

Teacher in charge (if defined) Teaching Hours Number of ECTS Teaching Hours Number of ECTS Seredits allocated Course period Course delivery method Language of instruction Mandatory attendance Course unit contents In the first part of the course the main features of nuclear reactions with heavy ions (elastic scattering, inelastic scattering, Coulomb excitation, break-up, transfer, deep inelastic) will be discussed, in connection with the structural properties of colliding nuclei. Special attention will be given to reactions involving weakly-bound nuclei far from stability and close to the drip lines. The second part will be devoted to few- and multi-nucleon transfer reactions between heavy ions, sub-barrier fision processes from both experimental and theoretical points of view, and recent developments concerning the hindrance phenomenon in connection with the Pauli exclusion principle. The rote of the coupling to the internal degrees of freedom of the interacting nuclei will be emphasized, as well as the features of reactions involving andiacative ion beams. Heavy-ion reactions relevant for astrophysics and related topics, will be explicitly treated. Learning goals The student will get a detailed view of several aspects of Nuclear Reactions Dynamics and Nuclear Structure studied using Heavy-Ion beams. Experimental tools and methods will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and deviced methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical methods and models will be presented and discussed. Theoretical metho		
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Teaching Hours 24		Alberto Stefanini (LNL) – Edoardo Lanza (INEN Catania)
Number of ECTS credits allocated 3	,	Anocho Stefannii (EAL) – Edoardo Editza (IIAI IA Catalila)
Course period	Teaching Hours	24
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