

Build The Future As A Civil Engineer

Civil engineering graduates enter an industry with a heritage stretching back thousands of years and which proudly lists the pyramids of Egypt, the Taj Mahal of India, San Francisco's Golden Gate Bridge and Kuala Lumpur's Twin Towers as just a few of its fascinating achievements.

At ground level, civil engineers are credited with developing efficient transport systems, urban developments and environmental management systems – structures which enhance our daily lives. Civil engineers find roles in both public and private sectors as consultants, contractors, surveyors, site managers, planners, administrators, academicians and researchers. Those with entrepreneurial leanings can progress to managing their own firms.

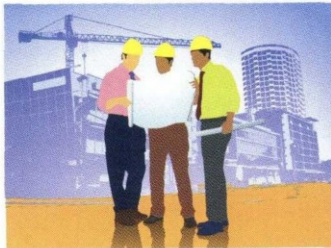
Analytical ability

"To succeed in this field, a graduate requires comprehensive knowledge of the fundamentals of the discipline as well as strong analytical skills, a lifelong desire to learn and an awareness of the developing needs of societies," says Prof. Dr Ideris Zakaria,

dean of the Faculty of Civil Engineering and Earth Resources at Universiti Malaysia Pahang.

In the first year, a student learns mathematics, physics and computation and basic engineering theory, analysis and design. He then goes on to study the many core elements of civil engineering which include structural analysis, hydraulics, hydrology, environmental engineering, geomatics, geology, construction, geotechnics, foundation engineering, transportation, highway engineering,

water supply and wastewater treatment and structural design, explains Assoc. Prof. Dr Ahmad Tarmizi bin Abd Karim, dean of the Faculty of Civil and Environmental Engineering at Universiti Tun Hussein



Onn Malaysia.

"In addition to exemplary engineering expertise, graduates also require strong interpersonal and communication skills, a positive mindset, excellent problem-solving abilities, a team spirit and the ability to work independently," says Prof. Dr Ahmad Farhan Mohd Sadullah, dean of the School of Civil Engineering at Universiti Sains Malaysia. "Our courses also emphasise sustainability and encourage the knowledge of languages and humanities. In the concluding year, students carry out research for a project and are introduced to integrated design."

Whilst universities offer an array of specialisations, including construction, transportation, urban, geotechnical, environmental, materials, water resource, earthquake and coastal engineering, geomatics and project management, Farhan notes that structural engineering remains the most sought-after area of advanced study.

Ensure that your selected institution is equipped with state-of-the-art laboratories, advises Assoc. Prof. Christianine Della, vice president, academic, at Infrastructure University Kuala Lumpur. "Well-equipped facilities – such as structural, geotechnical and hydraulics labs, amongst others – are critical for hands-on, experiential learning."



Internships usually take place during the third year and last around three months. During this industrial training, a student will gain grounding in planning, design, construction, contract administration and how to maintain infrastructure facilities, notes Ideris.

"This is a chance to put theory into practice, experience real-world challenges, network and learn aspects

not taught in the classroom," says Assoc. Prof. Dr Helmi Zulhaidi Mohd Shafri, head of the Department of Civil Engineering at Universiti Putra Malaysia.

Solid prospects

Academicians forecast lucrative and rising opportunities for civil engineering graduates over the next several years on the back of swelling global economies and populations.

Malaysian employers particularly seek graduates with specialisation in structural engineering and project management skills to meet the nation's infrastructure development needs, says Ir Ahmad bin Tamby Kadir, head of the Department of Civil Engineering at UCSI University.

Helmi notes increasing demand for graduates with detailed knowledge of seismic analysis and earthquake modelling of structures.

Tarmizi says the call for structural specialisation will be buoyed by demand for new townships, highways, water supply and pollution control systems as well as the need to repair and replace existing structures.

"And as Malaysia progresses towards developed nation status, an increasing number of graduates with specialisations in environment and sustainability will be required."

High performers can expect to be promoted to the position of senior engineer within three to five years or go on to earn their Professional Engineer's certification, explains Helmi.