

Calculus 1 B : Educational Targets

Module	block 1B, year 2019 - 2020
Version	V01: 6 November 2019

The student is able to:

1.	work with elementary properties of integrals and calculate integrals using different techniques, for functions of one variable
	<ul style="list-style-type: none">- formulate Riemann sums- formulate and use the Fundamental Theorem of Calculus- calculate integrals using anti-derivatives- calculate integrals using the substitution method- calculate integrals using the technique of integration by parts- calculate improper integrals using limits
2.	work with power series and Taylor series, for functions of one variable
	<ul style="list-style-type: none">- calculate the convergence radius by the ratio test- calculate Taylor series and polynomials
3.	solve linear differential equations
	<ul style="list-style-type: none">- solve first order equations using integrating factor- solve second order homogeneous equations with constant coefficients using the characteristic equation- solve first and second order equations with constant coefficients using the method of undetermined coefficients- solve initial / boundary value problems
4.	work with complex numbers
	<ul style="list-style-type: none">- plot (sets of) complex numbers in the plane- calculate absolute value and argument of a complex number to express the complex number in polar form- apply the complex arithmetic operations- find roots of a complex number and solve polynomial equations