



# University of Pretoria Yearbook 2024

## Calculus 258 (WTW 258)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	Faculty of Natural and Agricultural Sciences
<b>Module credits</b>	8.00
<b>NQF Level</b>	06
<b>Programmes</b>	<i>BEng (Chemical Engineering) 4-year programme</i> <i>BEng (Chemical Engineering) 5-year programme</i> <i>BEng (Civil Engineering) 4-year programme</i> <i>BEng (Civil Engineering) 5-year programme</i> <i>BEng (Computer Engineering) 4-year programme</i> <i>BEng (Computer Engineering) 5-year programme</i> <i>BEng (Electrical Engineering) 4-year programme</i> <i>BEng (Electrical Engineering) 5-year programme</i> <i>BEng (Electronic Engineering) 4-year programme</i> <i>BEng (Electronic Engineering) 5-year programme</i> <i>BEng (Industrial Engineering) 4-year programme</i> <i>BEng (Industrial Engineering) 5-year programme</i> <i>BEng (Mechanical Engineering) 4-year programme</i> <i>BEng (Mechanical Engineering) 5-year programme</i> <i>BEng (Metallurgical Engineering) 4-year programme</i> <i>BEng (Metallurgical Engineering) 5-year programme</i> <i>BEng (Mining Engineering) 4-year programme</i> <i>BEng (Mining Engineering) 5-year programme</i>
<b>Service modules</b>	Faculty of Engineering, Built Environment and Information Technology
<b>Prerequisites</b>	WTW 158 and WTW 164
<b>Contact time</b>	1 tutorial per week, 2 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mathematics and Applied Mathematics
<b>Period of presentation</b>	Semester 1



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## Module content

Calculus of multivariable functions, directional derivatives. Extrema. Multiple integrals, polar, cylindrical and spherical coordinates. Line integrals and the theorem of Green. Surface integrals and the theorems of Gauss and Stokes.

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### General Academic Regulations and Student Rules

The [General Academic Regulations \(G Regulations\)](#) and [General Student Rules](#) apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations. The G Regulations are updated annually and may be amended after the publication of this information.

### Regulations, degree requirements and information

The faculty regulations, information on and requirements for the degrees published here are subject to change and may be amended after the publication of this information.

### University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQSF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.