



**PUBLIC COMPETITIVE EXAMINATION FOR ADMISSION TO PhD PROGRAMMES  
32<sup>nd</sup> CYCLE  
RE-OPENING RECTORAL DECREE NO. 973 OF THE 29/07/2016**

**THE RECTOR**

- In view of** the Statute of Autonomy of the University of Calabria;
- In view of** the University Regulations;
- In view of** the University Didactic Regulations;
- In view of** the Regulations for the Administration and Accounting;
- In view of** the Regulation of the Doctoral Programmes of Research of the University of Calabria, issued by Rector's Decree No. 1330 of 3 July 2013, and new additions and/or modifications;
- In view of** the Decree of the President of the Republic N° 445 of 28 December 2000 "*Testo Unico delle disposizioni legislative e regolamentari in materia di documentazione amministrativa*" (Law containing provisions relating to administrative documentation);
- In view of** the Legislative Decree N° 196 of 30 June 2003 "*Code regarding the protection of personal data*";
- In view of** the Ministerial Decree 18.06.2008 with which the annual amount of the grant to attend Ph.D. courses has been established at €13,638.47 gross, including social security expenses to be paid by the payee;
- In view of** the Law N° 240 of 30 December 2010, in particular art. 19, containing provisions for PhDs;
- In view of** the Ministerial Decree N° 45 of 8 February 2013, "*Regulation procedures for accrediting universities and PhD courses and the criteria for implementing Doctorate courses by credited Institutions*";
- In view of** the Ministerial Decree Prot. 628 of 19.08.2014 about accreditation;
- In view of** the note by MIUR, Ministry of Education, University and Research, Prot. no. 0006363 of 11.03.2016 concerning "Operative indications on the accreditation procedures of Ph.Ds. Academic year 2016/2017";
- In view of** the agreements stipulated with other Italian and foreign Institutions, as well as foreign countries, or specific international mobility programmes, in order to finance grants;
- In view of** the resolutions of the Departments of the University of Calabria to finance grants;
- In view of** the Agreement for the financing of n. 38 Phd scholarship by Calabrian Region of the 25 July 2016 in the framework Piano di Azione e Coesione – Azione 1.4 "Alta Formazione";
- In view of** the Rector's Decree No. 972 of 28 July 2016 that approved the award of additional grants financed by external bodies and Departments of the University;
- In view of** the Ministerial Decree No. 976 of 29 December 2014 concerning the "*Fondo per il sostegno dei giovani e favorire la mobilità degli studenti, ai sensi dell'art. 1 del D.L.-decreto-legge 9 maggio 2003 n. 105, convertito dalla legge 11 luglio 2003 n. 170*";
- In view of** the European "*Principles for innovative doctoral training*" (Report of mapping exercise on Doctoral Training in Europe "Towards a common approach" of 27 June 2011) for the development of Innovative PhD Courses, characterized by an international, interdisciplinary and intersectorial profile in line with the Italian Programma Nazionale per la Ricerca 2015-2020, the Programma Operativo Nazionale Ricerca e Innovazione 2014 – 2020 (CCI 2014IT16M2OP005) and the Programma Operativo Regionale Calabria FSE/FESR 2014 – 2020 (CCI 2014IT16M2OP006);
- In view of** the Rector Decree No. 973 of the 29 July 2016, related to Public competitive examination for admission to PhD programmes - XXXII cycle;
- Considering** that at the end of competition held according to Rector Decree No. 973 of the 29 July 2016 some places (4 with fellowship and 1 without) have not been assigned;



<b>In view of</b>	the requests of the Coordinators of the PhD courses interested to the reopening of the admission procedure on unfilled PhD positions;
<b>Considering</b>	appropriate to reopen the deadline of the call for admission to PhD course on vacant positions for admission to the 32 <sup>nd</sup> cycle PhDs at the University of Calabria;
<b>Considering</b>	necessary to provide about;

## DECREES

### Art. 1 Reopening of call for application

1. The present Decree reopens the call for application of the Rector Decree No. 973 of the 29 July 2016, related to Public competitive examination for admission to PhD programmes - XXXII cycle, for the position have not been assigned as described in the “Annex A – Analytical Tables - PhD courses 32<sup>nd</sup> cycle – Academic Year 2016/2017”, which is an integral part of this decree.
2. For each PhD course, Annex A provides the following information: the Coordinator, the duration, the relevant Department and any other Department that may be involved, the Subject Areas, the research topics or the course curricula, the requirements for participation, the admission criteria, the qualifications to be enclosed with the application, the assessment criteria, the number of available positions and the number of scholarships specifying the funders and the research fields also in relation to the single curricula if they are mentioned, information on the exam timetable, an address for enquiries and the course website are also indicated.

### Art. 2. New deadline for the call for application

1. The application for admission to the selection procedure, must be submitted, no later than **the deadline of 12:00 a.m. (Italian time) on 7 November 2016** exclusively using the on-line procedure available on the website: <http://unical.ugmanager.it>.
2. The date of submission of application for admission to the selection procedure is certified by the computer system, by the deadline for submission, no longer allow access and sending the application.
3. The other documents to be annexed to the application form are listed on the Rector Decree No. 973 of the 29 July 2016 and in the annex A of this decree.
4. **The payment of the admission fee of € 11,00 (Euro eleven/00) must be made, under penalty of exclusion from the selection**, before the expiry indicated at the comma 1 of this article 2, on the portal of payments at: <http://www.segreterie.unical.it/htm/pagamentionline.html> or SEPA transfer in favour of University of Calabria at the following bank details:  
**Bank: Unicredit**  
 IBAN: IT73T0200880884000103495463  
 Account Number: 000103495463  
 Swift Code: UNCRITMM  
 specifying the following description: "Fee for admission to the PhD selection in \_\_\_\_\_ - 32<sup>nd</sup> cycle".  
 The admission fee is not refundable.

### Art. 3 Admission

The admission tests schedule for each course listed in the abovementioned “Annex A” is equivalent to a notification to applicants. Any modifications, updates or additions to its content will be published exclusively on the website <http://unical.ugmanager.it> on the page *Decreti e Avvisi* and on the website <http://www.unical.it/postlaurea/dottorati>.

### Art. 4 Admissions Committees

1. The Admissions Committees in charge of the PhD competitions are appointed by the Rector in accordance with the University of Calabria “Regulation for PhD courses”.
2. The composition of each Admission Committee will be published, after the announcement deadline has expired, on the website <http://unical.ugmanager.it> on the page *Decreti e Avvisi* and on the website <http://www.unical.it/postlaurea/dottorati>.



### **Art. 5 Admission to PhD Courses**

1. The Rector acts to verify the validity of the competition records and approves the ranking lists for each selection procedure with a Rector's Decree.
2. The ranking lists will be published on the website <http://unical.ugmanager.it> on the page *Decreti e Avvisi* and on the website <http://www.unical.it/postlaurea/dottorati>.

### **Art. 6 Use of personal data**

1. Pursuant to Article 13 of Legislative Decree n.196 of 30 June 2003, candidates are hereby informed that their personal data shall be collected and processed in an automated database by the University of Calabria, even after the selection procedure, for use in the selection procedure and for the management of the academic career of successful PhD students. They may also be used for statistical purpose by the Ministry of the University and Research. Providing such data is necessary for the evaluation of the participation requirements. Failure to do so will result in the candidate's exclusion from the selection procedure.
2. The personal information provided by the candidates will be communicated to the University of Calabria's administrative office and to the Public Institutions directly concerned with the legal and financial position of successful candidates.
3. Candidates are entitled to benefit from the rights stated in Article 7 of Legislative Decree No. 196/2003, including access to personal data, their modification, update, integration, cancellation whether these data are false, incomplete or have been collected illegally, and likewise reserve the right to oppose any use of the data for legitimate reasons.

### **Art. 7 Person in charge of the procedure**

In compliance with Law No. 241 of 7 August 1990, the person in charge of the procedure stated in this announcement is Ms. Sonia Gallo Responsible of Formazione Post-Laurea – UOC Servizi Didattici e Formazione Post-Laurea Università della Calabria (e-mail: [sonia.gallo@unical.it](mailto:sonia.gallo@unical.it); tel: 0984/497003).

### **Art. 8. Referral norms**

For matters not expressly stated in this decree, reference is made to what is stated in the Rector Decree No. 973 of the 29 July 2016, available at the websites: <http://www.unical.it/portale/concorsi/>, <http://www.unical.it/postlaurea/dottorati> e <http://unical.ugmanager.it/>.

### **Art. 9 Final regulations**

1. This call for applications will be published on the website of the Italian Ministry of Education, Universities and Research and on the University websites: <http://www.unical.it/portale/concorsi/> and <http://www.unical.it/postlaurea/dottorati> and <http://unical.ugmanager.it/> is equivalent to a notification to all intents and purposes.
2. This reopening of the call for applications is the English translation of the Italian version and is not binding for legal purposes. In the event of dispute or disagreements, the Italian version of this call shall prevail.

**IL RETTORE**

(Prof. Gino Mirocle Crisci)



**Analytical forms PhD courses**  
**Cycle XXXII – Academic Year 2016/2017**

<b>N°</b>	<b>PhD Programme</b>	<b>Coordinator</b>	<b>Available positions</b>	<b>Pages</b>
1	Physical, Chemical and Materials Sciences and Technologies in Convention with the Italian National Research Council (CNR)	Prof. Roberto Bartolino	1 position with fellowship	5-6
2	Life Sciences	Prof.ssa Maria Carmela Cerra	1 position with fellowship	7-8
3	Economic and Business Sciences	Prof.ssa Patrizia Ordine	1 position with fellowship	9-10
4	Mathematics and Computer Sciences	Prof. Nicola Leone	2 positions one with fellowship and one without	11-12



**PhD Course in *PHYSICAL, CHEMICAL AND MATERIALS SCIENCES AND TECHNOLOGIES IN CONVENTION WITH THE ITALIAN NATIONAL RESEARCH COUNCIL (CNR)***

<b>Coordinator</b>	Prof. Roberto Bartolino, Dipartimento di Fisica, Via Pietro Bucci, Cubo 33B, Tel.: +39 0984/496122, e-mail: roberto.bartolino@fis.unical.it, SSD: FIS/07.
<b>Duration</b>	3 years
<b>Main Department</b>	Department of Physics
<b>Subject Areas</b>	FIS/01, FIS/02, FIS/03, FIS/05, FIS/06, FIS/07, CHIM/02, CHIM/03, ICAR/08
<b>Research Topics</b>	<p>The doctoral school is scientifically organised with 2 curricula each one having Three general topics curriculum A) Matter physics and astrophysics with the topics</p> <ol style="list-style-type: none"> <li>1) The nuclear and sub-nuclear scale of matter: Physics of fundamental constituents and their quantum description;</li> <li>2) The atomic and molecular scale of matter: chemistry, condensed matter physics and materials;</li> <li>3) Matter as a continuous medium: elasticity, fluids and plasmas;</li> </ol> <p>curriculum B) From the nanosciences towards applications with the topics</p> <ol style="list-style-type: none"> <li>1) Nanoscience and nanotechnology</li> <li>2) Facilities and innovative instrumentations.</li> <li>3) Technology transfer and industrial Ph.D.</li> </ol>
<b>Participation Requirements</b>	<p>- Italian Master's Degree (DM 270/04):  LM-3 Architettura del paesaggio; LM-4 Architettura e ingegneria edile-architettura; LM-4 c.u. Architettura e ingegneria edile-architettura (quinquennale); LM-6 Biologia; LM-8 Biotecnologie industriali; LM-10 Conservazione dei beni architettonici e ambientali; LM-11 Scienze per la conservazione dei beni culturali; LM-13 Farmacia e farmacia industriale; LM-17 Fisica; LM-18 Informatica; LM-20 Ingegneria aerospaziale e astronautica; LM-21 Ingegneria biomedica; LM-22 Ingegneria chimica; LM-23 Ingegneria civile; LM-24 Ingegneria dei sistemi edilizi; LM-25 Ingegneria dell'automazione; LM-26 Ingegneria della sicurezza; LM-27 Ingegneria delle telecomunicazioni; LM-28 Ingegneria elettrica; LM-29 Ingegneria elettronica; LM-30 Ingegneria energetica e nucleare; LM-31 Ingegneria gestionale; LM-32 Ingegneria informatica; LM-33 Ingegneria meccanica; LM-34 Ingegneria navale; LM-35 Ingegneria per l'ambiente e il territorio; LM-40 Matematica; LM-44 Modellistica matematico-fisica per l'ingegneria; LM-48 Pianificazione territoriale urbanistica e ambientale; LM-53 Scienza e ingegneria dei materiali; LM-54 Scienze chimiche; LM-58 Scienze dell'universo; LM-60 Scienze della natura; LM-66 Sicurezza informatica; LM-69 Scienze e tecnologie agrarie; LM-70 Scienze e tecnologie alimentari; LM-71 Scienze e tecnologie della chimica industriale; LM-73 Scienze e tecnologie forestali ed ambientali; LM-74 Scienze e tecnologie geologiche; LM-75 Scienze e tecnologie per l'ambiente e il territorio; LM-79 Scienze geofisiche; LM-82 Scienze statistiche; LM-92 Teorie della comunicazione; LMR/02 Conservazione e restauro dei beni culturali</p> <p>- Italian Specialist Degree (ex DM 509/99):  3/S (specialistiche in architettura del paesaggio); 4/S (specialistiche in architettura e ingegneria edile); 6/S (specialistiche in biologia); 8/S (specialistiche in biotecnologie industriali); 10/S (specialistiche in conservazione dei beni architettonici e ambientali); 11/S (specialistiche in conservazione dei beni scientifici e della civiltà industriale); 12/S (specialistiche in conservazione e restauro del patrimonio storico-artistico); 14/S (specialistiche in farmacia e farmacia industriale); 20/S (specialistiche in fisica); 23/S (specialistiche in informatica); 25/S (specialistiche in ingegneria aerospaziale e astronautica); 26/S (specialistiche in ingegneria biomedica); 27/S (specialistiche in ingegneria chimica); 28/S (specialistiche in ingegneria civile); 29/S (specialistiche in ingegneria dell'automazione); 30/S (specialistiche in ingegneria delle telecomunicazioni); 31/S (specialistiche in ingegneria elettrica); 32/S (specialistiche in ingegneria elettronica); 33/S (specialistiche in ingegneria</p>



	<p>energetica e nucleare); 34/S (specialistiche in ingegneria gestionale); 35/S (specialistiche in ingegneria informatica); 36/S (specialistiche in ingegneria meccanica); 37/S (specialistiche in ingegneria navale); 38/S (specialistiche in ingegneria per l'ambiente e il territorio); 45/S (specialistiche in matematica); 48/S (specialistiche in metodi per l'analisi valutativa dei sistemi complessi); 50/S (specialistiche in modellistica matematico-fisica per l'ingegneria); 54/S (specialistiche in pianificazione territoriale urbanistica e ambientale); 61/S (specialistiche in scienza e ingegneria dei materiali); 62/S (specialistiche in scienze chimiche); 66/S (specialistiche in scienze dell'universo); 77/S (specialistiche in scienze e tecnologie agrarie); 81/S (specialistiche in scienze e tecnologie della chimica industriale); 82/S (specialistiche in scienze e tecnologie per l'ambiente e il territorio); 85/S (specialistiche in scienze geofisiche); 86/S (specialistiche in scienze geologiche); 100/S (specialistiche in tecniche e metodi per la società dell'informazione).</p> <p>Degree reached in foreign Universities and legally recognized in Physics, Chemistry, Engineer, Architecture, Geology, Pharmacy or equivalent degrees.</p>	
<b>Procedures for the admission</b>	Evaluation of Qualifications and oral examination. The knowledge of one of the following languages: English, French, Spanish or German language will be assessed during the oral examination	
<b>Assessable qualification</b>	<ul style="list-style-type: none"> <li>- Curriculum vitae with details of any previous research experience;</li> <li>- Master Degree with the details of mark, duration and exams;</li> <li>- Research project;</li> <li>- List of published scientific articles (eventual).</li> </ul>	
<b>Assessment criteria</b>	<b>Maximum score 60 points</b>	
	<b>Qualification</b>	
	Research project	<b>Maximum score 30 points</b>
	CV and any previous research experience	
	Eventual published articles	
	<b>Oral examination</b>	
English presentation of the candidate research project and eventual published papers.	<b>Maximum score 30 points</b>	
Minimum score to reach the position: 21 pt		
<b>Positions and scholarship</b>	1 (one) position with scholarship reserved to candidate with foreign degree funded by Physics department on the topic: "Hyperbolic materials as nanophotonic platforms for environmental and biological sensing";	
<b>Agenda</b>	<b>Description</b>	<b>Date, Time and Place</b>
	Qualification assessment (presence of candidates not requested)	2016, November 10
	Oral examination	2016, November 11 at the 3:00 pm in Physics Department of University of Calabria. Seminars hall
The test results will be published on the PhD website at <a href="http://www.fis.unical.it/dottorato.php">http://www.fis.unical.it/dottorato.php</a>		
<b>Information</b>	Dott.ssa Chiara PERRI 0984/494006	
<b>Phd website</b>	<a href="http://www.fis.unical.it/dottorato.php">http://www.fis.unical.it/dottorato.php</a>	



### Phd Course in Life Sciences

<b>Coordinator</b>	Prof. Maria Carmela Cerra, Dipartimento di Biologia, Ecologia e Scienze della Terra (DiBEST), Via Pietro Bucci, Cubo 6/C, Tel.: +39 0984/492907, e-mail: maria_carmela.cerra@unical.it, SSD: BIO/09.
<b>Duration</b>	3 years
<b>Main Department</b>	Department of Biology, Ecology and Earth Sciences (DiBEST)
<b>Subject Areas</b>	BIO/01, BIO/05, BIO/06, BIO/09, BIO/10, BIO/11, BIO/15, BIO/18, CHIM/02, CHIM/09, ING-IND/09, ING-IND/24, MAT/09, MED/04
<b>Research Topics</b>	<p>This multidisciplinary Doctorate is focused on the following research topics.</p> <p>Experimental cardiology. Signal transduction mechanisms. Biodiversity. Conservation and wildlife risk. Developmental biology. Neurobiology. Morfofunctional cell alteration in eucariothes. Adaptive biology in aquaculture. Behavioural ecology. Morfofunctional adaptation to enviromental stress. Cell physiology. Systems of membrane transport. New estrogens-dependent molecular mechanisms in hormone-sensitive tumors progression.</p> <p>Cyto-physiology of apical meristems. Influence of secondary metabolites on cell function and structure. Environmental stress and parasites. Identification and characterization of genes involved in key metabolic processes. Comparative study of the mitochondrial genome and gene expression in plants. Biosystematics of plants. Flora and vegetation of Calabria. Biodiversity and conservation of plant resources. Bio-indicators of the quality of inland waters.</p> <p>Food and pharmacological processes. Renewable energy. Efficiency of energy production processes. Technology of air monitoring. Development of systems for treatment and management of waters and wastewaters. Development of systems for management and control water quality. Innovative systems for the optimization of the waste hierarchy and preventing the creation of waste. Development and characterization of new additives for asphalt industry to protect the health of workers and the environment.</p>
<b>Participation Requirements</b>	<p>- Italian Master's Degree (DM 270/04): LM-6 Biologia; LM-7 Biotecnologie Agrarie; LM-8 Biotecnologie Industriali; LM-9 Biotecnologie Mediche, Veterinarie e Farmaceutiche; LM-11 Scienze per la conservazione dei beni culturali; LM-13 Farmacia e farmacia industriale; LM-18 Informatica, LM-21 Ingegneria Biomedica; LM-22 Ingegneria Chimica; LM-32 Ingegneria Informatica; LM-33 Ingegneria Meccanica; LM-35 Ingegneria per l'Ambiente ed il Territorio; LM-40 Matematica; LM-41 Medicina e Chirurgia; LM-42 Medicina Veterinaria; LM-44 Modellistica matematico-fisica per l'ingegneria; LM-54 Scienze Chimiche; LM-60 Scienze della Natura; LM-61 Scienze della Nutrizione Umana; LM-69 Scienze e tecnologie agrarie; LM-70 Scienze e tecnologie alimentari; LM-74 Scienze e tecnologie geologiche, LM-75 Scienze e tecnologie per l'ambiente ed il territorio; LM-79 Scienze geofisiche; LM-82 Scienze statistiche; LM-86 Scienze zootecniche e tecnologie animali;</p> <p>- Italian Specialist Degree (ex DM 509/99) :3/S(specialistiche in architettura del paesaggio); 6/S (specialistiche in biologia); 7/S (specialistiche in biotecnologie agrarie); 9/S (specialistiche in biotecnologie mediche, veterinarie e farmaceutiche); 10/S (specialistiche in conservazione dei beni architettonici e ambientali); 12/S (specialistiche in conservazione e restauro del patrimonio storico-artistico), 14/S (specialistiche in farmacia e farmacia industriale), 20/S (specialistiche in fisica), 23/S (specialistiche in informatica), 26/S (specialistiche in ingegneria biomedica), 27/S (specialistiche in ingegneria chimica), 28/S (specialistiche in ingegneria civile), 33/S (specialistiche in ingegneria energetica e nucleare), 34/S (specialistiche in ingegneria gestionale), 36/S (specialistiche in ingegneria meccanica), 38/S (specialistiche in</p>



	ingegneria per l'ambiente e il territorio), 45/S (specialistiche in matematica), 46/S (specialistiche in medicina e chirurgia), 47/S (specialistiche in medicina veterinaria), 50/S (specialistiche in modellistica matematico-fisica per l'ingegneria), 61/S (specialistiche in scienza e ingegneria dei materiali), 62/S (specialistiche in scienze chimiche), 68/S (specialistiche in scienze della natura), 74/S (specialistiche in scienze e gestione delle risorse rurali e forestali), 77/S (specialistiche in scienze e tecnologie agrarie), 78/S (specialistiche in scienze e tecnologie agroalimentari), 81/S (specialistiche in scienze e tecnologie della chimica industriale), 82/S (specialistiche in scienze e tecnologie per l'ambiente e il territorio), 85/S (specialistiche in scienze geofisiche), 92/S (specialistiche in statistica per la ricerca sperimentale). - Italian Degree (ante DM 509/99) or equivalent to master degree above listed. - Academic degrees obtained abroad equivalent to master degree above listed.			
<b>Assessable qualification</b>	- Curriculum vitae; - Research project; - Eventual other scientific publications or participation in meeting/conferences.			
<b>Criteria qualification</b>	Total Score: 60			
	<b>Qualification</b>		Total Score: 30	
	Research Project		Total Score: 20	
	CV		Total Score: 5	
	Other qualifications: Publications, Participation at scientific meetings		Total Score: 5	
	<b>Oral Examination</b> The oral examination will focus on the discussion of research project, curriculum vitae and other qualifications. Candidate's skills will be evaluated to verify its abilities to carry out the proposed project. For foreign candidates there will be the possibility to be examined by using a skype connection		Total Score: 30	
Minimum Score required for the admission to the oral examination: 21 points.				
<b>Positions and scholarship</b>	1 (one) position with scholarship funded by CephRes on the topic: " <i>Biology and/or physiology of cephalopods</i> ";			
<b>Agenda</b>	<b>Description</b>	<b>When</b>	<b>Time</b>	<b>Where</b>
	Evaluation qualification (applicant presence not requested)	10/11/2016		
	Oral Examination	11/11/2016	9:00	Aula Covello (DiBEST) University of Calabria
<b>Information</b>	Coordinator: Prof. Maria Carmela Cerra, Dipartimento di Biologia, Ecologia e Scienze della Terra (DiBEST), Tel.: +39 0984/492907, e-mail: <a href="mailto:maria_carmela.cerra@unical.it">maria_carmela.cerra@unical.it</a>			
<b>Phd website</b>	<a href="http://www.dibest.unical.it">http://www.dibest.unical.it</a>			





### PhD Course in ECONOMIC AND BUSINESS SCIENCES

<b>Coordinator</b>	Professor Patrizia Ordine – Department of Economics, Statistics and Finance – Cubo 1/C – Arcavacata di Rende (CS) – Tel.: 0984.492458 – E-mail: p.ordine@unical.it – Subject Area: SECS-P/02			
<b>Duration</b>	3 years			
<b>Main Department</b>	Department of Economics, Statistics and Finance (Other Department involved: Department of Business and Law)			
<b>Subject Areas</b>	SECS-P/01, SECS-P/02, SECS-P/06, SECS-P/07, SECS-P/08, SECS-P/11, MAT/09, SECS-S/01, SECS-S/06			
<b>Research Topics</b>	The doctoral program is intended to develop competencies on theoretical and applied economics, statistics, finance and business. These competencies may be used in various jobs, i.e. universities and research departments, both national and international, as well as in no-profit organizations.			
<b>Participation Requirements</b>	<ul style="list-style-type: none"> <li>- Italian Master Degree (DM 270/04): LM-16 Finanza, LM-40 Matematica, LM-56 Scienze dell'Economia, LM-77 Scienze economico-aziendali, LM-82 Scienze statistiche, LM-83 Scienze statistiche attuariali e finanziarie;</li> <li>- Italian Master Degree (ex DM 509/99): 19/S (specialistiche in finanza), 45/S (specialistiche in matematica), 64/S (specialistiche in scienze dell'economia), 84/S (specialistiche in scienze economico-aziendali), 91/S (specialistiche in statistica economica, finanziaria ed attuariale);</li> <li>- Italian BA Degree (ante DM 509/99) or equivalent to master degree listed above;</li> <li>- Academic degree obtained abroad equivalent to master and BA degree listed above.</li> </ul>			
<b>Admission procedures</b>	<ul style="list-style-type: none"> <li>– Evaluation of qualifications and written and oral examination.</li> <li>– Knowledge of English language will be evaluated during the oral examination.</li> </ul>			
<b>Assessable qualification</b>	<ul style="list-style-type: none"> <li>- Curriculum Vitae e Studiorum (CV)</li> <li>- Research Project</li> <li>- English language certification (if available)</li> </ul>			
<b>Assessment criteria for Applicants</b>	<b>Evaluation qualification</b>		<b>Total Score: 30/30</b>	
	Research Project		Total Score: 13	
	CV		Total Score: 15	
	English Language		Total Score: 2	
	<b>Write Examination</b> Selection criteria: Written paper on economic theory and applied economics		<b>Total Score 30/30</b>	
	<b>Oral Examination</b> Selection Criteria: Oral examination on economic theory and research proposal.		<b>Total Score: 30/30</b>	
	Minimum Score required to be admitted to the next examination: 21/30.			
<b>Positions and scholarship</b>	1 (one) position with scholarship funded by University of Calabria			
<b>Agenda</b>	<b>Description</b>	<b>When</b>	<b>Time</b>	<b>Where</b>
	Evaluation Qualification (applicant attendance not requested)	10/11/2016		



	Write Examination	10/11/2016	15:00	Seminar Room of the Department of Economics, Statistics and Finance - Cube 0/C - Ground Floor
	Oral Examination	11/11/2016	10:00	Seminar Room of the Department of Economics, Statistics and Finance - Cube 0/C - Ground Floor
	The results of the exam will be posted on the site: <a href="http://www.ecostat.unical.it/dea/">http://www.ecostat.unical.it/dea/</a>			
<b>Information</b>	University of Calabria Ponte Pietro Bucci, Cubo 0/C 87036 Arcavacata di Rende (CS) – Italy Coordinator of the PhD: Professor Patrizia Ordine Tel.: 0984/492458 Fax: 0984/492421 Email: <a href="mailto:p.ordine@unical.it">p.ordine@unical.it</a>			
<b>Phd website</b>	<a href="http://www.ecostat.unical.it/dea/">http://www.ecostat.unical.it/dea/</a>			



### Doctorate in Mathematics and Computer Science

<b>Coordinator</b>	Professor Nicola LEONE, Department of Mathematics and Computer Science, Via Pietro Bucci, Cubo 30B, Tel.: +39 0984/496433, e-mail: leone@mat.unical.it, Subject Area: INF/01.
<b>Duration</b>	3 years
<b>Main Department</b>	Department of Mathematics and Computer Science
<b>Subject Areas</b>	Computer Science, Geometry, Complementary Mathematics, Mathematical Analysis, Probability and Statistics, Mathematical Physics, Operations Research
<b>Research Topics</b>	<p>The main research topics concerned in the doctor's degree are listed below:</p> <ul style="list-style-type: none"> <li>• Artificial Intelligence, Knowledge Representation and Reasoning, Answer Set Programming, Logic Programming, Constraint Satisfaction Problems.</li> <li>• Databases, Data and Knowledge Integration, Data and Text-Mining, Knowledge Management.</li> <li>• Theoretical Computer Science, Game theory, Decidability and Complexity Theory.</li> <li>• Grid Computing, Computational Science, Cellular Automata.</li> <li>• Optimization Models and Methods for solving problems in Transport and Logistics.</li> <li>• Combinatorics</li> <li>• Study of canonical models of surfaces of general type. Algebraic curves and their moduli spaces, Groups and Graphs.</li> <li>• Relationships between algebra and geometry and geometry and mathematical physics in modern and contemporary art. Historical developments of the theory of decisions. History of mathematics in education. Mathematics Education with particular reference to the role and use of technology in teaching and learning</li> <li>• Calculation of variations. Variational methods in Nonlinear Analysis; Theory of critical points and applications to nonlinear partial derived equations. Geometry of Banach spaces; Ordinary differential equations problems differential to the edge and not local. Methods of approximation implicit and explicit. Minimum problems and projections. Solutions to problems of equilibrium (mixed and generalized). Uniform distribution and discrepancy. Almost Monte Carlo integration methods.</li> <li>• Processes and random fields, namely: percolation, statistical mechanics, interacting particle systems, dynamic systems, quantitative finance, stochastic simulation and mathematical statistics.</li> <li>• Problems of Quantum Theory. Group-theoretic approach to the theory of the interaction. Semiclassical models and quantum for the transport of current and heat in semiconductors. Problems coupling devices-electrical networks.</li> <li>• Sequences of Sheffer polynomials and approximation of operators involved. Numerical approximation of solutions of partial differential equations of high order and with boundary conditions that initial. Approximations for Scattered Data Interpolation and rational. Applications of mathematics to engineering problems and statistics.</li> </ul>
<b>Participation Requirements</b>	- Italian Specialist/Master's Degree (ex DM 509/1999 e DM 270/2004) or equivalent Degree awarded by an accredited foreign university or Italian University Degree (ante DM 509/1999).
<b>Admission Procedures</b>	Evaluation of qualifications, written examination and oral examination. The knowledge of the English Language will be assessed during the oral examination
<b>Assessable qualification</b>	- Research Project - Curriculum Vitae et Studiorum (CV), including a copy of Bachelor's and Master's



	Degree (in Italian or English), and the list of examinations taken with grades and final mark (download the template from <a href="http://www.mat.unical.it/phd/Admission">www.mat.unical.it/phd/Admission</a> ) An additional copy of above-mentioned documents has to send to the following e-mail address: <a href="mailto:phd@mat.unical.it">phd@mat.unical.it</a>			
<b>Assessment criteria</b>	<b>Total Score 90/90</b>			
	<b>Assessable Qualification</b>		<b>Total Score 30/30</b>	
	Research Project		Total Score 6	
	Curriculum vitae et studiorum		Total Score 24	
	<b>Written Exam</b> Operating methods: an essay and two exercises on the disciplines pertaining to the doctorate.		<b>Total Score 30/30</b>	
	<b>Oral Examination</b> Operating methods: discussion about the project and written examination. Interview on the disciplines of interest for the doctorate. Foreign candidates can take the exam via skype.		<b>Total Score 30/30</b>	
	Minimum Score required for the admission to the next tests and for the oral examination: <b>score 21/30</b> .			
<b>Positions and scholarship</b>	2 (two) positions of which:			
	1 (one) position granted by Calabrian Region.			
	1 (one) position without grant.			
<b>Agenda</b>	Description	When	Time	Where
	Assessable qualification (applicants presence not requested)	November 9, 2016		
	Written Exam	November 10, 2016	10:30 am	MT10 – Cube 30B II Floor - Department of Mathematics and Computer Science – University of Calabria
	Oral Examination	November 11, 2016	10:30 am	MT10 – Cube 30B II Floor - Department of Mathematics and Computer Science – University of Calabria
	The results of the exam will be posted on the site: <a href="http://www.mat.unical.it/phd/Admission">www.mat.unical.it/phd/Admission</a>			
<b>Information</b>	<a href="mailto:alessia.cosentino@unical.it">alessia.cosentino@unical.it</a>			
<b>Phd website</b>	<a href="http://www.mat.unical.it/phd">www.mat.unical.it/phd</a>			