DOCTORAL SCHOOL IN
ENVIRONMENTAL AND INDUSTRIAL FLUID MECHANICS

GENERAL DESCRIPTION

SUBJECT AREAS:
- main area: ICAR/01
- other areas: INF/01, ING-IND/29, FIS/02, ING-IND/10, MAT/07, MAT/05, MAT/08, FIS/06; ING-IND/06

FIELDS OF RESEARCH:
1. Three-dimensional turbolence
2. Fluid mechanics in biological systems
3. Fluid mechanics in industrial processes and technological systems
4. Mathematical methods and modeling in fluid mechanics
5. Environmental large scale flows

ORGANIZING DEPARTMENT: Dip. di Matematica e Informatica

FOREIGN PARTNER UNIVERSITIES
- Università di Nova Gorica (SLO)
- Università di Zagabria (HR)

ITALIAN PARTICIPATING BODIES:
- OSMER ARPA-FVG
- Istituto Nazionale di Oceanografia e Geofisica Sperimentale (INOGS)
- Istituto Scienze Marine (ISMAR-CNR)
- International Center for Theoretical Physics (ICTP)

PROGRAMME LENGTH IN YEARS: 3
MAXIMUM PERIOD OF STUDY ABROAD IN MONTHS: 12
OFFICIAL LANGUAGE OF THE SCHOOL: English

ADMISSION INFORMATION AND REQUIREMENTS

PLACES AVAILABLE: **7**
SCHOLARSHIPS: 6
FUNDING BODIES:
- Università degli Studi di Trieste 3
- Dip. di Matematica e Informatica su fondi ICTP Trieste 1
  Please note that this scholarship does not ensure extra funding for periods abroad.
- Dip. di Matematica e Informatica su fondi OGS (finalizzata al Progetto "*Argomento di ricerca relativo ad Oceanografia Fisica*" – tutore ricercatore OGS) 1
- MIUR "Giovani Ricercatori" (finalizzata al Progetto "*Flussi multifase per applicazioni industriali nell'ambito del risparmio energetico*" – tutore Prof. V. Armenio) fondi provenienti dal XXIV ciclo 1
  Please note that this scholarship does not ensure extra funding for periods abroad.

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

NON-FUNDED PLACES
grant-holders funded by the Italian Ministry of Foreign Affairs permitted to sit the entrance examination in the country of origin **1**

ACADEMIC QUALIFICATION REQUIRED: see Announcement (art. 1-Requirements)
DEADLINE FOR COMPLETION OF DEGREE BEFORE APPLICATION: 31.10.2009
ADMISSION REQUIREMENTS: qualifications.
FINAL SCORE: 100/100
FINAL SCORE (MINIMUM REQUIRED): 60/100
Art. 11 University Rules for Doctorates:
a. a detailed curriculum vitae et studiorum : 10
b. a copy of the master's degree thesis or an abstract in English or in Italian.: 40
   A detailed research proposal may be required.

as well as
1. academic qualification with the transcript of the exams and scores, plus the degree score : 20/100
2. letters of recommendation: 10/100
3. the motivations for enrolling to the programme: 5/100
4. Certificate GRE: 5/100
5. Certificate TOEFL: 5/100
6. Others: 5/100

DEADLINE FOR RECEIVING CERTIFICATES / PUBLICATIONS: 07.11.2009
ADDRESS TO WHICH CERTIFICATES / PUBLICATIONS SHOULD BE SENT: Dipartimento di Matematica e Informatica.

Appplicants who have completed their degree within the deadline for applications are allowed to upload their certificates / publications through a web interface instead of sending them in hard copy.

CONTACT INFORMATION

DIRECTOR OF THE SCHOOL: Prof. Vincenzo Armenio - Dipartimento di Ingegneria Civile e Ambientale- Università degli Studi di Trieste - tel. 040/5583472 fax 040/572082 e-mail armenio@dica.units.it

VICE-DIRECTOR: Prof. Alfredo Bellen - Dipartimento di Matematica e Informatica - Università degli Studi di Trieste - tel.040/558.2608; fax 040/558.2636 e-mail bellen@units.it

WEB SITE: http://Poseidon.ogs.trieste.it/phd/fluid

OVERVIEW: This program is specifically interested in the processes involving motion of a fluid, and the related properties of advection, dispersion and mixing within the fluid itself. In evoking fluid mechanics, one has to think in a very broad sense, including large-scale and small-scale processes, transport phenomena at the relevant scales, interaction between a dissolved phase and the carrying fluid, and the possible effect of mixing and biological aspects. Moreover, the extension of fluid dynamics to applicative purposes often involves interaction with nearby physical fields. Thermodynamics and microphysics of the large-scale processes, as well as interaction between fluids and solid elements are therefore part of the program.

In order to be more specific, and following the expertise of the participants to the program, the following research fields are considered:

1. Environmental large scale flows and hydraulics;
2. Three-dimensional turbulence;
3. Fluid mechanics in biological systems.
4. Fluid mechanics in industrial processes and technological systems
5. Mathematical methods and modeling in fluid mechanics.

The above mentioned Items cover the basic fluid mechanics, principal applications, and methods, paying particular attention to environmental and industrial applications