

# University of Pretoria Yearbook 2017

## BScHons Applied Science Transportation Planning (12243009)

**Duration of study** 1 year

**Total credits** 128

### Programme information

The BScHons (Applied Science) degree is conferred by the following academic departments:

- Chemical Engineering
- Civil Engineering
- Industrial and Systems Engineering
- Materials Science and Metallurgical Engineering
- Mechanical and Aeronautical Engineering
- Mining Engineering

Any specific module is offered on the condition that a minimum number of students are registered for the module, as determined by the head of department and the Dean. Students must consult the relevant head of department in order to compile a meaningful programme, as well as on the syllabi of the modules. The relevant departmental postgraduate brochures must also be consulted.

### Admission requirements

An appropriate bachelor's degree, a BTech degree or equivalent qualification.

### Other programme-specific information

The remainder of the credits to be chosen from the modules for the BEngHons (Transportation Engineering) programme, as approved by the head of department, and after completion of the appropriate modules as listed. The modules CPB 410, CBI 410 and CSS 420 do not form part of the postgraduate block presentations. Individual arrangements have to be made with the relevant lecturer regarding attendance of lectures, study material, tests and assignments.

## Curriculum: Final year

Minimum credits: 128

### Core modules

#### Basic statistical methods 797 (SHC 797)

<b>Module credits</b>	24.00
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	40 Contact hours
<b>Language of tuition</b>	Module is presented in English
<b>Academic organisation</b>	Civil Eng
<b>Period of presentation</b>	Year

##### Module content

Basic mathematical methods. Algebra. Matrices and matrix algebra. Series expansions. Differentiation and integration. Probability theory. Graphic analysis. Discrete and continuous probability distributions. Moments and expectation. Statistical sampling and experimental design. Parameter estimation. Confidence intervals. Hypothesis testing. Regression analysis.

#### Basic pavements and transportation 787 (SGM 787)

<b>Module credits</b>	24.00
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	40 Contact hours
<b>Language of tuition</b>	Module is presented in English
<b>Academic organisation</b>	Civil Eng
<b>Period of presentation</b>	Year

##### Module content

Pavements: The geological cycle and origin of road building materials, soil testing and classification systems, compaction, stabilization, bitumen, introduction to pavements, principles of pavement design and management. Transportation: Introduction to traffic analysis techniques, capacity and level of service concepts, traffic signal design, road geometric design, transport demand models and road safety engineering.

### Elective modules

#### Transportation special 791 (SVC 791)

<b>Module credits</b>	24.00
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	40 Contact hours
<b>Language of tuition</b>	Module is presented in English

**Academic organisation** Civil Eng

**Period of presentation** Year

### Module content

A research term paper will be prepared.

Basic transportation relationships, land use, data collection and surveys. Four step transportation model, trip generation, trip distribution, modal split, trip assignment, advanced modelling approaches. Introduction to discrete choice models, econometrics, and stated preference analysis. Role of transport modelling in developmental context.

## Multimodal transport 788 (SVV 788)

**Module credits** 24.00

**Prerequisites** No prerequisites.

**Contact time** 40 Contact hours

**Language of tuition** Module is presented in English

**Academic organisation** Civil Eng

**Period of presentation** Year

### Module content

A research term paper will be prepared.

The role of public transport in cities; theory and principles of public transport network design, scheduling and operations; terminals; public transport modes; costs, fares and subsidies; contemporary issues and approaches to public transport restructuring and formalisation in South Africa, including Bus Rapid Transit (BRT). Planning and designing for non-motorised transport, including pedestrians, bicyclists, and animal-drawn transport.

## Geometric design and safety 791 (SVV 791)

**Module credits** 24.00

**Prerequisites** No prerequisites.

**Contact time** 40 Contact hours

**Language of tuition** Module is presented in English

**Academic organisation** Civil Eng

**Period of presentation** Year

### Module content

A research term paper will be prepared.

Rural/Peri-urban road networks: transportation policy, standards and safety, environmental quality, capacity, design, interchanges. Urban street networks: functional classes, town planning considerations, capacities, environment, safety, standards design, evaluation of road networks.

Traffic safety in global and national content, Road Safety Engineering and the assessment and interpretation of accident information, reactive and proactive identification of remedial measures, traffic safety strategies: 3E model and Haddon matrix.

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## Infrastructure management 790 (SSI 790)

<b>Module credits</b>	24.00
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	40 Contact hours
<b>Language of tuition</b>	Module is presented in English
<b>Academic organisation</b>	Civil Eng
<b>Period of presentation</b>	Year

### Module content

A research term paper will be prepared.

This module will cover the following topics: Asset Management principles, Maintenance Management principles, Maintenance strategies and philosophies, Condition based Maintenance, Reliability Centred Maintenance (RCM), Resource Management, Maintenance Management Systems, Total Productive Maintenance (TPM) and Risk Management. Maintenance management of the following disciplines will be studied in detail: Road infrastructure, Railway infrastructure, Airport infrastructure, Buildings and other structures, Water resources and water supply.

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The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.