UNIVERSITÀ
DEGLI STUDI DI TRIESTE

Sezione Ricerca e Dottorati

Ripartizione Dottorati

LAST REVISED N 29/11/2011

DOCTORAL SCHOOL IN PHYSICS

GENERAL DESCRIPTION

SUBJECT AREAS COVERED BY THE SCHOOL:
- main area: FIS/01
- other areas: FIS/02, FIS/03, FIS/04, FIS/05, FIS/07

RESEARCH FIELDS:
1. Astrophysics
2. Medical Physics
3. Subnuclear and Nuclear Physics
4. Theoretical Physics
5. Condensed Matter Physics

ORGANIZING DEPARTMENT: Dip. di Fisica
OTHER PARTICIPATING INSTITUTIONS (Italian):
- INAF-Istituto Nazionale di Astrofisica
- Istituto Nazionale di Fisica Nucleare
- ICTP- The Abdus Salam International Centre for Theoretical Physics
- Sincrotrone Trieste S.C.p.A.
- Laboratorio Nazionale TASC –IOM CNR

DURATION: 3 years
MAXIMUM NUMBER OF MONTHS TO BE SPENT ABROAD: 18
OFFICIAL LANGUAGE OF THE SCHOOL: Italian

ADMISSION INFORMATION

NUMBER OF PLACES AVAILABLE: **14**
- SCHOLARSHIPS: ..... 7(*)

  FUNDING BODY/IES:
  - [cod M/1-4] Università degli Studi di Trieste 4
  - [cod D/6-7] Dip. di Fisica funded *by* INFN (Project title: *"Theoretical and experimental physics subjects of INFN interest"*) 2
    [cod D/11] Dip. di Fisica (finalizzata al Progetto *"Themes of Environmental radioactivity"*) 1

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(*) The scholarships below:

- [cod M/5] Università degli Studi di Trieste 1
- [cod D/8] Dip. di Fisica funded by Sincrotrone Trieste (Project title: *"Experiments with synchrotron radiation"*)..... 1
- [cod D/9] Dip. di Fisica funded by Sincrotrone Trieste (Project title: *"Development of novel free electron laser radiation sources"*) 1
- [cod D/10] Dip. di Fisica funded by Istituto Nazionale di Astrofisica - INAF (Project title: *"Observational astrophysics"*) 1

are actually reserved to non-EU citizens (please check ATTACHMENT 3b – Physics); however some of them may become available if there are vacancies. Updates on the availability/unavailability of these scholarships will be published on http://www2.units.it/dott/en/ - Admission procedure immediately after the selection procedure has been completed.

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Candidates who accept an earmarked scholarship are committed to the pre-assigned topic

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Candidates have to list the scholarships they apply for by specifying the corresponding codes in the "QUALIFICATION EVALUATION FORM". Candidates may also apply for the scholarships reserved to non-EU citizens who are resident outside the EU and have been awarded a degree outside the EU, if there are vacancies. If extra earmarked scholarships become available after candidates have completed their application, they can modify their list within the deadline for receiving certificates.

NON-FUNDED PLACES:

- holders of a research grant (see Art. 1.1 - Requirements) **2**
- grant-holders funded by the Italian Ministry of Foreign Affairs sitting the entrance examination in the country of origin **1**
- non-EU citizens residing abroad with ministerial authorisation and permitted to sit the entrance examination in the country of origin **1**

ACADEMIC QUALIFICATION REQUIRED: see Announcement (art. 1.1 - Requirements)
DEADLINE FOR COMPLETION OF DEGREE: **21.11.2011**
ADMISSION REQUIREMENTS: qualifications + written examination + oral interview.
FINAL SCORE: the final score is based on the sum total of marks obtained in the written examination and interview plus the points given for qualifications and publications: 120
MINIMUM FINAL SCORE REQUIRED: 80/120

- MAXIMUM NUMBER OF POINTS AWARDED FOR QUALIFICATIONS + PUBLICATIONS: 20

QUALIFICATIONS REQUIRED/RELATIVE WEIGHT:

- Art. 11 Rules for Doctorates: all candidates are required to present the following documents, regardless of whether or not a score is assigned to them (see below):
  a. a detailed curriculum vitae et studiorum plus degree transcript (list of exams + exam scores + degree score): 8/20
  b. a copy of the Master's degree thesis: 4/20
     For students with a degree awarded by a non-Italian university, an abstract of the thesis in English or Italian is sufficient.

  as well as

  1. 4/20:
     1.1. Two letters of presentation from scholars/researchers acquainted with the candidate;
     1.2. A letter of self-presentation where the candidate outlines his/her research activity;
  2. Publications (if any): 4/20.
- Qualifications Evaluation Form (unless this form is presented, qualifications and publications CANNOT be assessed by the Examining Board)

Please NOTE: The qualifications and publications submitted may be requested by the candidates or by proxies carrying a photocopy of the candidate's id 60 days after the merit lists have been published at Dipartimento di Fisica via Valerio, 2 - Servizio Ricerca e Formazione room 108 first floor scuoladifisica@units.it . All the remaining documents will be destroyed 120 days after the merit lists have been published.
MINIMUM SCORE REQUIRED FOR QUALIFICATIONS/PUBLICATIONS: 10/20

- ORAL EXAMINATION MARK OUT OF: 50
  MINIMUM SCORE REQUIRED FOR INTERVIEW: 35/50
- WRITTEN EXAMINATION MARK OUT OF: 50
  MINIMUM SCORE REQUIRED IN WRITTEN EXAMINATION: 35/50

ABSOLUTE DEADLINE FOR RECEIVING CERTIFICATES: **22.11.2011**
ADDRESSES TO WHICH CERTIFICATES SHOULD BE SENT: to be handed in during the written test.
EXAMINATION SCHEDULE:

- WRITTEN EXAMINATION: **22.11.2011 at 09.00 a.m.** at Dipartimento di Fisica, Via Valerio, 2 – TRIESTE
  POSSIBLE ALTERNATIVE LANGUAGE TO ITALIAN FOR THE WRITTEN EXAMINATION: English
- INTERVIEW: **24.11.2011 at 09.00 a.m.** at Dipartimento di Fisica, Via Valerio, 2 – TRIESTE
  ALTERNATIVE LANGUAGE TO ITALIAN FOR THE INTERVIEW: English

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CEFR LEVEL: B2

CONTACT INFORMATION

DIRECTOR OF THE SCHOOL: Prof. Paolo Camerini - Dipartimento di Fisica - Università degli Studi di Trieste - tel.040/558.3379; fax 040/558.3350 e-mail camerini@trieste.infn.it

VICE-DIRECTOR: Prof. Gaetano Senatore - Dipartimento di Fisica teorica - Università degli Studi di Trieste - tel. 040/2240278 fax 040/224601 e-mail gaetano.senatore@ts.infn.it

WEB SITE: http://physics.units.it/Ricerca/dottfisica.php

SCIENTIFIC PROJECT: The PhD school in Physics of Trieste is integrated in a research and higher education system which is probably unique in Italy. The physics research activities spectrum at the Trieste University is very broad.

Besides a relevant theoretical and computational research activity, there is a wide community of experimental phisicists belonging both to the university and to public and private research bodies who are actively engaged in fields ranging from fundamental nuclear and subnuclear physics to the physics of electronic devices and new materials, from the development of new machines (see e.g. the free electron laser source Fermi at Elettra) to medical physics, from nanotechnology to astroparticle physics and astronomy (both theoretical and experimental).

The synergy between the experimental activities and the theoretical and computational ones at the University, as well as with those in the laboratories present in town and at the Area di Ricerca (Area Science Park) and the ongoing collaboration with SISSA (International School for Avdanced Studies) and the International Center for Theoretical Physics (ICTP) offer the students of the PhD School of Physics of Trieste a very rich and stimulating environment which is full of opportunities and with a range of possible research activities to join which is rare to find elsewhere.

An incomplete list can mention the local Syncrothron (Elettra), the free electron laser source (Fermi), the Trieste laboratories of the National Nuclear Physics Institute, the local section of the National Astrophysics Institute and the Observatory, the research and development lab "Istituto officina dei materiali" (CNR). In addition one has to consider the access to national and international laboratories where our reserch groups work, often with coordination responsibilities. Among these there is CERN (Geneva, CH) laboratory, the European Southern Observatory (ESO, Chile),the Fermilab laboratory (Illinois, USA).

EDUCATIONAL AIMS AND RESEARCH TOPICS: Graduate students in physics are actively engaged in research at the forefront of both fundamental and applied physics. The students can choose to work in Astrophysics, Condensed Matter Physics, Medical Physics, Sub-nuclear and Nuclear Physics, Theoretical physics. The goal of the Graduate School is to train flexible professionals who will easily find a job in different fields, including, and primarily, scientific research. Besides being individually trained in a specific research field, the students attend institutional curricular courses as well as courses focused on the topic of their doctoral theses for a total of at least 80 hours of lessons. They will also attend at least two national or international schools. Graduate students are encouraged as well to attend national and international conferences in order to present the results of their research. A list of available research topics is found at: http://physics.units.it/Ricerca/ArgomentiDottorato.htm . Some of the scholarships carry a title. The awardees of such scholarships are bound to perform research in a pre-assigned area/topic. Info on research topics and people to contact for further details can be found in http://physics.units.it/Ricerca/dottfisica.php .