



SIMULATION OF PARTICLE DETECTORS

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| Enrollment year | 2018/2019 |
| Academic year | 2018/2019 |
| Regulations | DM270 |
| Academic discipline | FIS/01 (EXPERIMENTAL PHYSICS) |
| Department | DEPARTMENT OF PHYSICS |
| Course | |
| Curriculum | Fisica teorica |
| Year of study | 1° |
| Period | 1st semester (01/10/2018 - 18/01/2019) |
| ECTS | 6 |
| Lesson hours | 48 lesson hours |
| Language | Italian |
| Activity type | ORAL TEST |
| Teacher | RIMOLDI ADELE (titolare) - 6 ECTS |
| Prerequisites | Basic background from completed courses in object-oriented programming |
| Learning outcomes | Object Oriented programming using a simulation tool for particle detector description and more. This course covers a wide range of applications that can form a solid background to build a self proposed example for the description of an experiment in physics and the detector able to show the physics involved |
| Course contents | This course is addressed to students interested in developing simulation tools in many branches of subnuclear physics, astrophysics or applied medicine physics. Goal is also be able to manage big OO programs and create new applications by implementing new code by choosing a personal path of development in a friend field of physics. |
| Teaching methods | Oral lessons with additional seminars on particle detectors and |

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| | programming sessions |
| Reccomended or required readings | <p>a) Koenig, Moo, Accelerated C++, Addison Wesley</p> <p>b) Adele Rimoldi, Metodi informatici della fisica, Pavia University Press</p> <p>c) Adele Rimoldi, La simulazione dei rivelatori di particelle, Pavia University Press, Didattica e Formazione</p> |
| Assessment methods | Oral examination. Each student should provide a personal C++ project in a selected field of interest or a personal development of a Geant4 example found in the literature. |
| Further information | Oral examination. Each student should provide a personal C++ project in a selected field of interest or a personal development of a Geant4 example found in the literature. |
| Sustainable development goals - Agenda 2030 | \$ibl legenda sviluppo sostenibile |