

## Syllabus 2020/21

Teacher (name and affiliation)	Davide Ballabio – (UNIMIB – DISAT)
Title	Machine learning for multivariate data analysis
Language	English
CFU	2
Hours	16
Program	<p>The course will introduce principles and theory of the main multivariate modelling for chemical data (chemometrics) and machine learning approaches. These can be useful for exploratory analysis, i.e. to find and visualise main patterns in complex data systems (Principal Component Analysis), as well as to relate a set of independent variables to a modelled qualitative or quantitative response (Support Vector Machines and Partial Least Squares).</p> <p>Objective of the program: This course is an introduction to different key aspects of advanced multivariate data analysis in science. This includes mathematical and statistical methods able to face, analyse and describe complex systems, that is, systems characterised and influenced by several factors (variables). It is thus addressed to PhD students who want to acquire or intensify knowledge on multivariate analysis from different disciplines (Chemistry, Physics, Biology, Geology, Environmental Sciences, etc.).</p> <p>The intended learning outcomes will be the following: understanding of complex data structure, learning of the principles and operating conditions of the main multivariate approaches, capability to independently apply suitable solutions to multivariate problems, choice of coherent and appropriate multivariate methods to deal with a specific issue.</p>
Evaluation: YES/NO	No
Calendar	2 <sup>nd</sup> semester