

Course offered for the STAT PhD program starting from a.y. 2019/2020

TITLE	Electron microscopy and microanalysis for Earth, Environment, Cultural Heritage and Life Sciences applications
Main Lecturer	Laura Gaggero
Duration and Credits	16 hrs 4 CFU
Course description	The course aims at giving highlights on imaging at micro to nanoscale by Scanning electron microscopy (SEM) coupled with EDS microanalysis. The course aims at i) demonstrating the method on most common matrices and ii) at making the pupils able to start and carry out her/his own research. It will i) provide the physical principles of the method, ii) describe the differences and resolution of different Xray sources, iii) teach the energies to use on different matrices iv) teach how to prepare inorganic and organic samples before investigation v) how to carry out a leg of correlative investigations on 2D or 3D samples. <i>In situ</i> semi-quantitative and quantitative microanalysis will be demonstrated on geomaterials, together with elaboration of compositional data. Pre-requisites: the background derived from a scientific bachelor degree.
Course organization	4 hrs frontal lessons (in front of the SEM) 8 hrs practical lessons (preparation labs and SEM)
Teaching period	Mid January-February 2020 or October-December 2020