



UNIVERSITÀ  
DEGLI STUDI DI TRIESTE

Rettorato e Direzione Generale  
Sezione Ricerca e Dottorati  
Ripartizione Dottorati

LAST REVISED 19/08/2014

**PhD IN  
EARTH SCIENCE AND FLUID MECHANICS**

**NOTE:** This attachment provides only partial information. Exhaustive information, including how to register for the selection, is published in the Admission Announcement posted in the web page <http://www2.units.it/dott/en/> >> Admission Announcement.

<b>Deadline for online application</b>	<b>21 August 2014 11:30 a.m. (ITALIAN TIME)</b>
<b>Deadline for paying the exam registration (application) fee</b>	<b>21 August 2014</b>
<b>Deadline for submitting qualifications and publications plus the form <i>Integration to the Application</i></b>	<b>05 September 2014 11:30 a.m. (ITALIAN TIME)</b>
<b>Deadline for completion of the degree required for admission</b>	<b>31 October 2014</b>
<b>Oral examination/interview</b>	<b>17 and 18 September 2014 10:00 a.m. (ITALIAN TIME)</b>
<b>Documents required</b> <i>(for further details see below "Weighting of the qualifications")</i>	<ol style="list-style-type: none"><li>1. Form "Integration to the application";</li><li>2. The following documents:<ol style="list-style-type: none"><li>a. detailed <i>curriculum vitae et studiorum</i>, with a special focus on pre-PhD activities, including a list of exams taken and marks obtained</li><li>b. full text or abstract of the degree thesis (Italian or English version)</li><li>c. publications</li></ol></li></ol>



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IN BRIEF		
<i>Lines of research</i>	1	Environmental fluid mechanics, fluid mechanics in industrial and technological processes, and in biological systems
	2	Environmental fluid mechanics, fluid mechanics in industrial and technological processes, and in biological systems
	3	Mathematical methods and modeling in fluid mechanics and in geophysics, differential equations and inverse problems
<i>Administrative location</i>		University of Trieste
<i>Organizing Department</i>		Department of Mathematics and Geosciences
<i>Partner University Department</i>		Department of Engineering and Architecture
<i>Duration</i>		3 years
<i>Maximum number of months to be spent abroad by each PhD student</i>		18
<i>Official language</i>		english
<i>Subject Area</i>	<i>main</i>	--
	<i>others</i>	04, 08/A, 01
<i>Macro Research Fields</i>	<i>main</i>	04/A
	<i>others</i>	01/A, 08/A
<i>Scientific Disciplinary Sector</i>	<i>main</i>	--
	<i>others</i>	MAT/05, MAT/08; ICAR/01, ICAR/02; GEO/02, GEO/03, GEO/06, GEO/07; GEO/10, GEO/11, GEO/12
<i>Domain European Research Council</i>		PE
<i>ERC Panels</i>	<i>main</i>	PE10
	<i>others</i>	PE1; PE8
<i>Erasmus Subject Area Codes</i>	<i>main</i>	07.4
	<i>others</i>	06.4, 06.9, 07.3, 07.7, 11.1, 11.9, 13.8
Information on the codes can be found online at: <a href="http://www2.units.it/dott/en/?file=DottBandi.inc">http://www2.units.it/dott/en/?file=DottBandi.inc</a> >> Admission Announcement and relative attachments (...) >> <b>"Labelling"</b> (file.xls)		



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## PLACES, SCHOLARSHIPS, RESEARCH GRANTS AVAILABLE

<i>Total number of places available (excluding R/2 R/3 – see below)</i>		<b>9</b>	
<b>LAST UPDATED ON 19.08.2014:</b> 9 places			
<i>without scholarship</i>		<b>0</b>	
<i>with scholarship</i>		<b>9</b>	<b>N.B.:</b> Candidates who accept an earmarked scholarship are committed to the pre-assigned topic.
<b>LAST UPDATED ON 19.08.2014:</b> 9 places with scholarship			
D/1	1	Department of Mathematics and Geosciences funded by INOGS (Project title "GLACIAL SEDIMENT INPUT AND OCEAN CIRCULATION")	
D/2	1	Department of Mathematics and Geosciences funded by INOGS (Project title "MODELLING OF MARINE SYSTEMS")	
D/3	1	Department of Mathematics and Geosciences funded by ICTP (Project title "Fluid Mechanics")	
MD/4	1	Università degli Studi di Trieste + Department of Mathematics and Geosciences funded by ENEA (Project title "Multiscale modeling of coastal hydrodynamic processes: application of the LARGE-EDDY-SIMULATION (LES)")	
M/5	1	University of Trieste	
G/6	1	MIUR "Progetto Giovani Ricercatori"	
UST/7	1	University of Trieste funded by Commissariato del Governo nella Regione Friuli Venezia Giulia "Fondo Trieste" (earmarked for a pre-assigned research project with a significant impact on the area)	
D/8	1	<b>LAST UPDATED ON 06.08.2014:</b> scholarship [cod D/8] Department of Mathematics and Geosciences funded by INOGS (Project title "Seismotectonic of the Gulf of Trieste (Northern Adriatic sea)")	
D/9	1	<b>LAST UPDATED ON 19.08.2014:</b> scholarship [cod D/9] Department of Mathematics and Geosciences funded by INOGS (Project title "Experimental studies of oceanic circulation")	
<i>Reserved places with scholarships/research grants available for graduates at universities abroad [R/1] with indication of the code, total number and funding body</i>	R/1	0	--
<i>Reserved places with no PhD scholarship provided</i>	R/2	<b>0</b>	Scholarships funded by foreign Countries
	R/3	<b>0</b>	Scholarships funded by international mobility programmes
<p>A PhD place is reserved for a candidate selected for the SEDITRANS (SEDiment TRANSport in fluvial estuarine and coastal environments) Project, funded by the EU Marie Curie FP7-PEOPLE-ITN programme, where the University of Trieste is a partner institution (cf art. 12.7a of the Regulations for PhD Courses at the University of Trieste, issued with Rector's Decree dated 9 July 2013).</p> <p>The position opening is posted on the EU website EURAXESS and on the project website SEDITRANS (<a href="http://www.seditrans.civil.upatras.gr/">http://www.seditrans.civil.upatras.gr/</a>), as requested in the project.</p>			



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<i>PhD students from foreign universities may be admitted with a joint supervision of their thesis</i>	yes
<i>Erasmus Mundus PhD students from foreign universities may be admitted on a joint supervision of their thesis</i>	yes
<i>Erasmus Mundus PhD students from foreign universities may be admitted on international mobility programmes</i>	yes



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THE SELECTION PROCEDURE										
<p><i>Academic qualification required: see Announcement: see Announcement (art. 2 - Requirements)</i></p>	<p>Italian Master's Degree "Laurea Specialistica/Magistrale" or Degree awarded prior to approval of Ministerial Decree D.M. n. 509 of 3 November 1999, updated with D.M. n. 270 of 22 October 2004, n. 270, (or a qualification corresponding to a Master's -second level- degree)</p> <p>An equivalent foreign academic qualification awarded abroad</p> <p>An academic qualification awarded abroad which is considered to be equivalent to the Italian degree that allows the holder to undertake PhD studies for duration, level and area of study</p>									
<p><i>Deadline for completion of the Degree required for admission</i></p>	<p><b>31 October 2014</b></p>									
<p><i>Assessment criteria</i></p>	<p>qualifications + oral examination/interview</p>									
<p><i>Maximum final score (the final score is based on the sum total of marks obtained in the interview plus the points given for qualifications and publications)</i></p>	<p>100/100</p>									
<p><i>Minimum final score required for eligibility</i></p>	<p>70/100</p>									
<p><i>Maximum score awarded for qualifications+publications</i></p>	<p>70/70</p>									
<p><i>Minimum score required for qualifications+publications</i></p>	<p>50/70</p>									
<p><b>Weighting of the qualifications</b> <b>Unless the form "Integration to application" is presented, qualifications and publications cannot be assessed by the Examining Board. The form is available at:</b> <a href="http://www2.units.it/dott/en/?file=DottBandi.inc&amp;cod=1010">http://www2.units.it/dott/en/?file=DottBandi.inc&amp;cod=1010</a></p>	<table border="0"> <tr> <td style="vertical-align: top;"> <p>a</p> </td> <td> <p>detailed <i>curriculum vitae et studiorum</i>, with a special focus on pre-PhD activities, including a list of exams taken and marks obtained</p> </td> <td style="text-align: right; vertical-align: top;"> <p>20/70</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p>b</p> </td> <td> <p>full text or abstract of the degree thesis (Italian or English version)</p> </td> <td style="text-align: right; vertical-align: top;"> <p>30/70</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p>c</p> </td> <td> <p>publications</p> </td> <td style="text-align: right; vertical-align: top;"> <p>20/70</p> </td> </tr> </table>	<p>a</p>	<p>detailed <i>curriculum vitae et studiorum</i>, with a special focus on pre-PhD activities, including a list of exams taken and marks obtained</p>	<p>20/70</p>	<p>b</p>	<p>full text or abstract of the degree thesis (Italian or English version)</p>	<p>30/70</p>	<p>c</p>	<p>publications</p>	<p>20/70</p>
<p>a</p>	<p>detailed <i>curriculum vitae et studiorum</i>, with a special focus on pre-PhD activities, including a list of exams taken and marks obtained</p>	<p>20/70</p>								
<p>b</p>	<p>full text or abstract of the degree thesis (Italian or English version)</p>	<p>30/70</p>								
<p>c</p>	<p>publications</p>	<p>20/70</p>								
<p>If the degree score is not out of 110 it will be converted. Undergraduates will be assigned a score out of 110 based on the average of their exams (provided they submit an official transcript)</p>										
<p><i>Oral examination/interview score out of – maximum score</i></p>	<p>30/30</p>									
<p><i>Oral examination/interview score out of – minimum score</i></p>	<p>20/30</p>									
<p><i>Deadline for submitting qualifications and publications</i></p>	<p><b>05 September 2014</b></p>									
<p><i>Qualifications and publications shall be submitted:</i> <i>(art. 5.1.4 of the PhD Announcement)</i></p>	<p><b>- as an attachment to the online admission application (upload), deadline 11:30 am Italian time</b></p> <p>only for publications that are voluminous or not available in electronic format, as long as they are listed in the form "Integration to application" (digital format preferable): only paper version by post or in person to Department of Mathematics and Geosciences, c/o sig.ra Tiziana Varcounig, via Weiss 2 - 34127 Trieste, Italia, from Mondays to Fridays from 10:00 to 12:00 am (ITALIAN TIME).</p>									



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<i>Examination schedule</i>	<i>Oral examination/interview</i>	<b>17 and 18 September 2014 at 10.00 am (ITALIAN TIME)</b> , University of Trieste – Department of Mathematics and Geosciences - Mathematics – workshop room ("Aula Seminari"), 3. floor - via Valerio 12/1 - Trieste
	<i>Language(s) of the interview</i>	English
	<i>Language(s) tested in the oral examination/interview</i>	English
	<i>CEFR (Common European Framework of Reference for Languages)</i>	B2
	<i>Videoconference interview</i>	Upon request from the candidate, the interview may be carried out through videoconference, with the same schedule (check 6.2 Admission Announcement)

<b>WHO'S WHO</b>	
<i>Chair</i>	Prof. Vincenzo Armenio - Department of Engineering and Architecture – University of Trieste – phone : 040/5583472 fax 040/572082 e-mail <a href="mailto:armenio@dica.units.it">armenio@dica.units.it</a>
<i>Vice</i>	Prof. Pierpaolo Omari – Department of Mathematics and Geosciences – University of Trieste – phone : 040/5582619 - e-mail <a href="mailto:omari@univ.trieste.it">omari@univ.trieste.it</a>
<i>Web site</i>	<a href="http://www.phdfuidmechanics.units.it">http://www.phdfuidmechanics.units.it</a>
<i>Learning outcomes</i>	<p>This PhD course aims to the advanced training of students in the field of earth sciences, fluid mechanics and applied mathematics. It promotes theoretical and applicative formation of students through the investigation of scientific themes developed by the research groups belonging to the involved departments and through international collaborations with qualified foreign structures.</p> <p>With regard to fluid mechanics, the processes that involve the study of the motion of fluids and their transport properties, dispersion and mixing in environmental and industrial settings, are in particular addressed, as well as their interaction with the solid elements.</p> <p>In the field of earth sciences, the main objective is the transfer of knowledge on advanced methods of investigation with applications to the study of composition, structure, stratigraphy and evolution of our planet, from the close surface up to the deep structures and characteristics at the global scale.</p> <p>The fundamental laws, upon which these disciplines rely, are generally expressed by differential equations of considerable complexity, the study of which requires the application of advanced mathematical methods and represents a research field of great theoretical and practical importance and relevance. The mathematics is thus a central part of the program.</p>
<i>Job placement opportunities</i>	<p>This PhD program is designed to prepare students to pursue a variety of careers in research, teaching and industrial use of high technologies in the fields of earth science, fluid mechanics and applied mathematics.</p> <p>In the course of their doctoral studies, students will be in touch with different realities, local and international, and will get a considerable experience in both theoretical and applied problems that originate in the disciplines mentioned above. In addition, they will develop familiarity and competence in using the most advanced tools for the analysis of complex physical systems, which will be of great use for their future activity in public or private research centers, or in companies with high technological content.</p> <p>The EIFM PhD School, of which this course is the development, has collaborated, besides INOGS and ICTP, with various research or services institutions, like ARPA-FVG , ISMAR-CNR , ENEA, as well as with industries present on the territory, like</p>



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	<p>Electrolux. The scholarships funded by these institutions come from their need to acquire highly specialized people in the themes addressed in this doctoral program. Part of the students of this course will therefore obtain, as a natural outlet, post-doctoral fellows or working positions within the institutions themselves.</p>
<i>Main cooperating international Universities and Research Institutions</i>	<ol style="list-style-type: none"><li>1 Princeton University, U.S.A.</li><li>2 Universit Libre de Bruxelles, Belgio</li><li>3 Technische Universiteit Eindhoven, Paesi Bassi</li><li>4 University of California Irvine, U.S.A.</li><li>5 École Polytechnique Fédérale de Lausanne, Svizzera</li></ol>