The Department of Physics of the University of Rome "Tor Vergata" organizes and supports the PHD in physics with top level scientific scientists and international collaborations on the following scientific areas:
- High energy physics, nuclear physics and theory of fundamental interactions.
- Physics of condensed matter (solid, liquid, soft, disordered systems, ..)
- Computational physics and physics of complex systems.
- Astrophysics and space physics.
- Materials science, nanoscience and applied physics.

Beside that, there is a special curriculum named HIGH PERFORMANCE COMPUTING.

Research activities are performed using the Department facilities (laboratories,computational resources,..) and in collaboration with other national and international research centers (CERN, INFN, CNR). Within the phd programs, students are encouraged and financially supported to partecipate and disseminate their scientific results at international workshops and to promote new scientific challenges.

Student research programs are subject to Phd Committee approval and it is performed along three years. Research programs are evaluated in terms of scientific quality, feasibility and risk/gain expectations.

The first year is mostly dedicated to education and training courses in specific topics. Students are free to chose among institutional courses, international schools as well as national training courses provided by research agencies. Each student should provide a detailed program which is evaluated by the Phd Committee.

The second and third years are dedicated to research activity supervised by a scientific responsible (a tutor) designated for each student. At the end of the second year, each student illustrates in a formal seminar the scientific results and/or activities and the possible future outcomes.

At the end of the third year, the doctoral thesis are discussed in front of the Phd committee. Upon approval, the thesis are assessed by two national and/or international referees as well as by the scientific supervisors. The final examination is done in front of a jury appointed by the university Rector.

Students belonging to HPC curriculum are insider the STIMULATE initiative which part of the European Community Joint Doctorate program.

PRESENTAZIONE SITNTETICA DELL'ATTIVITA' FORMATIVA E DI RICERCA PREVISTA PER I PROSSIMI TRE ANNI PER I DOTTORANDI IN LINGUA INGLESE (MAX 1 PAGINA A4)

LANGUAGE: Most courses and all seminars are in english as well as the final PhD thesis and dissertation.

INFORMATION TECHNOLOGY: Each PhD student is strongly motivated in using high end technology infrastructure with particular emphasis in large scale computing and data analysis. This is particularly true for HPC PhD students

with need to handle modern BIG-DATA technologies. A particular emphasis will be given to use new Machine Learning approach in data analysis.
RESEARCH MANAGEMENT, KNOWLEDGE AND FINANCING: Each PhD student is supposed to perform his own research at the frontier of open problems in Physics. Students are active members of Department research group learning how to manage, disseminate the research and how to participate in open competition for financial support.

RESULTS VALORIZATIONS AND INTELLECTUAL PROPERTY: Student results, obtained under the supervision and advice of their tutors, are published on top scientific journals. Students are motivated to participate and disseminate their results in international workshop and conferences. PhD thesis are published on the University Web Site and the results are discussed in Department seminars.