



# University of Pretoria Yearbook 2022

## Calculus 143 (WTW 143)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	8.00
<b>NQF Level</b>	05
<b>Programmes</b>	<a href="#">BEd (Intermediate Phase Teaching)</a> <a href="#">BSc extended programme - Mathematical Sciences</a> <a href="#">BSc extended programme - Physical Sciences</a>
<b>Service modules</b>	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
<b>Prerequisites</b>	BSc Extended programme and BEd programmes: WTW 135. BCom Extended programme students who wish to transfer to BCom Econometrics only: WTW 135
<b>Contact time</b>	1 tutorial per week, 3 lectures per week, Foundation Course
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mathematics and Applied Mathematics
<b>Period of presentation</b>	Semester 2

### Module content

Functions: exponential and logarithmic functions, natural exponential and logarithmic functions, exponential and logarithmic laws, exponential and logarithmic equations, compound interest. Limits: concept of a limit, finding limits numerically and graphically, finding limits algebraically, limit laws without proofs, squeeze theorem without proof, one-sided limits, infinite limits, limits at infinity, vertical, horizontal and slant asymptotes, substitution rule, continuity, laws for continuity without proofs. Differentiation: average and instantaneous change, definition of derivative, differentiation rules without proofs, derivatives of polynomials, chain rule for differentiation, derivatives of trigonometric, exponential and logarithmic functions, applications of differentiation: extreme values, critical numbers, monotone functions, first derivative test, optimisation.

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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.