



## MAT1222 Complex analysis

[30h+15h exercises] 5 credits

This course is taught in the 2nd semester

**Teacher(s):** Luc Haine  
**Language:** French  
**Level:** First cycle

### Aims

Complex analysis is a central subject in mathematics, that includes numerous applications in engineering and physical sciences. The course is dedicated to the study of the basic methods of the theory of analytic functions of a complex variable. It also aims to develop a geometrical intuition of the subject and proposes openings towards fields of applications.

### Main themes

- Complex numbers, entire convergent series, exponential and logarithmic functions, analytic functions.
- Holomorphic functions, Cauchy integral, Taylor and Laurent developments, singular points, calculus of residues.
- Conformal transformations, automorphisms of the plane, the open disk and the Riemann sphere.
- Sequences and series of holomorphic and meromorphic functions, elliptic functions.

**Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)**

Prerequisite : Mathematical analysis 1 and 2, or equivalent.

### Other credits in programs

<b>MATH12BA</b>	Deuxième année de bachelier en sciences mathématiques	(5 credits)	Mandatory
<b>PHYS12BA</b>	Deuxième année de bachelier en sciences physiques	(4 credits)	Mandatory