Soil Mechanics	Classification and Properties of Soils, Geological Origins, Site Investigation, Foundations, Slope Stability, Retaining Structures
Highway and Traffic Engineering	Traffic, Junction Design, Pavement Designs, Bituminous Materials
Hydrology and Hydraulics	Fluid Properties, Flow in Pipes and Open Channels, Non-uniform and Unsteady Flow, Flow in Porous Media, Fluid Mechanics, Flood Control
Environmental Engineering	Water Purification and Wastewater Treatment, Waste Management
Analysis	Mechanics of Materials, Structural Analysis, Numerical Analysis, Computational Methods of Analysis
Computing	Use of Personal Computers, Excel, Programming Languages (e.g. MATLAB), AutoCAD, Civil Engineering Analysis and Design





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Work Areas Suited to Civil Engineering PEP Students

- Structural analysis/design
- Foundation and retaining structure design
- Hydraulic analysis/design
- Wastewater treatment
- Pavement design
- Traffic analysis
- Junction design
- AutoCAD projects
- Setting out and surveying
- Construction supervision
- Project management
- Health and safety management

Fourth Year Individual Projects

Participating companies are welcome to suggest topics for 4th year dissertations to be undertaken by PEP students upon return to university. These projects can meet a specific need or interest of the company, and do not have to be aligned with the subject area of the student's work while on PEP.

PEP Duration

At the end of the third year, students are available for PEP for 5 months between the 1st April and the 31st August. By this time, they will have had experience of the topics in the table overleaf.



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