

Overview of Construction Engineering and Management

The field of construction engineering and management addresses all aspects of project development.

From a client/owner or consultant's side, engineering managers need to understand the financial aspects, risks, contracts, procurement strategies as well as aspects of constructability, safety and quality for successful implementation and maintenance of infrastructure projects.

Similarly, contractors are starting to play a leadership role in the project delivery process. Project leaders are expected to be well trained professional engineers, also competent in terms of legislation, procurement practice and project feasibility. International changes in the project delivery field indicate a marked shift necessitating the professionalisation of the construction industry. Engineers in general have a high work ethic and projects teams are able to deliver increasingly competitive and technically innovative projects. Engineering qualifications with sound scientific and engineering content remains imperative, but needs to be enhanced by softer skills and project leadership.

The courses and research by the Chair address these aspects for improving the industry. Although it participates in the curriculum of the final year of under graduate studies in civil engineering, the focus is on the post graduate programme. Courses offered in the post graduate programme are a compilation of modules from the Department of Civil Engineering, Department of Industrial Engineering and other departments at Stellenbosch University. Course topics are structured to provide for technical and management skills to be developed amongst all participants in the project cycle. In order to maintain close collaboration with industry, and to support continuous professional development, industry participants are able to attend modules of the post graduate curriculum.

The CMP (Construction Management Program) develops high level management skills amongst experienced industry practitioners. It is a four week intensive course with national and international faculty, and aims to stimulate debate, innovation and creativity in the industry.

Research is an essential part of the learning process towards scientific and investigative thinking. This is performed as part of the post graduate programme and is focused around central themes in order to build a capacity and expertise for the department in specific fields.

The research at the Chair in Construction Engineering and Management aims to address the needs of the industry by performing research relevant to the construction environment which would allow improved processes, management and quality. Students are encouraged to suggest

their own topics within the framework of the Chair research themes, which can be tailored in collaboration with the study leader.

Courses are taught in English to accommodate international participation in the post graduate program.

Careers in Construction Engineering and Management

Studies in construction engineering and management equip an engineer for working in both the office and the field as either a project manager, a construction engineer, a construction manager or a combination of these. The responsibility can vary from planning and design to the construction and management of a project. There are a wide range of careers, which may be chosen from being the project owner and developer, the designer, or general contractor in construction projects. There is the possibility of working in different fields of infrastructure development such as civil works, building, the oil and gas industry and mechanical/electrical projects or the renewable energy field.