

Bachelor of Science in CIVIL ENGINEERING

University of Cape Town



Why Civil Engineering matters

Civil engineers develop and take stewardship of the infrastructure that enables communities to thrive.

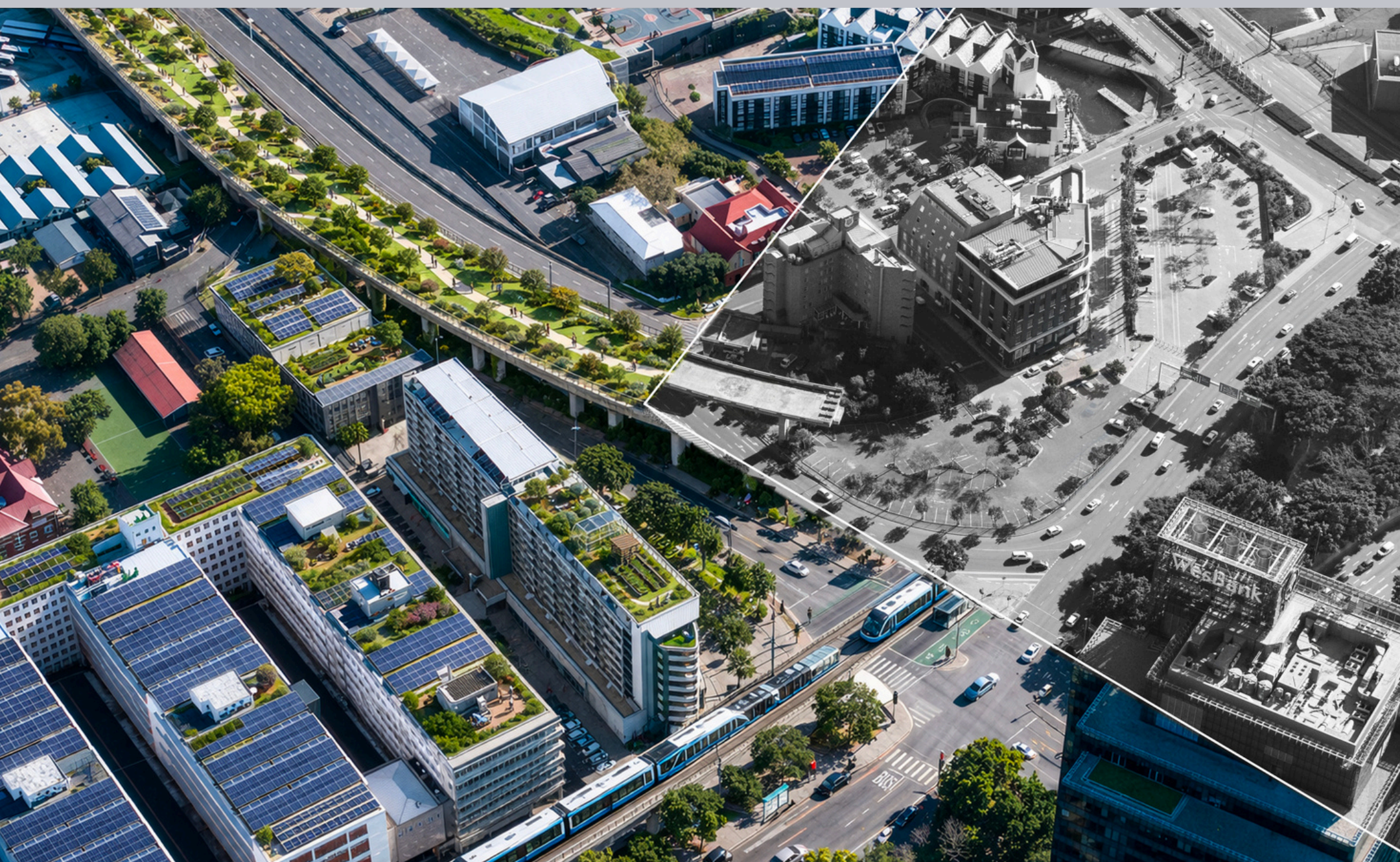
Clean water, sanitation systems.

Safe roads and bridges, housing and dams.

Ensuring renewable energy and building resilient cities.



We improve lives at scale.



Shaping smart cities | Protecting communities | Expanding opportunities



Dedicated, modern and world-aware

UCT introduced a new Civil Engineering curriculum in 2025 in response to Africa's evolving social and infrastructure challenges. The updated curriculum prepares students for these challenges through a variety of dedicated measures, by:

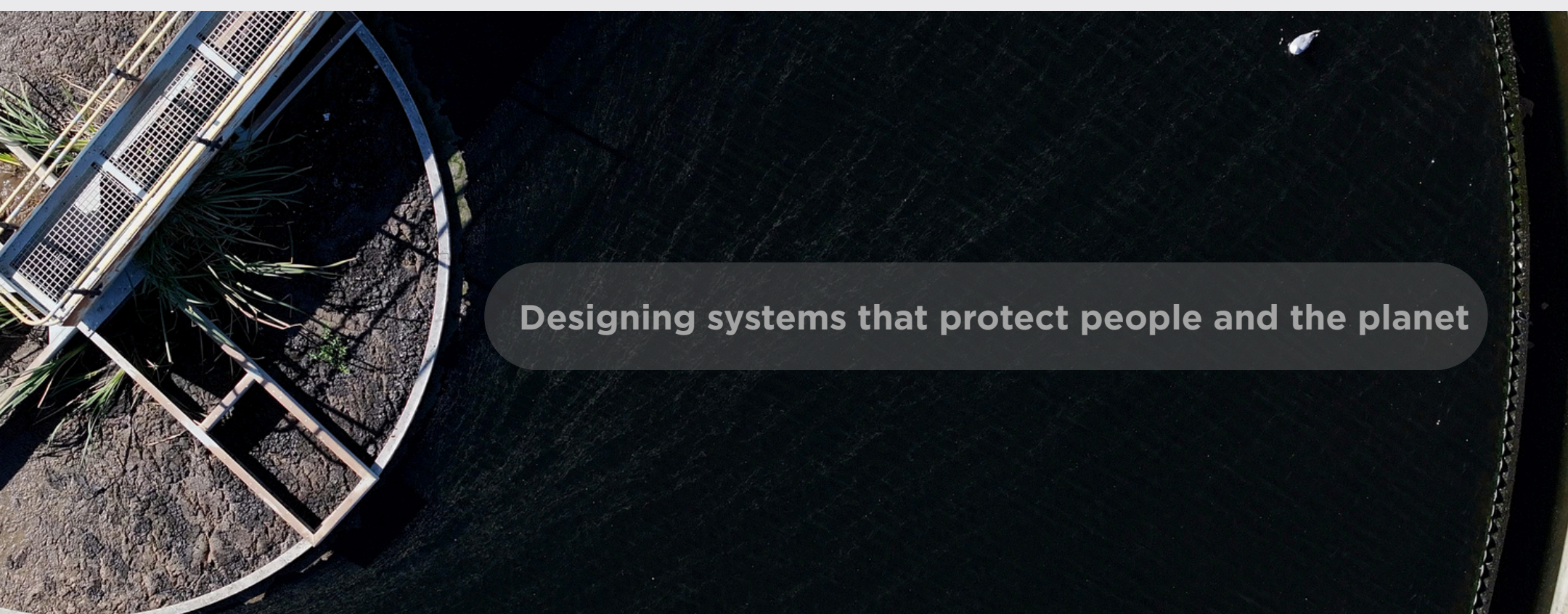
- introducing students to digital skills
- threading sustainability through the program
- consolidating disciplinary knowledge and better articulating courses
- introducing students to practice-facing projects, and
- introducing advanced disciplinary content.

This places our students at the forefront of the field of civil engineering in South Africa, Africa and beyond.

Do you qualify?

To study Civil Engineering, your academic toolbox should include:

- Mathematics - precise calculation is the bedrock for designing safe structures, analysing structural integrity, understanding traffic flows and managing construction projects
- Physical science - the theoretical and foundational knowledge you'll need for designing infrastructure such as water treatment systems



Designing systems that protect people and the planet



21st-century curriculum relevance

Our civil engineering curriculum is designed for 21st-century practice. Students gain strong foundations in core engineering principles while developing skills in emerging areas such as programming, data science, and sustainability.

Rather than requiring advanced study across every specialisation, students select disciplinary electives aligned with their interests and career goals. This allows for deeper learning, intellectual flexibility, and exposure to contemporary topics shaping the profession.

Teaching emphasises locally relevant case studies and socially responsive engineering within the South African context, while maintaining global standards of excellence. Graduates are equipped not only with technical competence, but with the critical thinking, ethical grounding, and adaptability required to lead infrastructure development in a rapidly changing world.

A central innovation in our revised curriculum is the introduction of structured, project-linked learning. Twelve projects, integrated throughout the degree, will connect disciplinary knowledge to real-world challenges while intentionally developing graduate competencies. The timetable includes dedicated project weeks, enabling focused, collaborative work.



Why UCT?

UCT civil engineering graduates are highly sought-after in consulting engineering, construction, government, and postgraduate research, both locally and internationally.

- Academic excellence at a research-intensive university;
- Strong industry connections and professional preparation;
- Accredited by the Engineering Council of South Africa (ECSA), a signatory to the Washington Accord, ensuring international recognition of the degree;
- Commitment to impact,
- Advancing infrastructure solutions that contribute to social justice and sustainability in Africa and the rest of the world.

Not just academics

- UCT offers excellent student facilities on and off campus;
- Vibrant campus and sporting life.





How long to complete the degree?

The Civil Engineering degree can be completed in four years, or as a structured and extended five-year option. The five-year pathway allows for a more balanced workload and space for personal development.

UCT follows a semester system, with the academic year divided into two teaching semesters. Each semester consists of approximately 13 weeks of lectures, tutorials, labs and project time followed by a study period and examinations.

Students register for courses at the beginning of the year, and each course carries a specific number of credits that contribute to the total required for the degree.



Civil engineers: the first line of defence

Designing systems to protect people and the planet



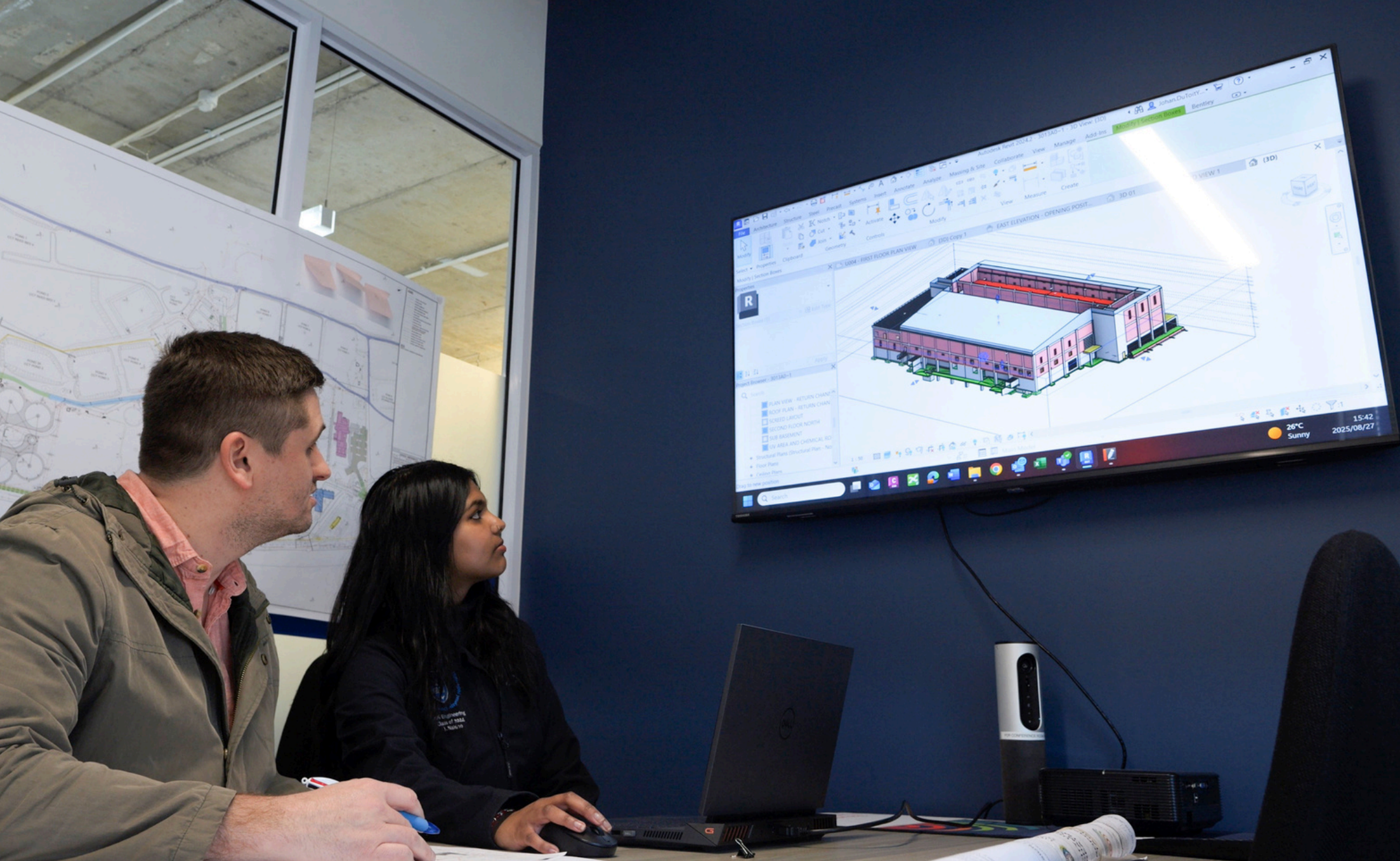
Postgraduate study and research

We offer a wide range of postgraduate programmes linked to research fields in which the department is currently active:

- Civil infrastructure management and maintenance
- Geotechnical engineering
- Structural engineering and materials
- Transport studies
- Polar engineering
- Water quality engineering
- Engineering education
- Engineering heritage



Help build the future of African cities:
more inclusive, more resilient, and more sustainable



Career and job prospects

Graduates of the UCT Civil Engineering programme are highly regarded by employers across South Africa, the African continent, and internationally. A broad foundation in technical skills, problem-solving, and professional practice opens pathways to:

- Consulting engineering - designing roads, bridges, buildings, and water systems
- Construction and project management - delivering major infrastructure projects
- Government and public sector - supporting infrastructure planning and service delivery
- Utilities and transport authorities - managing and maintaining essential networks
- Academia



Civil Engineering curriculum

Semester 1

Year 1

Mathematics IA for Engineers
 Physics A for Engineers
 Introduction to Geology for Civil Engineers
 Civil Engineering Drawing
 Introduction to Civil Engineering

Semester 2

Mathematics IB for Engineers
 Environmental Chemistry
 Introduction to Engineering Mechanics
 Surveying and GIS for Engineers
 Water Challenge Project
 Sustainable Urban Infrastructure Project

Year 2

Vector Calculus for Engineers
 Statistics for Engineers
 Mechanics of Materials
 Transportation Engineering I
 Geotechnical Engineering 1
 Structural Systems Project
 Transportation Infrastructure Project

Linear Algebra and Differential Equations
 Economics for Engineers
 Analysis of Statistically Determinate Structures
 Hydraulics 1
 Water and Sanitation Infrastructure Project

Year 3

Analysis of Statically Indeterminate Structures
 Geotechnical Engineering 2
 Geo-structural Project
 Computer Science
 Hydraulics of Open Channel Flow
 Sustainable Urban Drainage Systems Project
 Geotechnical Design for Infrastructure Project

Introduction to Structural System Design 1
 Construction Materials
 Transportation Systems and Infrastructure Planning
 Water Quality Engineering
 Data Engineering and Information Modelling
 Structural Design and Detailing Project
 Advanced Data Engineering Project

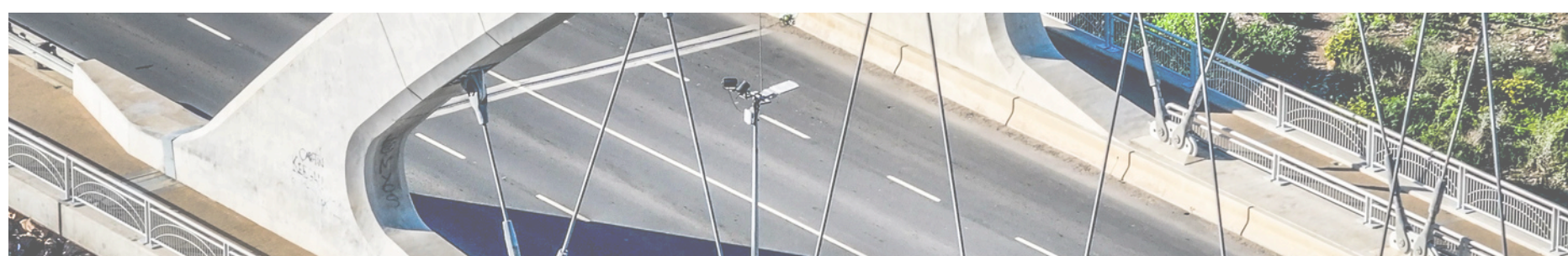
Year 4

Creating Sustainable Impact
 Professional Engineering Systems and Practice
 Engineering Project Case Study
 Community and Infrastructure
 Resilience Project
 Hydraulics Elective
 Transport Elective
 Water Quality Elective
 Geotechnical Elective
 Structures Elective

Research Proposal
 Design Project
 Advanced Infrastructure Planning and
 Construction Project
 Research Project

Key: Disciplinary courses | Project courses | Elective courses

Note: a 5-year plan is also available





Africa's leading engineering education centre

The Department of Civil Engineering at the University of Cape Town was established in 1910 and is the oldest in the country.

We attract local and international students and have grown into one of Africa's leading centres for civil engineering education and research.

We have produced thousands of civil engineers who have helped to build South Africa and other countries across the world.

Admission requirements

Mathematics: Minimum 75%.

Physical Science: Minimum 70%.

English: Must meet university proficiency requirements.

Competitive FPS (Faculty Point Score) of 500+ required

NBTs required for all applicants.

Apply here:

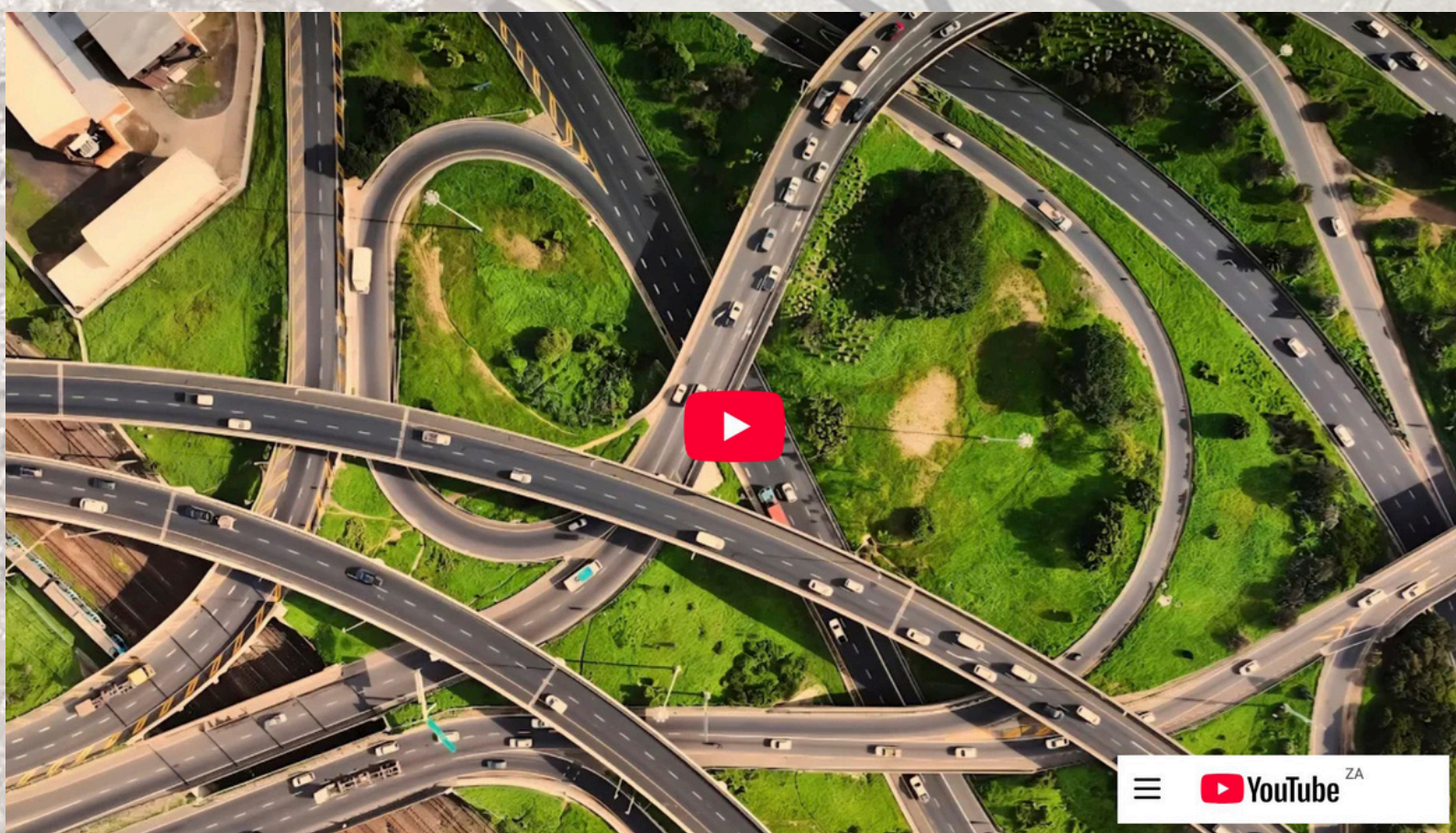
<https://applyonline.uct.ac.za>

Applications open April

Departmental contacts:

civil@uct.ac.za

Tel: 021 650 2584



Watch an introduction to Civil Engineering

<https://youtu.be/FIS7u-Wi9Sw?si=rTGCZR-WhUqbUXRr>