Please note dates/courses reflected here may change, please contact the department to confirm commencement details.

Programme in Structural Engineering and Materials
Convenor: A/Prof Pilate Moyo, Tel: 021-650 2592 / email: pilate.moyo@uct.ac.za

Programme in Geotechnical Engineering
Convenor: Dr Denis Kalumba, Tel: 021-650 2590 / email: denis.kalumba@uct.ac.za

Programme in Transport Studies
Convenor: A/Prof Roger Behrens, Tel: 021-650 4757 / email: rogerbehrens@uct.ac.za

Programme In Urban Infrastructure: Design and Management
Convenor: A/Prof Romano Del Mistro, Tel: 021-650 2605 / email: romano.delmistro@uct.ac.za

Programme In Urban Water Management
Convenor: A/Prof Neil Armitage, Tel: 021-650 2589 / email: neil.armitage@uct.ac.za

Programme In Water Quality Engineering
Convenor: Prof George Ekama, Tel: 021-650 2585 / email: george.ekama@uct.ac.za

All lectures held on Mondays & Thursdays from 17:00 to 19:30

Programme in Civil Engineering
Convenor: A/Prof Pilate Moyo, Tel: 021-650 2592 / email: pilate.moyo@uct.ac.za

Programme in Projects and Construction Management
Convenor: A/Prof Neil Armitage, Tel: 021-650 2589 / email: neil.armitage@uct.ac.za

Programme in Water Quality Engineering
Convenor: Prof George Ekama, Tel: 021-650 2585 / email: george.ekama@uct.ac.za

Programme in Civil Engineering
Convenor: A/Prof Pilate Moyo, Tel: 021-650 2592 / email: pilate.moyo@uct.ac.za

Programme in Projects and Construction Management
Convenor: A/Prof Neil Armitage, Tel: 021-650 2589 / email: neil.armitage@uct.ac.za

General Information

Applications and Registrations:
Persons wishing to register as postgraduates for the first time must formally apply for admission at least three weeks before their course begins. International students should ensure that the application and issue of a valid study permit is well in advance of course commencement—refer www.uct.ac.za/about/iapo/overview/welcome/. Application forms are available online at www.uct.ac.za/downloads/uct.ac.za/applications/forms/lp1.pdf or the Admissions Office, Wilfred and Jules Kramer Building, Middle Campus.

Tel: (021) 650 2128, Fax: (021) 650 5189 or email: admissions@uct.ac.za

Returning postgraduates must renew their registration in accordance with the instructions that will be sent to them in January 2010.

Students are asked to note four important points:

1. Students may register for the following options:
   - The Postgraduate Diploma in Engineering (PDE) (minimum 120 credits of coursework).
   - MScEng for Engineering graduates by (a) coursework and thesis, in which a minimum of 60 credits must be obtained from courses & 120 credits from a thesis; or (b) a 180 credit thesis. Students must also prepare a scientific paper for publication as part of the degree requirements.
   - A 120/60 MEng, in which a minimum of 120 credits must be obtained from courses, and 60 credits from a research project. In this case, courses must be selected so as to represent a coherent and consistent field of study in a given area of specialisation, i.e. Structural Engineering and Materials; Transport Studies; Water Quality Engineering or Urban Management and Urban Engineering. Students should approach relevant programme convenors for further advice in this regard. Students will graduate with a MEng in the relevant field. No scientific paper is required.

2. Students are referred to the Faculty Handbook obtainable from The Faculty Office or www.uct.ac.za/apply/handbooks, Tel: (021) 650 2134 or inge.newman@uct.ac.za for further details in regard to the above.

3. The Transport Studies Programme is offered jointly by the Dept. of Civil Eng. & the School of Architecture, Planning & Geomatics. Students may register for either: an MPhil degree, MEng degree or a MScEng for Engineering graduates by (a) coursework and thesis, in which a minimum of 60 credits must be obtained from courses, and 60 credits from a research project. In this case, courses must be selected so as to represent a coherent and consistent field of study in a given area of specialisation, i.e. Structural Engineering and Materials; Transport Studies; Water Quality Engineering or Urban Management and Urban Engineering. Students should approach relevant programme convenors for further advice in this regard. Students will graduate with a MEng in the relevant field. No scientific paper is required.
Programme in Structural Engineering and Materials

CIV5086Z: Advanced Structural Mechanics With Applications (16 credits)
Vibration modelling and structural dynamics; application to seismic-resistant, storm- resistant and blast-resistant design of engineering structures; buckling and instability phenomena; application to the design of thin-walled structures.

CIV5002Z: Structural Concrete Properties And Practice (16 credits)
Concrete properties, cement chemistry, cement hydration, workability; desirable properties for concrete; plastic and hardened properties; including strength, creep, shrinkage; concrete mix design; prediction of concrete structural properties; concrete fracture and failure; design approaches; concrete quality control. Special concretes, industrial visits, seminars, projects, laboratories.

END5068Z: Bus Planning And Operations Management (20 credits)
Basic bus systems and transport policy challenges. Service and route planning, bus stop, station and running-way capacity issues. Scheduling, vehicle utilisation, Institutional arrangements and regulatory approaches. Paratransit, integration.

END5036Z: Local Area Transport Planning, Management and Design (20 credits)
The planning and implementation of transport improvements at a local area (as opposed to citywide) scale. Urban design, landscape and geometric design of streets. The design and management of local area movement networks. Accommodating pedestrians, bicycles and persons with movement disabilities in local area movement networks.

END5035Z: Management of Transport Supply and Demand (20 credits)
The rationale for the management of transport systems through alternatives to large-scale infrastructure provision. Traffic impact assessment and access management as a means of managing the impacts of new land use development on transport systems. Road safety management. ‘Transport system management’ as a means of managing transport supply. ‘Travel demand management’ as a means of managing travel behaviour. The use of ‘intelligent transport systems’ in supply and demand management.

END5038Z: Integrated Land Use-Transport Planning (20 credits)

END5039Z: Non-motorised Transportation (20 credits)
Current South African realities and the importance of non-motorised travel modes. Planning frameworks for non-motorised transportation infrastructure improvements and network management. Methods of site and network analysis, and approaches to modelling and simulation. Footway and pathway design. The design of pedestrian precincts. Low-cost bicycle supply and promotion. Cycleway and bicycle parking design. Pedestrian and bicycle crossing vehicle conflicts. NBH. The course will not be offered in 2010 if insufficient students register.

END5045Z: Intermodal Public Transport Planning and Economics (20 credits)
Intermodal Public transport planning and mode economics. Legislative, institutional and financial frameworks for integrated public transport planning, management and operation. Operating characteristics and selection of different modes. Integrated public transport operations. Integrated public transport infrastructure. Finance and integrated ticketing and fare structures. Service marketing and integrated public information systems.

END5047Z: Transport Demand Analysis And Public Transport (20 credits)
Travel data collection and survey design. Data processing and analysis. The link between methodological approaches to transport analysis and the analytical questions raised by different policy environments. Theoretical and philosophical backgrounds of assessment and evaluation methods. Techniques for the assessment and evaluation of urban transport proposals.

END5048Z: Transport Modelling (20 credits)
Theories of travel behaviour and traffic flow. Overview of model types from strategic to nanoscopic. Travel demand modelling methods, including, trip generation, trip distribution, mode choice and trip assignment. Output analysis. The link between models and the analytical questions raised by different policy environments.

END5067Z: Rail Planning And Operations Management (20 credits)
Overview of railway, legislative, financing and planning for infrastructure provision and service operation (including policy debates on competition and ownership). Basic rail system concepts, station design, alternative rail technologies and operating characteristics. Service planning, scheduling and managing passenger operations. Train movement control systems. Reliability, disruption and incident management. Asset management. Contracts and cost control management. International case studies of successful rail service revitalisation.

Programme in Infrastructure: Construction and Management

CIV5064Z: Developing Cities: Issues and Strategies (20 credits)
International and South African urban conditions and urban policy trends; contemporary approaches to understanding cities and development; poverty, health and urban services; popular organization, protest, participation, governance, informality, public sphere and livelihoods.

CIV5052Z: Urban Renewal (20 credits)
Inner city regeneration, revitalisation of the ‘townships’ and informal settlement upgrading.

CIV5107Z: Integrated Urban Water Management (20 credits)
Introduction to Integrated Urban Water Management (IUMAN). The urban water cycle; description, social imperatives, environmental considerations, economic challenges. Water supply and sanitation; technical options, Free Basic Water, demand management, loss control, use of recycled water. Sewage / public health considerations; service levels / technical options, the dry versus wet sanitation debate, social acceptance, greywater management. Drainage - Service levels / technical options, Sustainable Urban Drainage Systems (SUDs), urban litter management, urban rivers, risk management, groundwater issues. Management - Water Sensitive Urban Design (WSUD). Introduction to asset management GIS as a water management tool, sustainability indicators.

Programme in Urban Water Management

CIV5032Z: Introduction to Municipal Wastewater Treatment (4 credits)

CIV5045Z: Activated Sludge System (10 credits)
Quantitative development and use of the activated sludge system steady state model including nitrification for design and operation. Quantitative development and use of the activated sludge system steady state model; nitrification-denitrification (ND) and biological excess P removal systems.

CIV5050Z: Waste Water Treatment Plant Design (20 credits)
Application of the principles and procedures to WWTP design case study.