

# BACCALAUREUS TECHNOLOGIAE: ENGINEERING: CIVIL: STRUCTURAL ENGINEERING

Qualification code: BTSQ02 - NQF Level 7

Campus where offered: Pretoria Campus (block-mode classes)  
Last year of new intake: July 2019  
Teach-out (phase-out) date: 30 June 2023

Students registered for this qualification should complete their studies according to the teach-out date prescribed for the qualification, subject to the stipulations of Regulation 3.1.11 and 3.1.13 in the Students' Rules and Regulations.

Information on phased-out programmes can be obtained from the TUT website, [www.tut.ac.za](http://www.tut.ac.za).

## CURRICULUM

Consult the 2019 Faculty Prospectus for the full contents of the qualification.

### Please note:

Students must take a minimum of five core subjects, namely Reinforced Concrete Design IV, Foundation Engineering IV, Structural Analysis IV, Theory of Structures IV, and Structural Steel Design IV, with the balance made up of subjects offered in the other fields of specialisation. Subjects are offered as determined by the Head of the Department.

For ease of professional registration as a Professional Structural Engineering Technologist, it is strongly recommended that the students take all eight of the mandatory subjects from the field of Structural Engineering.

Please note that if students register for the subject Construction Materials Technology IV, they are not permitted to register for Asphalt Technology IV or Concrete Technology IV.

## ATTENDANCE

CODE	SUBJECT	CREDIT
<b>FIRST SEMESTER (2022)</b>		
RCD401T	Reinforced Concrete Design IV	(0,125)
STD401T	Structural Timber Design IV	(0,125)
<b>SECOND SEMESTER (2022)</b>		
FDE401T	Foundation Engineering IV	(0,125)
PCG401T	Pre-Stressed Concrete Design IV	(0,125)
<b>FIRST SEMESTER (2023)</b>		
SAS401T	Structural Analysis IV	(0,125)
TSC411T	Theory of Structures IV	(0,125)
<b>SECOND SEMESTER (2023)</b>		
SSE401T	Structural Steel Design IV	(0,125)
STM401T	Structural Masonry Design IV	(0,125)
TOTAL CREDITS FOR THE QUALIFICATION:		<b>1,000</b>



## SUBJECT INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular subject. At time of publication, the syllabus content was defined as follows:

### F

**FOUNDATION ENGINEERING IV (FDE401T)** **1 X 3-HOUR PAPER (OPEN BOOK)**  
(*Subject custodian: Department of Civil Engineering*)  
Shallow and deep foundation design, lateral earth support. (Total tuition time: ± 32 hours)

### P

**PRE-STRESSED CONCRETE DESIGN IV (PCG401T)** **1 X 4-HOUR PAPER (OPEN BOOK)**  
(*Subject custodian: Department of Civil Engineering*)  
Design of pre-stressed concrete structures and computer applications. (Total tuition time: ± 32 hours)

### R

**REINFORCED CONCRETE DESIGN IV (RCD401T)** **1 X 4-HOUR PAPER (OPEN BOOK)**  
(*Subject custodian: Department of Civil Engineering*)  
Design of reinforced concrete structures, computer applications. (Total tuition time: ± 32 hours)

### S

**STRUCTURAL ANALYSIS IV (SAS401T)** **1 X 4-HOUR PAPER**  
(*Subject custodian: Department of Civil Engineering*)  
Space frames/influence lines of statically indeterminate structures; yield line analysis of slabs, finite element analysis; arches: two pinned and fixed; beam column analogy. (Total tuition time: ± 32 hours)

**STRUCTURAL MASONRY DESIGN IV (STM401T)** **1 X 4-HOUR PAPER (OPEN BOOK)**  
(*Subject custodian: Department of Civil Engineering*)  
Design of unreinforced and reinforced structural masonry structures. Detailing. (Total tuition time: ± 32 hours)

**STRUCTURAL STEEL DESIGN IV (SSE401T)** **1 X 4-HOUR PAPER (OPEN BOOK)**  
(*Subject custodian: Department of Civil Engineering*)  
Design of structural steel structures, computer applications. (Total tuition time: ± 32 hours)

**STRUCTURAL TIMBER DESIGN IV (STD401T)** **1 X 4-HOUR PAPER (OPEN BOOK)**  
(*Subject custodian: Department of Civil Engineering*)  
Design of timber structures. Computer applications. (Total tuition time: ± 32 hours)

### T

**THEORY OF STRUCTURES IV (TSC411T)** **1 X 4-HOUR PAPER**  
(*Subject custodian: Department of Civil Engineering*)  
Advanced structural analysis methods: stiffness method and flexibility method. Beams on elastic foundations. Matrix stiffness method. (Total tuition time: ± 32 hours)

