

COURSE TITLE

MATHEMATICS 1

(Bachelor in Chemistry)

Prof. Giuseppe Rao (e-mail: giuseppe.rao@unipa.it)

Classroom site: Viale delle Scienze Edificio 17 (Building 17) M. Ruccia Room

Credits (CFU) = **4+2**

COURSE PROGRAM

face-to-face lectures (4 CFU, 32 hrs)

classroom exercises (2 CFU, 24 hrs)

Elementary algebra. Equations and disequations. Polynomial functions. Rational functions. Trigonometric functions. Exponential functions. Logarithms.

Numerical successions and series. Limits and convergence.

Real functions defined in \mathbb{R} . Domain of existence. Limits. Derivatives.

Fundamental theorems: Bolzano-Weierstrass, Rolle, Lagrange, Cauchy. Applications to the study of real functions. Theorem of de l'Hospital. Asymptotes. Discontinuities of first and second type.

Indefinite and definite integrals. Integration methods. Theorems on integration. Introduction to differential equations.

G. Zwirner "Istituzioni di matematiche"

Marcellini-Sbordone "Analisi matematica 1"

Marcellini-Sbordone "Esercitazioni di Analisi matematica vol. 1"