

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

TITLE	Advanced Crystallography
Lecturer	Alberto Martinelli
Duration and Credits	8 hours – 2 CFU
Course description	<p>The aim of the course is to provide insights about some relevant aspects of crystallography from the conceptual point of view, as well as introduce some advanced experimental methods available at the international large scale facilities.</p> <p>Starting from an in depth analysis of the information available in the International Tables of Crystallography, the symmetry relationships between crystal structures will be described by introducing the group theory, pointing also to some aspects of solid state transformations driven by the condensation of lattice vibrations (soft modes). The concepts of spontaneous structural strain as well as other tensor properties of crystals will be introduced.</p> <p>Application of powder neutron diffraction and pair distribution function analysis to mineral structures will be introduced.</p> <p>A background about the fundamental concepts of crystallography is a required prerequisite.</p>
Course organization	This course consists of frontal lessons.
Teaching period	January - February 2020